PRIMARY SCHOOL STUDENTS' PERCEPTIONS OF USING CAD IN TECHNICAL DRAWING INSTRUCTION

Darko Suman[1], Stjepan Kovačević[1], Damir Purković[2]

[1]University of Split, Faculty of Science, Ruđera Boškovića 33, 21 000 Split, Croatia,
darko.suman@skole.hr
[2]University of Rijeka, Faculty of Engineering, Vukovarska 58, 51 000 Rijeka, Croatia

ABSTRACT

Technical drawing is an integral part of general technology education and, consequently, of the Technical Culture curriculum in primary schools, with recommendations for the use of computer programs for drawing and three-dimensional modelling. This creates opportunities for the implementation of computer-aided design (CAD) in teaching. However, little is known about the extent to which CAD is used in primary schools and for what purposes. Therefore, this paper empirically examines the use of three-dimensional CAD software as a means through which students model and visualise technical creations, develop an understanding of spatial relationships, and connect a three-dimensional model with a technical drawing in regular classroom instruction. The research was conducted on a sample of 105 fifth- and seventh-grade primary school students who participated in the intervention. The aim was to examine students' perceptions of using CAD in teaching technical drawing with regard to content comprehensibility, self-perceived achievement, instructional interest, and the perceived advantages and difficulties of such an approach. The findings indicate that computer-aided design can contribute to the development and conceptualisation of a motivating and methodologically appropriate approach to learning technical drawing, thereby supporting the pedagogical justification and possibilities of applying CAD in the Technical Culture subject in primary schools.

Keywords: computer-aided design (CAD), technical drawing, technology education, primary school, student perceptions.