

# BUILDING DIGITAL COMPETENCES IN HIGH SCHOOL STEM EDUCATION: A COMPARATIVE ANALYSIS OF THE DIGCOMP 2.2 AND DIGCOMP 3.0 FRAMEWORKS

Nina Ignatova-Todorova, Todorka Glushkova

**Abstract.** *The article examines the process of development and change of students' digital competences in the context of STEM education at school. A comparative analysis is made between versions 2.2 and 3.0 of the European Digital Competence Framework (DigComp), emphasizing the multidisciplinary approach. Practical examples from robotics education, block programming and the use of artificial intelligence (AI) tools are presented.*

**Key words:** DigComp Frameworks, STEM education

## Acknowledgments

The research is supported by the project FP25-FMI-010 “Innovative interdisciplinary research in Informatics, Mathematics, and Pedagogy of Education” of the Scientific Fund of the Paisii Hilendarski University of Plovdiv, Bulgaria.

Nina Ignatova-Todorova<sup>1</sup>, Todorka Glushkova<sup>1,\*</sup>

<sup>1</sup> Paisii Hilendarski University of Plovdiv,

Faculty of Mathematics and Informatics,

236 Bulgaria Blvd., 4027 Plovdiv, Bulgaria

Corresponding author: [glushkova@uni-plovdiv.bg](mailto:glushkova@uni-plovdiv.bg)