

The Complementary Teaching of Physics and Music Acoustics - The Science of Sound

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Abstract. The results of some up-to-date solutions referring to teaching physics as a part of educational reform in Serbia, can be negative in a great deal to content and scope of teaching process which has existed so far. Basic course and characteristics of those solutions mean decreasing the number of classes of full-time physics teaching. Such tendencies are unjustified for many reasons, and the basic one is that physics is the foundation of understanding not only natural science, but also art and music (optics and acoustics respectively) and physical education (statics and dynamics). As a result of all this, there is necessity to have natural lessons of physics with the teachers of subjects such as music, art and physical education. The main objective of it is to conclude one good quality teaching cycle, and make student acquire new as well as revise their knowledge in different subjects.

Keywords: Physics Education, Complementary Teaching of Physics

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INTRODUCTION

In this elaborate we are going to present one of the ideas of this special complementary way to teaching subjects which only at first sight have nothing in common - physics and music.

REALISATION

This idea has been realized in Grammar School in Krusevac (Serbia) at February 2004. A typical class would be based on the method of active learning and consist of two parts. The first part would be held in the physics study and would involve learning and teaching unit from physics, acoustics - the science of sound. The second part would be held in the music study and would include revision of previously learned teaching unit from physics (acoustics) and at the same time would involve learning a teaching unit from music (analysis of sound in music). With this method, students would, with one completely new approach, in a very acceptable way acquire new and complete their knowledge from both subjects. This refers especially to those students who don't attend natural sciences course and for whom physics isn't a basic subject. In later work, during the educational process, in study could be used, where it would be possible to do simple

laboratory exercises in analyzing sound and characteristics of different musical instruments.

CONCLUSION

Results which were obtained after holding the classes of complementary teaching of physics and music education based on method of active teaching are very good and let us to recommend this form of work as one of the basic methods of learning and working on special teaching parts in modern way of education of students in primary and high schools. In that way would be succeeded in the basic goal of this kind of work, and that is completion of one quality teaching cycle, and foundation of their interest and work would be made out of physics with all of its possibilities and methods which are at their disposal. In this way students are forced in form of self-initiated thinking to expand knowledge gained like this onto other fields of their interest (economy, medicine, etc.)

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