Application of Van Hiele's theory with dynamic geometry to improve geometrical competences

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Abstract: Based on research conducted with first year Spanish Baccalaureate students, it has been found that there are weaknesses in the cognitive development related to geometry. In order to address this issue and improve the acquisition of geometric thinking skills, as well as students' perception of geometry in terms of usefulness, motivation and confidence, an instructional design is proposed.
This intervention is rooted in Van Hiele's theory of levels of thinking, and accordingly, the activities are structured based on his didactic model. To make the learning process more engaging for the students and to provide practical applications, the intervention proposes the use of BlocksCAD, a 3D modeling software. This software not only attracts students' interest, but also facilitates the development of other mathematically relevant competencies, such as computational thinking, which are highly valued in the curriculum.

References

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