COMPUTER ALGEBRA SYSTEM

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Abstract

This paper addresses the common and different elements of two environments, such as: paper and pencil environment and computer algebra environment. The aim is to pull out the difference between pupils' mathematical thinking and the way they act (during solving equations) while pupils are solving equations using paper and pencil and, on the other side while they are solving equations in an algebra computer environment (mathematics software, such as: aplusix). The research question of this study is: How the use of computer algebra system (aplusix) interacts with the paper and pencil skills (technique) and the conceptual understanding of pupils (theory). The triad Task-Technique- Theory (TTT), which is based on Chevallard's anthropological theory, serves as the framework of this study's three methodologically considerations: designing the tasks, gathering the data during teaching activities, and analyzing that data. The context of this study is one tenth class, and the teaching activities on equality and equation are described. These teaching experiments are based on two environments: paper-and-pencil technique and computer algebra system, andfindings indicate the importance of the co-emergence of theory and technique. Further extension of this study would be how pupils' knowledge and computer systems effects to each other.

Keywords**:** *computer algebra, task, technique, technology, theoretical thinking in algebra.*