MEDIUM IN EDUCATION MODERN PHYSICS OF TEACHING IMPORTANCE AND HOW BOLIS NEED ABOUT THANK YOU

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ABSTRACT

This study defines physics education and highlights the importance and necessity of physics education in secondary education, its benefits and goals in child development. Considering the benefits of physics knowledge in personal and social life, school students should get the best possible physics education. In addition, in today's world of rapidly developing and changing technology, it is said that basic physics education is needed for people to perceive and interpret technological changes, and it is emphasized what an effective and continuous physics education should be. As a result, an assessment and suggestions were made about what modern physics teaching and teachers should be in order to achieve the general goals of physics education.

Key words: *Physics teaching, learning-teaching, teaching strategy, technology*

Enter

Today, living in the information age, following the science and technology created as a result of scientific activity is the basis of progress and development. The most characteristic feature of modern civilization; It is scientific, considering scientific attitude and behavior as an integral part of life. A person begins to learn from birth, the acquired knowledge, skills and experiences increase day by day. Every day, new technologies are produced, new inventions are made. From computers to space and communication technologies, these changes must be tracked and understood in order to take advantage of them. It is not enough to follow the changes in the world to reach

and surpass the age; Also, it is necessary to adapt to them in a short time and produce new technologies. Only countries that have adapted to these conditions can be leaders in the international economic and technological race. The rate of emergence of new information in science and technology; This is an indication of the importance of knowledge production, knowledge utilization and the training of knowledge creators. As a result, modern civilization has brought with it competition. Society's way to win this competition and progress in the rapidly developing science and technology environment; The main thing is to educate individuals who have received education in various fields, who can think, research, apply what they see and think to life, who have the ability to think constructively, creatively and critically, and to educate a person well. In this respect, science is in society; It can grow and develop in integration with its style, theory, products, producers and transmitters of science, inventions and discoveries, technology, national and universal values and education system.

There is a great need for people who are armed with the knowledge and skills required by the times, who have achieved qualifications that are sought after all over the world, who know how to think constructively, creatively and independently. The most general goal of our education system is to educate good human behavior accepted by the society, to educate competent and versatile individuals who have the necessary behavioral and scientific qualities to raise the society to the level of modern civilizations. , and who can serve the development of a scientific, modern country. On the other hand, it is necessary to develop children if it is intended that they will be able to cope with the difficulties of the time we live in individually and become a new driving force for the survival of the society in which they live. creativity, self-confidence, excellence, independent thinking, self-control and problem-solving potential through the education provided. Our age, in which technology is rapidly developing and dominating the world day by day, has been given various names such as "Age of Science", "Age of Space", "Age of Communication and Technology". The development and existence of countries depends on their ability to keep pace with this age. In parallel with such a rapid development, all the research conducted by man in

order to know and understand nature gave birth to Science. The contribution of science and the technology produced on its basis to the development of societies is incalculable. The new information produced and the developing technology make the importance of science especially clear. Science is also called basic science and it affects other fields of science with the research conducted and the results obtained, besides showing structural differences from other fields of science. These differences can be summarized by saying that Science is international in nature, it is based on more practical applications than other branches of science, and therefore it is expensive, continuous, and information at every stage is constantly available. Considering these structural differences, it can be said that science is of great importance in the country's development. science; It is a branch of science that tries to explain animate and inanimate things and the relationships between them based on cause and effect.

Science lessons are included in school programs for three purposes.

These are:

- provide general information on subjects;
- Acquiring mental and manual skills through science classes;
- to provide the basis of vocational education in the fields of science and technology.
- develop a realistic and consistent outlook;
- explain the conceptual structure of science;
- Formation of skills necessary for using the scientific method;
- Ability to adapt to new developments in the field of science and technology;
- Training productive citizens for society.

It can be said that based on the goals mentioned above, natural science courses are of great importance in the education process of a person in the education of people needed in our country. One of the main goals of science education is to make students scientifically literate. Scientific literacy; This is knowing the essence of science, understanding how knowledge is obtained, understanding how information in science depends on known facts and how it can change when new evidence is collected,

