

ZMATH 2015e.00737

Lagrange, Jean-Baptiste

A functional perspective on the teaching of algebra: current challenges and the contribution of technology.

Int. J. Technol. Math. Educ. 21, No. 1, 3-10 (2014).

Summary: From the early nineties, most reformed curricula at upper secondary level choose to give functions a major position and a priority over rational expressions and equations of traditional algebra. The goal of this paper is to introduce key challenges resulting from this choice and to discuss the contribution that software environments associating dynamic geometry and algebra can bring to the teaching learning of functions. Two examples of situations based on the use of the Casyopée environment are proposed. They illustrate how educational design can handle key questions: experiencing co-variation and using references to bodily activity is crucial for students' understanding of functions, making sense of the independent variable is a major difficulty that needs to be addressed by special situations, and understanding the structure of the algebraic formula in a function is critical.

Classification: I23 I24 U73 U74 M53 M54

Keywords: algebra; use of technology; mathematical concepts; functions; dynamic geometry software; modeling; symbolism

<http://www.researchinformation.co.uk/timearch/2014-01/pageflip.html>