

First experimentation of higher educational tools for an embodied and creative education on energy

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The Erasmus+ Project “e⁴ – higher Educational tools for an Embodied & creative Education on Energy” (Project number: 2021-1-IT02-KA220-HED-000032259), coordinated by UNIBZ, aims, among other objectives, at developing contents related to energy for higher education of teacher at primary and lower secondary levels, following a didactic approach based on imaginative forms of expression like storytelling, gamification, embodied simulation, digital simulation, and play. The project is inspired to the Kieran Egan’s theory of recapitulation of cultural phases (Egan, 1997) and on an imaginative (fundamentally metaphoric and narrative) approach to the teaching of physical science (Corni & Fuchs, 2020). The e⁴ materials will be available on a dedicated website. In particular, the website will provide a Module 0 of general introduction, addressed to the instructors, to learn the fundamentals of the project and to familiarize with imaginative forms of expression, and three Modules on i) energy in biology, ii) energy in transports, and iii) renewable energy sources, offering contents of use of the instructors with their trainees. A gamification tool is based on the Lego® Serious Play® format that uses Lego bricks and some additional pieces to engage trainees in an imaginative way in the representation of Forces of Nature and Stories whose characters are these Forces. Object of the paper, beside the detailed description of the e⁴ project, is the discussion of the results of some gamification activities performed with groups of student teachers of the faculty of education of the Free University of Bozen-Bolzano.

References Corni, F., & Fuchs, H. U. (2020). Primary Physical Science for Student Teachers at Kindergarten and Primary School Levels: Part I - Foundations of an Imaginative Approach to Physical Science. *Interchange*, 51(3), 315–343. Egan, K. (1997). *The Educated Mind. How Cognitive Tools Shape Our Understanding*. The University of Chicago Press. <http://ebookcentral.proquest.com/lib/unibz/detail.action?docID=408518>.

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