

CAN GEOGEBRA MAKE EASIER THE UNDERSTANDING OF CARTESIAN CO-ORDINATES? A QUANTITATIVE STUDY IN TURKEY

Prof. Dr. Sevinç GÜLSEÇEN
Res. Assist. Elif Kartal KARATAŞ
Res. Assist. Fatma Önay KOÇOĞLU
Istanbul University Informatics Department
Istanbul-TURKEY

ABSTRACT

A complex number z is a number of the form $a + bi$ where a and b are real numbers. A complex number z in complex plane can be represented by Cartesian co-ordinates, its real and imaginary parts, but equally useful is the representation of z by polar co-ordinates. Generally, students cannot easily visualize them by Cartesian co-ordinates and that makes the subject difficult to be understood for them. The aim of this study is to evaluate quantitatively and qualitatively the students' opinions about GeoGebra and to contribute to Turkish GeoGebra Library. First we have translated "Polar Grapher" (created by Jerel L. Welker) into Turkish and developed a new worksheet with GeoGebra about "Visualizing Complex Numbers on Cartesian Co-ordinates". After presenting material to 4th grade students from high schools located in Istanbul and Sakarya cities (Turkey) respectively, a questionnaire has been conducted. The data collected through questionnaires have been analyzed and the views of students and their teacher's on the use of GeoGebra have been reported.

Key Words: Geogebra, cartesian co-ordinates, Turkey.