

Testing chemical tasks on the LMS Moodle platform

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Abstract

Currently, the level of students' motivation to learn is decreasing. We decided to solve this situation by choosing suitable methods that make student active (Lathwesen, C., & Belova, N., 2021) and influence the results of his learning through immediate feedback (Buckley, P., & Doyle, E., 2016). An online interdisciplinary escape game with a current story about the energy crisis was prepared in the LMS Moodle.

The paper compares the results of the pilot verification of chemistry tasks, which are part of the escape game. LMS Moodle contains an escape game and libraries, which include concept maps, texts, images and videos. Thematically focused tasks from three rooms were verified by a research sample of 16 teachers. The first room is focused on mixtures and their division, the second is focused on the laboratory and the third one on laws. The assessment tool was an online test in LMS Moodle and a Google Form questionnaire.

A total of 22 problems from chemistry were verified, of which are 7 cloze tasks, 6 matching tasks, 6 true-false tasks or multiple-choice tasks and 3 problem-solving. The teachers predicted the difficulty of the tasks for the students in the questionnaire. The teachers mentioned as the most difficult numerical tasks for matching or completing the correct result in the assignment and tasks focused on reading comprehension, for example, deciding on the truth of statements or completing concepts. The teachers cited research tasks as the most interesting, which connect theoretical interdisciplinary knowledge with practical verification, with the overlap of calculation into everyday life and the explanation of observed phenomena. The teachers rated the tasks as varied, interesting and appropriate to the students' knowledge and age.

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References

- Lathwesen, C., & Belova, N. (2021). Escape rooms in STEM teaching and Learning— Prospective field or declining trend? A literature review. *Education Sciences*, 11(6), 308.
- Buckley, P., & Doyle, E. (2016). Gamification and student motivation. *Interactive learning environments*, 24(6), 1162-1175.

Keywords

escape game; chemistry; LMS Moodle; motivational tasks