

## Chapter 8

# There Is Nothing to See. Or Is There?

## Visualizing Language Through Augmented Reality

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### **ABSTRACT**

*Augmented Reality has the potential of transforming teaching. By applying this technology themselves, students progress from consumers of technology to producers of their own digital content, and they can make it available to a large audience and create an immersive learning experience. After a language trip to Scotland, teachers and two classes of 17-year-old students from a school in Salzburg, Austria, decided to present the outcome of their project work from their stay abroad in a more interactive and innovative way. Instead of inviting parents and friends to an evening of PowerPoint, the students designed AR posters and visitors were invited to an interactive gallery walk during which they had the chance to explore thematic posters related to Scotland. While at first glance the posters seem rather bland, digital content, which the students produced, opens up by scanning the pictures on the poster with a special AR app. This project successfully combines language and digital skills and has shown to motivate students to engage even deeper with their topic.*

### **INTRODUCTION**

There is a long tradition in research on how to integrate and/or use technology for teaching and learning. Nowadays the debate is more current than ever due to the constant availability of multimedia learning opportunities via smartphone and the Internet. Recent studies show that almost all young people are in possession of a mobile phone, have access to the world wide web and use online-platforms' like

DOI: 10.4018/978-1-7998-1097-1.ch008

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YouTube for self-organized learning activities (European Union, 2017; Ikrath & Speckmayr, 2016; Medienpädagogischer Forschungsverbund Südwest (mpfs), 2017; Rat für Kulturelle Bildung, 2019). So, for students, the use of technology has already become part of their everyday lives. At school or university, this awareness is usually still lacking. Although numerous meta-analyses have repeatedly confirmed that the use of computer technologies can lead to learning success, satisfaction and increased motivation taking into account pedagogical and didactic requirements, their use is the exception rather than the rule (Bangert-Drowns, Kulik, & Kulik, 1985; Fazal, 1996; Hattie, 2008; Kulik & Kulik, 1991). This is also because digital media are mostly understood as pure instructional media. The potential for creativity, communication or collaboration then falls short (*Partnership for 21. Century Learning*, 2015). A relatively new approach is that of digital skills, i.e. those skills that young people need to grow up in the increasingly digital world. Here, learning is no longer only with media, but also about media. If several perspectives such as technological, social and application perspectives are taken into account, young people can mature from mere consumers of digital media content to critically-reflected personalities. One way to promote this is to let learners slip into the role of designers of their own media products (EU Science Hub, 2018; European Union, 2018; Gesellschaft für Informatik, 2016). In the literature this approach is referred to as *Learning by Design* or design-based learning. This teaching method is strongly oriented towards problem-based learning or approaches to research-based learning (Kolodner, Camp, et al., 2003). Initially applied strongly in science teaching, today there are also many studies on learning by design in the field of foreign language teaching. The Erasmus+ project PALM (Promoting Authentic Language Acquisition in Multilingual Contexts, (Mewald & Wallner, 2018)) is particularly worth mentioning here. As part of this project, children, teenagers and teachers from eight different countries created digital learning materials for the respective first languages, but also for the languages to be learned at school. The main focus was on texts, videos and quizzes, which can now be accessed via a homepage. The aspect of authentic learning and language use deserves special mention here. Thus, no artificial situations were created, instead authentic situations of language use were used for the design process. (Bajner, 2018; Mewald & Wallner, 2018; Mewald, Wallner, & Buchner, 2018). Authenticity and the feeling of working on relevant tasks with the help of learning by design are only two of the advantages of this approach which are also repeatedly mentioned in literature (Kearney & Schuck, 2006; Schuck & Kearny, 2006).

Most of the implementations of learning by design concentrate on the production of videos, texts, images and, in rare cases, digital games. In this chapter we would like to present a project that, using a relatively new technology, enabled learners to produce linguistic artifacts: Augmented Reality.

First, we will provide an overview of the research results of learning by design implications, including existing projects with augmented reality. The next section presents the AR Scotland project in detail. The curriculum, competences to be acquired and the learning by design process are described. Subsequently, we present results from the accompanying research of this learning experience, the focus is on the motivation of the learners as well as the acceptance of Augmented Reality as (learning) technology. The outlook on open research questions and a conclusion will complete this chapter.

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