

ABSTRACT

This diploma thesis deals with the use of elements of augmented reality in the teaching of chemistry at lower secondary school. We chose to use augmented reality in teaching because of the constant development of digital technologies and the effort to involve them more in education. In the theoretical part, we deal with the phenomenon of augmented reality and its use in education. We present several augmented reality applications that can be used in the teaching of chemistry, of which we focus more closely on the VividBooks applications, with which we work in the practical part. Furthermore, the theoretical part presents the topics of chemistry teaching in the framework educational programmes for lower secondary education (RVP ZV) and in the school educational programme (ŠVP) of the Velvary Elementary School, in which the AR VividBooks application was used and examined. We also describe the principles of the case study, which we used as a research method in the practical part. In the practical part, we started implementing a case study with introductory interviews with pupils and teaching assistants of the eighth grade of Velvary Elementary school. This was followed by six lessons using AR VividBooks applications in all three classes, during which we described the activity and reactions of the pupils. At the end, we conducted exit interviews with pupils and teaching assistants. In conclusion, based on the evaluation during the lesson and comparing the input and output interviews with the students and with the teacher's assistants, we identified the use of augmented reality elements in the VividBooks applications as beneficial. The animation used by the students interested them, caught their attention and in most cases helped them to better understand the issues of more difficult concepts and phenomena from the area of the micro world, such as the atom, the formation of ions or the formation of chemical bonds.

KEYWORDS

Augmented reality, Chemistry Education at Lower Secondary School, VividBooks, Web application, Motivation in Education