

AuCity 2

Using Augmented Reality at university.

A BMBF-funded joint project of the Bauhaus University of Weimar and the University of Ulm.

Students of civil engineering face the significant challenge of finding the relationship between complex formulas and concepts and their manifestations in the real world. It is our goal to facilitate these students with the application of such difficult, theoretical content in real life situations by creating an app using MR-Technology (“Mixed Reality”).

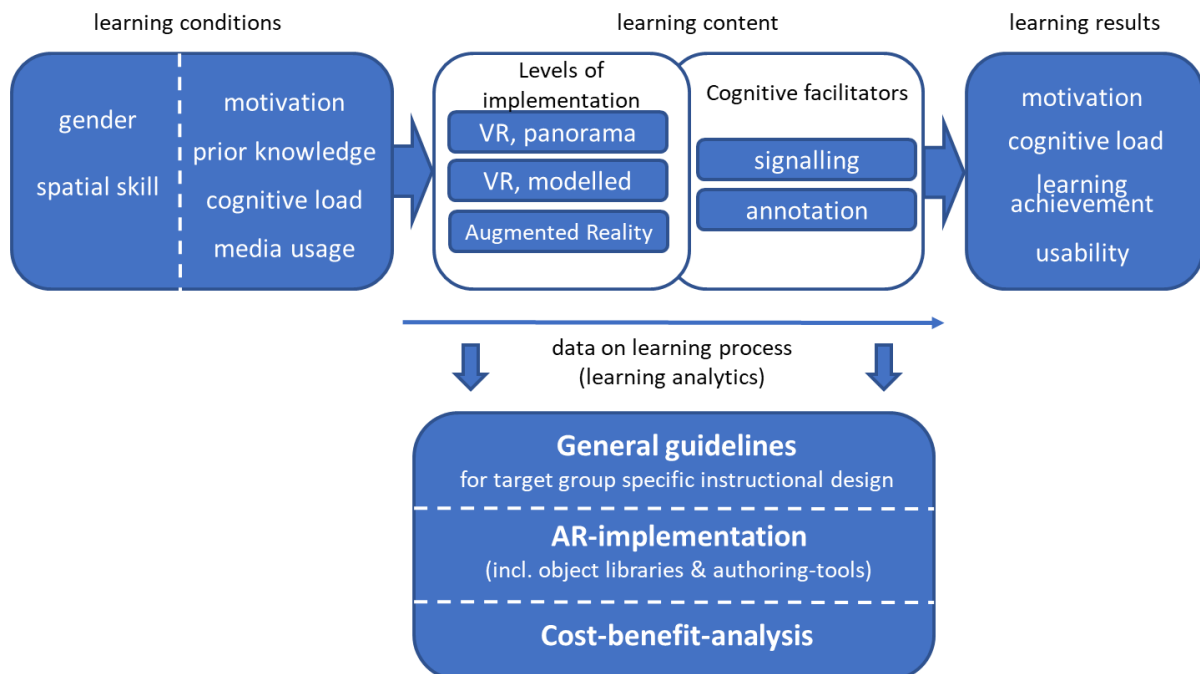
Studies have shown that the use of such technology for educational purposes can increase student’s motivation to learn (Akçayır, M., Akçayır, G., 2017).

One of our app’s strong points will be that it combines various forms of representation, making it easier for the user to create a complete mental model of the concepts explained in the app.

There will be different levels of MR-implementation:

- Panoramic view (e.g. Google Streetview)
- Virtual Reality (e.g. Oculus Rift)
- Augmented Reality (e.g. Pokemon Go)

Through empirical research we will investigate important aspects of the design and implementation of the app, as well as how it can be adopted into the learning curriculum. Our main focus will lie on learning outcome, motivation, usability and cognitive load.



At the same time, we will collect data on the learning process. These should serve as a general guide for an effective, target group specific employment of MR-technology in an educational environment in the future. We will set up authoring-tools and object libraries meant to be applicable in as many different educational settings as possible.

The AuCity 2 project team is made up of three main areas:

- **Environmental Engineering and Technical Design** (educational content)
- **Instructional Design, Teaching and Learning Research** (conceptual and didactic input, as well as evaluation)
- **Visual Computing and Human-Computer-Interaction** (group specific implementation of the content)

Project partners

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Akçayır, M., & Akçayır, G. (2017). Advantages and challenges associated with augmented reality for education: A systematic review of the literature. *Educational Research Review*, 20, 1-11.