

VR in Advanced GIS for Geoscientists evaluation summary

Context and intervention

The elective course Advanced GIS for Geoscientists at the Earth Sciences Master's degree programme (Geosciences, block 1, 2017-2018) supported students studying river elevation models with VR using the SteamVR Home application. The students were separated into two groups. Both groups reviewed the same data. Group 1 saw it in 2D first, then in VR. Group 2 saw it in VR first, then in 2D.

(presumptive) Mechanism

The purpose of using VR was to give students a better understanding of what terrain looks like and to motivate them to study the terrain in greater detail. Additionally, VR can provide students working with GIS with a sense of what's possible with GIS data.

Results

A survey (N=18 student pairs) revealed that all students experienced the use of VR as positive. Students in the VR-2D group were more enthusiastic about using VR than the students who saw 2D first, then VR. Supplementary student interviews (N=5) showed that students were mostly positive about their experiences with VR. Helpful aspects listed in the interviews included the link between the data and photographic information, the ability to better judge differences in elevation and the ability to better remember terrain features, especially for hard-to-reach locations and in preparation for fieldwork.

Standout results

- The belief that, compared to 2D, VR leads to a better understanding and overview of the terrain is not shared by all students.
- The order in which VR is offered (before or after 2D) can affect student motivation.
- Students indicated in interviews that VR added value mostly in the context of education, and less so when it comes to research.

Important footnotes

- This evaluation relied on self-reporting, so there are no guarantees that students actually understood the materials better thanks to VR.
- Relatively few students took part in the evaluation.
- Students listed numerous aspects of SteamVR Home that could be improved upon and that may have influenced the applications usability.