knowing the main concepts and hypotheses in science and understanding the difference between is described. scientific evidence and personal opinion. Societies composed of scientifically literate individuals can both easily adapt to innovation and lead innovation themselves. It is well known today that the achievement of the level of modern civilization depends on research in the field of science, in particular, physics. The contribution of science, especially physics, to the formation of a coherent and rational system of thinking is greater than that of other sciences. Physics, with its methods and results, forms the rational and technological basis of worldview. Physical; It is a branch of science that tries to find the laws governing the development in space and time of all kinds of matter around us, including us. Physics is a science that studies the understanding of nature, the study of the causes and consequences of natural phenomena, and their mathematical expression. For this purpose, it develops methods of scientific investigation and research, forms the basis of technological developments, and contributes to the development of other sciences. influence their findings, rules and research methods and contribute to their development in all areas of everyday life. In this context, the purpose of a given physics course can be defined as creating a multifaceted, cultural learning environment in which life is lived, new experiences are gathered, personal skills are developed, and sources of error are eliminated. The goal here is to channel nature for the benefit of humanity. The source of all natural sciences is physics.

General goals of physics education;

- Formation of students' scientific thinking skills;
- Be able to show the student how to use his mind;
- to be able to make connections between science and technology;
- understanding the importance of science and technology in the development of society;
- Acquire the ability to think constructively and critically;
- be able to show the results of research, investigation, observation and experiment in words, writing and drawing;

•To be able to use the methods of observation, investigation, experiment and research in achieving scientific results and understanding the laws;

•Interest in physics, following new developments and understanding the importance of new developments. In accordance with these goals, physics sets specific goals for the acquisition of appropriate behavioral characteristics, taking into account the development and ability levels of students.

A student taking a physics course;

•Appreciates physics as a human activity and understands it as one of several ways to help us understand the world in which we live.

•Understands and applies research methods used in physics;

•Knows, understands and applies concepts and principles in physics;

•Use knowledge, concepts and methods in physics to evaluate changes in society and technology;

•Understands the historical development of science and technology.

Today, the great progress of science and technology is changing the social structure at a rapid pace, and at the same time, there are changes in the goals and methods of education, the physical structure of the educational environment, the interests and desires of students, and traditional social structures. changes are happening. the role of teachers. The new goal of education is to create a model of a person who knows where and how to use information, who recognizes his own learning methods and makes good use of them, who uses previous knowledge to generate new information. One of the most important goals of physics education. to ensure students' continuous understanding and learning of physics concepts. Access to information has become much easier these days; However, deciding how to use the information proved difficult. At the same time, the formation of the ability to apply theoretical knowledge in practice is of great importance. In education, it is emphasized the need to use methods aimed at educating individuals who can use knowledge and turn it into production.

Based on the realization that the importance of physics education is increasing day by day, researches on this issue are manifested as the need to improve the quality of science education. The purpose of physics education is to form and learn high-level thinking skills in students. and scientifically study the environment and the world they live in. In this way, students adapt to life easily. By observing the environment very well and establishing cause-effect relationships between events, it is possible to achieve results. It can be said that an active learning approach that allows students to learn through action and experience helps to make the "Physics Course" more effective and efficient in our schools. In recent years, the theory of constructive education, which has been increasingly included in the curriculum, allows students to actively participate in learning, to conduct research for in-depth knowledge, and to be able to use the information they have learned in various situations both at school and at school. . Instead of being a passive receiver of information in the behaviorist theory, in everyday life. It emphasizes the need for a learning environment in which students can grow. aimed at building knowledge through learning. environment instead of passively receiving information.

A successful active learning program should have the following key features.

- Students spend most of their class time active, thinking, working, and interacting with other students.
- The student is in constant contact with other students and the teacher. But in the classical teaching model, there is almost no interaction between students.
- The teacher plays the role of a guide in accessing information, not a transmitter of information. In other words, the teacher guides more.
- Students take responsibility for their learning. This can be demonstrated by attending classes, learning independently from the textbook, and completing homework assignments on time.

In the classical teaching method, the teacher is active, and the student is semi-passive or completely passive. If we consider the teacher as the transmitter, the student as the receiver, and the lesson as the message, most of the message in the learning

environment cannot be received by the receiver. The classical teaching method does not provide sufficient understanding for most students. "Research shows that the classical method of teaching is not enough. Information transmission is effective, but the student's assimilation of information is hardly noticeable." Some of the disadvantages of this method are listed below.

- Physically, a person's concentration time is between 10-15 minutes.
- A lesson taught classically can be compared to a raging river.
- There is no time to think on the river. If no thought action occurs, most of the incoming information is recorded in short-term memory and does not leave a deep impression on the student.
- Most of the courses cover the topics covered in the textbook, there is never time for advanced topics and techniques.
- Most courses focus on highly technical issues. However, what needs to be done is to focus on the physical phenomena themselves and try to understand these phenomena on a conceptual basis.

