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Is Cabri 3D Effective for the Teaching of Special Planes in Analytic Geometry?

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ABSTRACT

This study aims to investigate the effects of teaching Analytical Geometry using the software Cabri 3D on teacher trainees' ability to write the equation of a given special plane, to identify the normal vector of the plane, to draw its graph and to write the equation of a plane presented graphically. The software was used in order to allow students to visually observe the geometric meanings of the variables on the plane equation and to improve students' geometric as well as algebraic comprehension. The research was conducted during the spring term of the 2008-2009 academic year with the participation of 78 students registered at Primary School Mathematics Education Department of a state university in Turkey. The experimental and control groups consisted of 26 and 52 students, respectively. The researcher ran the study, which took place over four lessons. Data collection tool was developed by the researcher and included 14 test items. Six questions tested the ability to write the equation of a given special plane, to identify the normal vector of this plane and to draw its graph. Eight questions asked students to identify the equations of the planes presented graphically. The results indicated that students in the experimental group were significantly more successful than the ones in the control group in terms of identifying the equations of the special planes and their normal vectors and drawing their graphs.

Keywords:
Cabri 3D, special plane, visualization

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