Sam: Dynamic Geometric Software to Optimize the Learning of Geometry and to Activate an Inventive Style of Thinking

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The Dynamic Geometric Software Sam was created by a small team from the Faculty of Mathematics and Informatics in the Plovdiv University "Paisii Hilendarski" and the software was set entirely for the need of the education on Synthetic Geometry [1], [2]. In the tools of the software was included infinite points and in the menu was introduced the unique function "Swap finite & infinite points" and vise verse. This new function for the dynamic geometry software optimizes the sketching work, because it preserves all the constructions; helps to generalize whole groups of problems and visualizes their solutions for the shortest time. The function "Swap" provokes and helps for the research and the inventive style of thinking; it facilitates the implementation of the vertical integration of the teaching in Geometry in the secondary schools and in the universities [3].

The possibility for a presentation of the solution, not only step by step with reading of the time, but also by stages with accompanying comments makes the dynamic sketches the best tool for self teaching. The stages and the comments are chosen and prepared by the teacher or in general by the user and can be changed due to the audience.

The educational software Sam allows the whole diversity of problems on the theme "Mutual intersection of prisms and pyramids in axonometry" to be presented by the teacher and learned by the students for the shortest possible time. The teacher and the student can construct fast and easy not only the standard problems, but also they can construct problems, which are missing in the known problem solving books and text books, with tangent points, tangent segments, tangent areas and their combinations with the help of the software Sam and the classification of the pierce points [4].

The software Sam provides a new approach in the teaching of Synthetic Geometry by replacing the old principle "learn and repeat" by the principle "learn and create".

References:

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