Traditional teaching methods follow the method of delivering information directly to the learner. This guides the students to remember the information conveyed. In addition, the student's opinions, interests and abilities are not taken into account in subjects taught in traditional ways. It does not take into account knowing the student and responding to his needs. In the classic teaching model, there is interaction. Students are encouraged to ask questions and are allowed to discuss things among themselves. But this noise is never as much as it should be. Only a small number of students present in the classical environment are interested in the course, ask questions and participate in discussions. Most of the rest of the class are passive spectators and listeners. On the contrary, due to discussion groups in an active learning environment, interaction within and between groups increases and every student inevitably participates in the lesson. Physics classes taught by classical teaching methods cannot give students a deep idea about the workings of nature. Therefore, it is necessary to abandon the descriptive approach in teaching classical physics and use one of the active teaching methods.

possible with the methods used. . Therefore, teaching physics with scientific teaching methods; It plays an important role in educating a person who understands the essence of subjects through constant research, conducts experiments, observes, and develops scientific views.

Summary

Many situations we encounter and observe in our daily lives are related to physics. Understanding that the events that affect a person's life are related to the information they have acquired at school will serve to increase their scientific literacy and increase their interest in science and technology. If these relationships are not established in school, people will not be able to acquire the necessary knowledge and skills for an easy life in today's technology-dominated world. If students feel that physics knowledge is not abstract, but related to their own experiences, they will learn the science experientially, because their relationship with it will increase. In fact, this association makes it easier for them to learn. With the help of properly selected and applied methods in the classroom environment, the educational process can be effective and educational goals can be achieved. Therefore, teaching physics with scientific teaching methods; It plays an important role in educating a person who understands the essence of the topics through constant research, experiences, observes, interprets, and develops a scientific attitude.

Instead of the classic functions of schools, which are considered mainly as a place of learning, techniques such as research and effective work should be provided. Naturally, in fulfilling these tasks, in ensuring that physics education is at the required level, teachers are undoubtedly responsible for a great deal of responsibility. depends on the activity. The main task of physics teachers is not to directly provide information to students; Provide access to information to students by creating an effective learning environment and be a role model for students in the learning environment. In order to become an example for students, the students' attitude towards the teacher, their lessons with the teacher should first of all develop positively. Because the positive or negative attitude of the students based on the value and belief system has a direct

impact on the learning process and this influence will control the future life of the students.

Students achieve the goals of physics education through the following four processes, which are inseparable from each other and must be implemented as a whole:

- by asking questions, conducting inspections and observations, generating and evaluating data; In short, scientific thinking,
- compare their own results and conclusions with other relevant results and conclusions and different opinions and write and present them appropriately; In short, through scientific communication,
- c) explain the various observations, problems and ideas they encounter using the results of science; In short, by applying science to life,
- By correctly and correctly applying the acquired knowledge and skills; In short, by acting responsibly.

While these processes are being carried out;

- active participation of students in learning is required;
- students
- learns in different ways and at different speeds,
- It should be noted that learning is an individual and group process.

In conclusion, the use of student-oriented teaching method in physics education can arouse students' interest in science, look at the subject from different perspectives, consult, discuss, work in cooperation with others, solve problems or It teaches students to find the answers, arouse interest in the subject, and look at the subject in a different way. asking questions, identifying problems, thinking critically, using information independently, and standing on your feet. From these considerations, it is clear that student-centered teaching plays an important role in teaching physics.

Suggestions

- Teaching in which the teacher is active should be abandoned and the focus should be on student-centered teaching. It is necessary to ensure that all students are active.

•A student should experience the learning process from beginning to end and experience the pleasure of acquiring knowledge. A student must learn to learn. .

•In order for students to understand and use emerging technologies and keep abreast of innovations, it is necessary to create the necessary procedures in the program and ensure that the subjects in the program are parallel with the technological progress.

•Even if it is not possible to conduct experiments in schools due to various negative circumstances such as lack of laboratories and insufficient experimental materials, at least instead of not conducting experiments, students should be asked to work in groups or conduct demonstration experiments. should be required. In addition, in such cases, exercises and experiments related to the subjects of the physics course curriculum should be included in which each student can take materials from the environment in which he lives, nature, which is considered a unique laboratory, and perform them.

•Teachers should be given the ability to use laboratory equipment that changes in parallel with technological developments, conduct experiments and closely monitor technological changes in the world.

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