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PARTICIPATION OF STUDENTS AND PUPILS AT CREATING OF MEANS OF PHYSICAL AND MATHEMATICAL DISCIPLINES

At present time there is a problem of improving of organizing the scientific and research work in the system of training specialists-teachers in natural and technological fields. The development of information technology opens new perspectives for solving problems connected with creation of modern computer means of teaching of physical and mathematical and technological disciplines. Solving these problems is a necessary condition of successful modernization of professional education of future physics teachers.

The authors of this article connect these problems with each other and try to solve them together. About results of work in this direction there were reported in several publications. The main attention was paid to creation the computer study means. At the same time is solved another problem. It is a creative collaboration of students and pupils of secondary educational establishments.

The purpose of the article is to show on examples how future teachers together with senior pupils take part in creation of computer means of physics and mathematics teaching. It should be noted that in this activity of different age creative group are solved two problems. First, the skills of scientific-research work get not only students but also pupils. Secondly, future teachers gain experience of supervision, as in many cases they execute the definite function as for pupils of secondary school. Working together under supervision of university lecturer has a positive effect on the development of scientific independence as well as pupils and students.

Indeed, now pupils often begin master modern computer technologies without helping of teacher at the lessons of informatics and physics. This is not surprising, because modern electronic technics and informational technologies are important parts of their life. Spending a lot of time for activity which connected with products of new technologies, pupils get a great experience, which often exceed those that have in this field their parents and teachers. It also allows them to be for adults not only pupils but also colleagues in common work or even teachers.

Computer assistance for organization of students' independent work during study the topic "Mechanical vibrations." This computer means consists of a series of slides of two types. On the main slides there are necessary theoretical information and tasks for students. For additional slides there are answers to questions suggested on the main slides.

The article demonstrates with specific examples from experience how to simultaneously solve interconnected pedagogical problems. The creation of multimedia assistant in language of physical tasks can not be considered as complete. It should cover all sections of school of physics and contain the necessary amount of this task. In addition, using possibilities of computer isn't limited by static pictures. With its help, you can create animations and promote understanding the language of physical tasks.