

Using GeoGebra for Enhanced Visualization of Economic Functions

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Abstract. For years, GeoGebra has been established as a powerful tool for learning topics related to functions. Numerous studies have proposed the implementation of calculus teaching using GeoGebra effectively, along with the effects of such teaching on students' achievements and motivation. Over the years, we have observed that students enrolled in the Introduction to Financial Mathematics course fail to recognize the connection between the properties of real functions they explored during their previous mathematical education and the concepts of economic functions, where significant number of problems are solved using the appropriate properties of linear, quadratic, and other polynomial functions. In line with this observation, a methodological approach was devised based on the use of the GeoGebra software package for visualizing economic functions, aiming to help students apply their previously acquired mathematical knowledge more successfully and efficiently in solving specific problems related to economic functions. Research results indicate that students have made noticeable progress in applying knowledge related to determining zeros, signs, monotonicity, extreme values of functions, etc., in the context of solving concrete problems related to economic functions. In this way, students have not only reinforced their existing knowledge but have also become proficient in interpreting it in the given context.

Keywords: GeoGebra; visualization; economic functions; properties of a function.

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