Talking About the Importance of Effective Teaching in High School Physics

https://oajer.damray.com/

OPEN ACCESS

DOI:
Received: June 27, 2022
Accepted: July 20, 2022
Published: August 23, 2022

Haijun Wang

Automobile Department, Vocational Education Center, Changshu City, Jiangsu Province, China.

Abstract

High school physics achieves effective teaching. According to the characteristics of physics, we should explore reasonable and scientific teaching methods to help students better understand and master physics knowledge. In the process of physics teaching, teachers should closely link physics knowledge with real life, Pay attention to the important role of experimental teaching. Teachers need to create a scientific and effective physics teaching situation, so that students can learn physics knowledge in the situation. In vocational high schools, teachers should not only pay attention to students' mastery of theoretical knowledge of physics, but also to cultivate students' physical skills. The school organizes skills competitions to enrich students' extracurricular life and exercise students' mastery of physical knowledge and skills.

Keywords

High School Physics, Effective Teaching

1. Introduction

As a key subject in high school, the influence of physics on students' development is self-evident. For students in vocational high school, learning physics is directly related to their future employment, so it is important to improve physics knowledge for vocational students, then how to achieve effective teaching in high school physics classroom also becomes a problem worthy of attention.

2. In the process of physics lectures, teachers should closely link physics knowledge with the actual life, and pay attention to the important role of experimental teaching

Physics as a natural science, all kinds of phenomena in nature, problems people encounter in life practice and all as-

pects of human life are closely related to physics knowledge. Physics is also a subject that most students in high school are required to study. Many students find physics to be a difficult subject to understand and learn. To a certain extent, this is because teachers do not adopt appropriate and effective teaching methods that lead students to misunderstand physics as a subject.

In the physics classroom, the teacher can start from a phenomenon in life, first let the students discuss what kind of physical phenomena exist in this phenomenon, how to use physical knowledge to explain this phenomenon? After the discussion, the teacher will explain why this physical phenomenon occurs and the role this physical phenomenon plays in people's production practices. The close connection with real life will not make it difficult for students to understand physics knowledge. When students encounter some phenomena in their daily life, they will think of using physics knowledge to explain them.

2.1. Teachers need to create scientific and effective physics teaching situations, so that students can learn physics knowledge in the context

Creating physics teaching situations is a good way to achieve effective teaching of physics. When teachers create physics teaching situations, they should start from the phenomena that students are familiar with, integrate physics knowledge into teaching situations, and let students learn in teaching situations while mastering physics theoretical knowledge. Teachers build physics teaching situations that meet the learning situation of vocational students, which can play a role in lowering the threshold of students' understanding of physics knowledge, and then make physics knowledge acceptable to most students. Teachers understand that physics is a subject from life, teachers need to find the connection between physics in the classroom and real-life physics in order to create a suitable teaching situation, for example, when learning the lesson of "synthesis and decomposition of forces", first let students use two spring dynamometers to measure the weight of an object, after the measurement, write down the reading. After that, the students will measure the same item at an angle and write down the reading, and then draw a force analysis diagram of the item on a piece of paper and ask what the two readings are different. Teachers ask these questions to build a situation for students to discuss the problem in the teaching situation, think about the problem, solve the problem, through their own exploration to get the real answer to the problem.

3. Cultivate students' interest in learning physics and show them the unique charm of physics in teaching physics

3.1. In the process of teaching physics experiments, let students actively participate in the experimental process, and appreciate the interesting nature of physics, so as to increase their interest in learning physics

Physics as a natural science, in the process of learning physics, there is no shortage of physics experiments. Nowadays, many high schools do not pay attention to the role played by physics experiments in teaching, which makes it difficult for many students to understand physics knowledge and the principles of physical processes, and students in vocational high schools pay more attention to the use of physics skills, so in physics teaching, physics experiments are the top priority. Teachers in the process of teaching physics experiments can be designed according to the students' ability to design some simple and interesting experiments, so that each student to participate in the process of physics experiments, for example, in the physical electricity, many students are difficult to understand the circuit connection, short circuit, broken circuit and other circuit conditions, then you can teach through experiments so that each student hands connect a complete circuit, and simulate the circuit short circuit, broken circuit and other conditions. The students can then experiment with a complete circuit and simulate a short circuit or break circuit. Let the students explore the process themselves. In the process of investigation students can easily grasp the theoretical knowledge of physics, in the experimental teaching, teachers should actively guide, found that students have difficulty handling the situation to help students solve, and in the experimental process, to explain to students the principles of physical experiments and applications. Let students appreciate the unique charm of physics from physics experiments, so as to improve students' interest in learning physics.

