

игнорированием туннельной составляющей прозрачности барьера. Иначе говоря, туннелирование может быть, по сути, обязательным атрибутом даже не квантовых эффектов.

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### PROBLEMS OF FORMING INDEPENDENT ACTIVITY OF VOCATIONAL SCHOOLS IN THE PROCESS OF PHYSICAL EDUCATION

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**Annotation:** Today, one of the important tasks of secondary specialized and vocational education is the education of talented individuals, deep thinkers who have achieved an independent worldview. Because the psychology of submission to the opinion of elders, following various conflicts and other people's ideologies will inevitably lead to a deterioration in the spirituality of society.

**Keywords:** The confinement of electrons within quantum wells, leading to quantized energy levels, A nanostructure with discrete energy levels for electrons, crucial in optoelectronic devices.

It is known that although independent thinking and independent activity are individual characteristics of a deaf person, this characteristic develops in society when the environment of relations between people is good. In particular, the desired goal can be achieved only if the independent activities of students in the educational process are organized and directed on a scientific basis. Here we will give a brief description of the concepts of "independent learning" and "independent work", which are often found in the scientific and methodological literature. By independent learning we mean that a certain part of the scientific program materials is studied and

agreed upon by students. The number of hours allocated for independent study is indicated in the curriculum. For example, in vocational schools, students learn a specific portion of the curriculum materials independent of textbooks and usage. By independent work we mean a set of tasks that are completed by the student independently within a set time frame under the supervision of the student in order to deepen and expand the material studied in class or at home.

In the process of teaching physics, factors such as giving correct and reasonable answers by the student to any questions from students, encouraging the timely expression of correct opinions by students, finding out the opinion of each student on a particular educational problem. A science teacher, approving and objectively evaluating the correct answers, forcing students to think independently, is considered one of the main conditions for orientation.

Our study of existing educational, scientific and methodological literature, observation and generalization of examples of best practices shows that in the process of studying physics, the organization, formation and development of students' independent activities takes place in accordance with the goal:

- highlight some materials in the textbook, even topics for independent study;
- solving problems on a given topic;
  - independently perform existing laboratory work and make calculations in various ways;
- transfer of independent experiments and observations, their recording,
- participation in drawing up the necessary conclusions;
  - work with additional proposed diagrams and graphs;
- computer study of the proposed topic;
  - preparation of abstracts, lecture texts;
  - teach students to solve puzzles and tasks in physics, ensure their participation in didactic classes related to the topic;
- it is necessary to pay attention to the organization of excursions in physics and other factors.

Of course, such a description of types of labor organization independent of physics may give rise to certain discussions. However, regardless of their form and type, they must be aimed at achieving certain didactic goals and must be organized based on specific didactic requirements. The types of independent activities listed above can be carried out separately or in conjunction with each other.

For example, physical experiments can be carried out frontally. Such experiments are carried out in order to consolidate the learned material. It is important to increase the cognitive activity of students when organizing independent work in the classroom. Only if students understand the problem and are interested in the work that needs to be done will new knowledge be grasped with enthusiasm. When setting goals and objectives, it is necessary to take into account the desire of students to learn independently, to express themselves, to study.

If conditions are created to meet these needs in class and after school, students will begin to work with curiosity. Increasing interest in learning is a difficult task, and the effectiveness of students' daytime and extracurricular education depends on how this task is solved.

**They can be summarized according to the characteristics that form the basis for the classification of independent works.**

1. Based on didactic activities:

1.1. repetition of basic knowledge and preparation for learning new material; 1.2. learning new material; 1.3. systematization of knowledge; 1.4. Consolidating knowledge and skills by performing repetition exercises; 1.5. application of knowledge in a new situation; 1.6. verification and control of acquired knowledge.

2. Characteristics of students' educational activities:

2.1. in the form of a copy made according to the sample; 2.2. partially seeking character; 2.3. by the nature of the research.

3. According to the content of organizing students' independent work:

3.1. Frontal (general); 3.2. in group settings; 3.3. based on an individual-differential approach.

4. Source of knowledge and means of victory:

4.1. working with textbooks and educational materials; 4.2. drawing up a plan and lecture notes based on the extracted text; 4.3. making plans based on the studied material using on-screen tools; 4.4. working with handouts; 4.5. conduct physical experiments; 4.6. creation of models; 4.7. solve qualitative and computational problems orally and in writing; 4.8. writing physical dictations; 4.9. solving experimental problems; 4.10. execution of graphic works; 4.11. preparation of documents and abstracts; 4.12. performing independent test tasks; 4.13. computer study of materials on the topic; 4.14. using Internet resources when studying the topic; 4.15. working with physical puzzles and tasks; 4.16. participation in didactic houses on physics, etc.

In the process of physical education, regardless of the type and form of organization of students' independent activities, we believe that it is necessary to take into account the following requirements:

1. Encouraging students' enthusiasm for solving problems and research and forming educational goals based on this. 2. In the organization of students' cognitive activity: generalization of existing knowledge on a given problem: clarification (analysis) of knowledge that is relevant and necessary for a given problem; draw up a plan to solve the problem; organizing students' independent activities based on a plan; summarizing the results obtained. 3. In the field of psychology: make sure that students enjoy learning; arouse interest in independent work; achieve a feeling of satisfaction from the results obtained.

In conclusion, we can say that the possibilities of subjects studied in vocational schools in the formation and development of independent activity of students are different.

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## 2D O'LCHAMLI p-n-O'TISH VAX NING YORUG'LIK TO'LQIN UZUNLIGIGA BOG'LIQLIGI

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**Annotatsiya:** 2D o'lchamdagi p-n-o'tishli diodlar volt-amper xarakteristikasining yorug'lik to'lqin uzunligiga hamda yorug'lik quvvatining ortib borishi bilan teskari tok o'zgarishi nazariy jixatdan o'rganilgan va bu fotovoltaiik mexanizmga mos kelishi, xosil bo'lgan fototok teskari tokni