

# Support algorithmic learning with GeoGebra tools

*Ferdianova Vera*

Department of mathematics, Faculty of Science, University of Ostrava, Ostrava, Czech republic

## *Abstract*

Digital competence is a topic that resonates throughout education and is currently being emphasised. One of its goals is the increased implementation of informatics in education. Thus, it is not only about computing subjects, but the use of digital competence as a cross-curricular theme across all subjects (NPI, 2021).

The teaching of mathematics directly lends itself to the use of IT in the teaching of geometry or statistics through the various use of quizzes, other interactive materials or detailed instructional videos. In mathematics, GeoGebra software is widely used not only for teaching geometry, but also as an excellent visualization and logic tool across all mathematical areas. GeoGebra allows for the creation of custom tools that work on the principle of a compiled algorithm and are primarily used in the context of solving design problems.

The aim of this paper is to show how this tool can be used as a motivator of algorithmic thinking for students and also to present it as a useful tool in the creation of interactive materials in the teaching of planimetry. The paper will also introduce parts of planimetric geometry that can be algorithmized to create a new tool within the GeoGebra software. The second part has already been implemented within the master thesis of our student Marek Bukovsky (2023), who created tools that were subsequently used within the solution of planimetric design problems.

## *References*

- Národní pedagogický institut, Digitální kompetence, 2021. <https://archiv-nuv.npi.cz/p-kap/rozvoj-ict-kompetenci.html> Bukovský, Marek, Diplomová práce Ostravská univerzita 2023.

## *Keywords*

Digital competence, algorithm, GeoGebra, planimetry