



# Implementation of Digital Technologies into Mathematics Teacher Preparation

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### Abstract

This paper presents a long study of Preservice arithmetic lecturers (PMTs) at the college of arithmetic, physics and information science, Jan Amos Komensky University in Pozsony (FMFI UK), that specialize in the implementation of digital technologies (DT) into the teaching of theoretical and sensible (or applied) subjects. We tend to conducted parallel analysis into 2 aspects, one on Calculus lessons as a theoretical subject, Another on the money arithmetic module as an applied subject. The implementation of DT additionally the) means this was measured varied from year to year and also within the methodology of implementation into the same subjects. The ways of implementation and therefore the results area unit in short represented, and a comparison of those 2 subjects within the PMTs' preparation is additionally mentioned.

**Keywords:** Preservice arithmetic teachers; Digital technology; Calculus; Money arithmetic

### Introduction

The implementation of digital technologies (DT) into the teaching and learning method of arithmetic started at the top of the twentieth century. The environments for dynamic pure mathematics, the pc pure mathematics system and graphic calculators were the most areas within which analysis was conducted. many researchers have got wind however DT might overcome the restrictions of paper and pencil. whereas others have targeted on the preparation of prospective arithmetic lecturers (PMTs).

The use of DT differs and might be helpful in several aspects. As declared, the teaching and learning method provides an surroundings within which DT could be a tool for communication, cooperation, or both. Ernst and Ryan explicit that “tools area unit the materials,

models and representations that students use to prepare and keep track of their thinking as they solve problems”. Cohen and Hollebrands explicit the importance of encouraging synchronous (for, e.g., blogs) and asynchronous (for, e.g., wikis) collaboration, communication and therefore the construction of information within the schoolroom. Jančárik and Novotná designed mathematical issues for higher secondary students wherever the pc pure mathematics system (CAS) may well be helpful in reaching the answer, by either modelling the answer numerically or by mistreatment the machine power of computers. Hoyles and Lagrange mentioned. However way studies have taken on board the challenges of the employment of digital technologies and their potential for the development of arithmetic teaching, learning and therefore the info, remains a matter of debate”.

Gruson et al. once examination 2 case studies—English and arithmetic teachers—observed important use of digital resources in each cases, however of a unique nature. In our study we tend to compare 2 cases also, the teaching and learning method in Theoretical as well as mathematics.

In our own analysis, the place was the employment of modelling and visualisation processes in several digital environments. Following a review of the relevant literature and therefore the impact of the Covid-19 pandemic, there's little doubt that additional analysis during this space is crucial, a notion confirmed.

We can determine 2 main threads within the analysis regarding the implementation of DT in arithmetic education at the university level. Firstly, analysis targeted on theoretical arithmetic (such as Calculus, Algebra, etc.). In our analysis we've got targeted on Calculus thanks to our skilled interest. Secondly, analysis targeted on mathematics (such as money arithmetic, Management, Economy, etc). thanks to the tutorial reforms in Slovak Republic in 2008, we tend to targeted on money arithmetic since it's become AN integral a part of arithmetic education in Slovak Republic, beginning at lower lyceum. because the analysis we tend to conducted lined 2 distinct strands, the text is union as follows: first, the strand regarding Calculus and, secondly, the strand regarding money arithmetic (FM). Our study aims to check totally different approaches in implementing DT into the same styles of arithmetic lessons. we'll in short review the ends up in each areas— Calculus and money arithmetic.

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