ABSTRACT

Escape games have experienced tremendous growth in the market for action group entertainment in recent years and show potential for educational use as well. The bachelor's thesis focuses on designing two didactic escape games as an innovative tool to revitalize the teaching of chemical calculations in high schools. The research section of the thesis introduces issues related to student motivation to learn, the history, and current use of games in education with an emphasis on escape games and their potential in teaching chemistry and chemical calculations. The thesis also provides an analysis of the curriculum related to chemical calculations in the educational programs of four selected high schools, which revealed considerable diversity and range of treatment of the topic of chemical calculations.

The practical part of the thesis is dedicated to the design and evaluation of escape games "Night Escape from Hogwarts" and "Robotic Apocalypse". The goal of these games is not only to practice chemical calculations, which many students find challenging and difficult to understand, but also to increase their motivation to learn chemistry. The games were pilot tested by a group of high school students and evaluated by high school chemistry teachers, who provided feedback on their anticipated effectiveness, attractiveness, and potential use in teaching.

The results show that according to teacher evaluations and initial student experiences, escape games can significantly contribute to active student engagement in learning, the development of key competencies, improved understanding of chemical calculations, and increased student interest in chemistry.

KEYWORDS

Escape games; chemistry education in high school; chemical calculations; learning motivation