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Virtual Reality technologies in Geography education – Research result and experiences

The role of virtual reality (VR) in primary and secondary education is not increasing to the extent that the level of technology development would predestinate – despite the assumption that it could take on significant tasks in educational processes with appropriate preparation. An important step in researching the possibilities of VR use is to map the most important published research data. We prepared a systematic review to systematize the important positive and negative experiences and research results of VR technologies in geography education, for which we selected the publications based on appropriate methodological principles: we sorted out and processed 47 works that are closely related to geography education. We analyzed their bibliographic data as well as their characteristics, such as their research objectives, demographic, gender and social background, hardware and software specifications, advantages and disadvantages, conclusions, and predictions. Our goal is to find the main reasons for the marginalization of VR in teaching geography, based on which we can also get closer to finding possible solutions for its introduction. In this presentation, we focus on hardware and software usage and provide an overview of the main and most important results of the systematic review from the perspective of VR devices and technologies. We present the positive and negative experiences of using VR and the results of our analysis. We also show examples of how we introduced students to the use of VR and some possibilities of applying VR environments in education in university teacher training, first in the field of developing environmental awareness and then in geography education. Finally, we mention some positive and negative features of disruptive technologies.

Keywords: virtual reality; geography education; education; teacher training; educational technology; MaxWhere;

Biography

Dr. Bujdosó studied in Hungary and France and has master's degrees as a computer scientist, computer science, mathematics and chemistry teacher. She currently teaches computer science and mathematics at UD in Hungary. She conducts research in the field of human-computer interaction using eye-tracker devices and virtual reality platforms, and examines the introduction of new technologies in primary, secondary and higher education: her current research focuses on the digitalization of geography education and the possibilities of motivating primary school students in the natural sciences.

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