UNIVERSITI TEKNOLOGI MARA

ELEMENTAL ESCAPE - IMPLEMENTING GAME-BASED LEARNING FOR LEARNING PERIODIC TABLE WITH LABYRINTH GENRE

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ABSTRACT

Chemistry is a branch of science that deals with the properties, composition, structure, and transformation of matter. Nowadays chemistry game seems to flourish with the increase of its usage in the classroom. With the advancement of technological system, game-based learning (GBL) creates more engagement to the topic being learned. It makes a challenging topic such as periodic table of elements more fun to learn. As a foundation of chemistry, periodic table is the most importance references that students need to master. However, students always think the topic is hard to memorize, the way of learning it is not interactive and they cannot visualize the phenomena of the periodic table. In this project, we will be exploring the usability of game-based learning for learning periodic table based on form four Malaysian secondary syllabus. To exemplify this concept, a game prototype named 'Elemental Escape' is designed and developed. This project adheres to the Game Development Life Cycle (GDLC) method for game development which involves six phases: initiation, pre-production, production, testing, beta and release. The game usability in the educational setting will be tested and evaluated using the System Usability Scale (SUS) through a questionnaire given to the children. The game scored 86 percent on the SUS evaluation thus proving that the game prototype is acceptable to be used in classroom setting. In conclusion, this endeavor underscores the potential of GBL as an effective platform for bolstering knowledge acquisition through edutainment strategies, a departure from traditional teaching methodologies. By catering to the digital age and leveraging interactive elements, GBL emerges as an engaging approach to enhance learning experiences in the realm of chemistry education.

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