SUMMARY OF NEW CONCLUSIONS OF PHD THESIS

Title: **DESIGN GEOMETRICAL PROBLEMS ASSOCIATED TO PRACTICE IN TEACHING GEOMETRY AT HIGH SCHOOL**
Speciality: Theory and method of teaching mathematics
Classification: 62 14 01 11
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New conclusions

Researching on many works published abroad, we found that, in a number of countries there have already been programs, projects and examinations, which connect Mathematics with life, such as the "Programme for International Student Assessment" or the "High School Mathematical Contest in Modeling" (HiMCM) in the past two decades. Therefore, in teaching Mathematics in general and Geometry in particular, it is necessary to enhance the ability to apply mathematical knowledge and skills to practice through solving the situations that arise in life: ability to establish mathematical model from supposed practice situations or real life situations.

We proposed five methods to design geometric problems associated with practice and use them in teaching geometry at high school as follows:

Method 1. Design the problem of geometric knowledge discovery based on teaching facilities made from simple materials in practice.

Method 2. Relating pure geometry problem to a practical situation to design problem associated with reality.

Method 3. Selection of practical problems which can be explained by common mathematical knowledge or solved by means of a mathematical model for designing problem system.

Method 4. Exploit the potential Geometric knowledge in real shapes, blocks and modern architecture to design mathematical problems or system of problems on Geometric comprehension.

Method 5. Based on figures, blocks or situations in practice, appropriate elements can be introduced to design problems to calculate the quantities of length, area, angle and volume of figures, blocks in Geometry program at high school.

Pedagogical experimental results at 6 high schools from different regions demonstrated somewhat feasibility and effectiveness of the proposed methods.

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