

STUDENTS AND DIGITAL MATHEMATICS TEACHING¹

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Abstract: *Mathematics plays one of the most important roles in developments of our modern and technology-centered society. Additionally, it lays the basis for technical studies, but is also needed e.g. in economics and life science. In fact, good mathematical skills are crucial for science and economy. Unfortunately, various studies have shown that mathematical competence in Europe has weakened in recent decades. The lack of mathematical proficiency is already causing problems in engineering mathematics' and other courses in European HEIs. In fact, this seems to be a global problem, and e.g. the learning outcomes of Eastern European countries have been weaker than expected, especially in mathematics, after they moved to the Western European model of education (e.g. SEFI 2002). Compounding the issues, the resources allocated to teaching have been decreased so that there are fewer resources for teaching and the development of teaching.*

Additionally, in recent years the study groups have been increasing and becoming even more heterogeneous. This naturally causes problems for organization of mathematics' teaching as for example the entry level of competence in mathematics (RulesMath project study this problem) varies greatly depending on the background studies. Under these circumstances, taking into account individual needs or organizing dynamic and creative activities becomes almost impossible during the classroom sessions. As a sum of many factors, it has been reported that the drop-out rates are high in the field of technology.

In this paper, we will present the learning resources developed within the FutureMath project and how materials developed within this project are used by students in our universities and their positive influence in the process of teaching and learning mathematics.

Keywords: *Innovative Pedagogical Methods, Digitalization, Engineering Mathematics Education.*

REFERENCES

Drijvers, P. (2013). Digital technology in mathematics education: why it works (or doesn't). PNA, 8(1), 1-20.

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Goos, M. (2010). Using technology to support effective mathematics teaching and learning: What counts? Research Conference 2010, pp. 67-70, URL: https://research.acer.edu.au/cgi/viewcontent.cgi?article=1067&context=research_conference , (Accessed on 21.09.2018).

Rahman, A. (2012). Improving the Teaching of Engineering Mathematics using Action Research, ELSEVIER Procedia - Social and Behavioral Sciences, Vol. 56, Pages 483-493

Zwart, D. et al. (2017). The effects of digital learning material on students' mathematics learning in vocational education, Professional Education & Training Research Article, 10 p., URL: <https://www.tandfonline.com/doi/pdf/10.1080/2331186X.2017.1313581?needAccess=true> (Accessed on 25.09.2018).

<http://www.futuremath.eu/index.php/en/>