

STEM education and education for sustainable development through the the escape game coally stone

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Abstract

Unlike many other educational strategies in recent years, there are two concepts that, instead of trying to add more goals and educational content, are based on the idea of not adding new things, but on the contrary – working with existing content and goals, and linking them to each other and with real life – STEM education and education for sustainable development (ESD). This makes it possible to upgrade education from purely formal, relayed in school, to informal education, gives a room to mutual cooperation between students and the involvement of the wider school environment. We will present the implementation the goals and objectives of STEM education and ESD in the one-year eduLARP escape game called Coal stone (Václavíková, Maršálek, & Trčková, 2022; Maršálek, Trčková, & Václavíková, 2022). The game is focus on the students of a lower secondary school (ISCED2) or secondary school (ISCED3) and combine the chemistry within multidisciplinary links to physics, mathematics, and biology. The main element that permeates the entire game is carbon, its forms and its role in energy. During one school year, the player gradually goes through 10 escape rooms, in which he/she learns about chemical, physical and biological laws through the use of his mathematical knowledge, he/she has to think and discuss about and the real problems of energetic crises. It investigates the real possibilities of energy sources, and mainly from the data obtained in its surroundings he/she has to try to find a balance between the possibilities offered and the reduction of his/her own energy demands (or in general demands of the population). At the same time, the student is forced to independently collect data about himself/herself and his/her surroundings, process them, evaluate them and suggest the solutions. Through this data, we force the student to think about his attitude and behaviour in constant comparison with data describing the behaviour and attitude of the entire population.

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References

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Keywords

eduLARP game; STEM education; education for Sustainable Development; carbon; energy