

A Concept Map of Determinants as a Foundation for Design Research in a Dynamic Geometry Environment

Ana Donevska Todorova

Humboldt-Universität zu Berlin, Institut für Mathematik,

Rudower Chaussee 25, 12489 Berlin, Room 1.008

todorova@math.hu-berlin.de

<http://www.math.hu-berlin.de/~todorova>

Abstract

This article reports on a creation of a concept map about determinants which are used as a 'rich medium' for connecting internal and external concepts in linear algebra and analytic geometry at the upper secondary education. It discusses on multiple representations of determinants and conceptual changes from determinants being treated as real numbers at the upper secondary level to the determinants representing functions of squared matrices at the university level. The concept map serves as a framework upon a research design has been undertaken in a Dynamic Geometry Environment.