The key teaching issues on mathematics and physics integration

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Abstract: The interdisciplinary integration is considered as one of the realistic aspects of teaching. It was described in a great number of scientific and educational researches. That's why this approach should be kept in mind as an alternative way.

The interdisciplinary integration has a long history. It was founded by Kamenski, Ushinski, Danilov, and Esipov. The psychological features of this field were illustrated by such scientists as Pavlov, Samarin, Sechenov, and Vygotski. The impact of integration on the teaching process was determined by Kabanova-Meller, Zverev, Fedorova, Kulagin, and Maksimova [1].

Many school teachers design their lesson plans of this combination and find it as a practical method of teaching. Mathematics and physics are related to the most difficult disciplines of secondary education. The handling of this unit has given beneficial results. In fact, through many experiments researchers (Usova, Multanovski, Kozhekina, Sinyakov, and Tazhmaganbetov [2]) expound on the merits of this link as a learning activity.

Nevertheless, there are some barriers for beneficial effect on proficiency in mathematics and physics integration. The following issues should be detailed:
1. Supplementary materials, binders, plans, handouts, programs for mathematics and physics integration are not made and they are not published.
2. The same notions have different explanations in both disciplines as: alternating-variable quantity, vector-vector quantity, multiplier-proportional multiplier, functional dependence, collinear vectors.

The purpose of our research is to offer practical activities for solving these challenges.

Keywords: Mathematics, physics, inter disciplinary integration, methodical bases.

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