3.2. In classroom teaching, teachers should fully mobilize students' interest in learning and improve students' mastery of physics knowledge

For students in vocational high schools, it is necessary to improve physics skills, but also to master theoretical knowledge of physics. Most of the students in vocational high schools are not particularly good in cultural subjects. Then, in

the physics teaching classroom, teachers are needed, to fully mobilize students' interest in learning, to use diversified teaching methods, to explain the relatively boring physics theoretical knowledge, to give students appropriate tasks for the real situation of vocational high school students, not to be overly ambitious, to give students after-school homework that can be completed independently but also challenging. In class, these after-school assignments should be explained to take care of each student's level, and teachers can assign tiered assignments that are suitable for the knowledge level of most of the majority of students [1]. In the classroom, the teacher should fully interact with the students and make them the center of the classroom. To cultivate students' interest in learning physics, teachers can make good use of teaching resources such as multimedia to make the physics classroom lively and interesting, which is helpful for students' knowledge mastery. Teachers should proactively ask their classmates to find out from the students, for example, whether the mastery of knowledge in class will be too easy or too difficult, and how the homework will be completed after class. Teachers should have a general understanding of the physical ability of the class students, after that according to this situation to carry out the corresponding teaching methods as well as teaching difficulty, step by step, gradually let the students appreciate the interesting physics, step by step let the students from passive learning to active learning, improve the level of knowledge of the students to master the level of knowledge of physics.

4. In vocational high schools, teachers should pay attention not only to students' mastery of theoretical knowledge of physics, but also to the development of their physics skills

4.1. For vocational high school students, the importance of improving the hands-on ability

As a vocational high school student, their future work largely depends on their hands-on ability. Then, it is important for students to improve their physics skills. Teachers should not only explain the theoretical knowledge of physics, but also let students observe the process of implementing physics skills through some props or models. Teachers can also prepare a set of tools so that students can exercise their own hands-on skills and develop their own physics skills to improve. Individual students who are more hands-on can even use their knowledge of physics to explain how certain appliances work and to fix certain damaged appliances. Students can't do this without teachers' teaching for physics experiments. Physics experiments in electricity and mechanics are very interesting, so that students can further understand physics knowledge through physics experiments, which is helpful for teachers to achieve effective physics teaching in physics classrooms.

4.2. Schools can hold skill competitions to enrich students' after-school life and exercise their mastery of physics knowledge and skills

At the school level, schools can organize some physics skills competitions with the aim of developing and exercising students' physics skills, encourage students to participate actively, and set up awards and certificates within a suitable range to encourage students and affirm their skill level [2]. The school can also contact some companies so that students can work as interns during winter and summer vacations to get an early understanding of the employment situation and the requirements of the society for talents, so that they can continuously develop their skills and enrich their knowledge at school. The school can also organize some teachers to match students with some national projects, such as Internet Plus and Challenge Cup, and encourage students to actively participate in such competitions and provide conditions to support them. By organizing skills competitions, schools can enrich students' after-school life, exercise students' mastery of physics skills, enrich students' own knowledge and improve themselves, then students can find a good job as soon as possible after graduation from school.

5. Conclusion

In conclusion, it is very important for students in vocational high school to learn theoretical knowledge of physics, and it is even more important to develop physics skill level. It needs every physics teacher's responsible attitude, good teaching method, student-oriented education concept, constantly thinking for students, guiding students to improve themselves, improving their own quality, cultivating the improvement of physics level, and realizing effective teaching in physics classroom.

References

[1] Ma Hushan. (2018). An introduction to the construction strategy of efficient classroom teaching in high school physics under the new curriculum reform [J]. Academic Week, 2018(10): 27.

[2] Wang Xiaoyong. (2018). Interpretation of the characteristics of high school physics teaching without the cultivation of abstract ability [J]. Scholastic Weekly, 2018(10): 93.