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Creative learning through collaborative online international platforms and use of case studies to address sustainability problems

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In the fast-changing era when new trends at high-speed impact society and future jobs, humans continue to evolve through the learning process by developing innovative mechanisms to improve education, that holds the power to transform and enrich the quality of life in modern society (Chkoniya, Gonçalves, & Batista, 2021; Nobre, Kumar, Kastanakis, & Paul, 2023). The challenge for educators is to design programs capable of fostering a range of competencies fit for wicked sustainability problems (Davidson, Prahalad, & Harwood, 2021; Tejada-Gutiérrez, Koloszko-Chomentowska, Fiore, & Spada, 2023; Zbieć, Franc-Dąbrowska, & Drejerska, 2022). To succeed in modern-age jobs, students need to solve problems creatively, work in teams, communicate on social media, learn to use new technologies and deal with a big amount of data. Critical thinking, communication, collaboration, and creativity are the top four 21st century competencies that students should acquire for three primary reasons: (a) these skills are difficult to teach and assess, thus they are seldom included in the curriculum; (b) these skills are essential for all students in the era of globalization; and (c) these skills are essential for any career (Kousloglou, Petridou, Molohidis, & Hatzikraniotis, 2023; Okrostsvardze & Bzhalava, 2020; Touzard, Noriega, & Rugel, 2023). How research and scholarship are co-produced, co-performed, and proclaimed as particular kinds of knowledge and truths in and beyond the academy is radically changing (Burnard, Mackinlay, Rousell, & Dragovic, 2022). Project Based Learning is an essential practice that empowers students and builds these skills (Baird, 2019). And through learning experience platforms, participants in the learning process can identify specific skills or knowledge gaps by accessing an analysis of their teaching-learning activities and using suggestions for action to improve their achievement (Melnikova, Batuchina, Zascerinska, & Ahrens, 2023).

This paper presents empirical information on the benefits of online international platforms and case studies used in the education process, highlighting challenges for their effectiveness using an international collaboration project entitled "Sustainability – Best Practices from Georgia and Portugal". This project was a joint initiative of the University of Aveiro (Portugal), Ilia State University, and Ivane Javakhishvili State University (Georgia) mediated by an online environment through the Columbus Hub Academy platform with the involvement of i4efficiency (Intelligent

integration identifier and logistics efficiency project financed by EEA Grants). This paper focuses on exploring the relationship between Collaborative Online International Learning (COIL) atmosphere with the case study hands-on methodology and Higher Education Institutions (HEIs) students' modern world sustainability problems solving capacities, aiming to provide suggestions for cultivating students' creativity, critical thinking, communication, and collaboration in an online environment. This study is based on a literature review and survey conducted with students who participated in the project. The main conclusions drawn from the study are as follows: 1) a more creative collaborative atmosphere can help to effectively develop sustainability problems solving capacities, and 2) the impact of a creative environment on students' sustainable behavior is not always immediate and may have a delayed effect, and 3) creative learning in international environment blooms students' 21st century competencies.

Research findings have pedagogical value for designing creative learning for boosting bio-economy within HEIs curricula.

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