

## **CHALLENGE-BASED LEARNING: WAY TO FIND ANSWERS TO THE UNCERTAINTY OF SUSTAINABLE ECONOMIC DEVELOPMENT**

Asta Daunorienė, Kaunas University of Technology, Lithuania  
Eglė Staniškienė, Kaunas University of Technology, Lithuania  
Živilė Stankevičiūtė, Kaunas University of Technology, Lithuania  
Jurgita Barynienė, Kaunas University of Technology, Lithuania

**Conference Key Areas:** Co-creative and transformative learning environments

**Format:** Action atelier (90 minutes)

**Keywords:** Challenge-based learning, sustainable economic development, flexible education, cooperative learning, European university, changing role of teachers

### **ABSTRACT**

Sustainable economic development is the dominant issue for world development. However, today we have to announce that the world has changed and the ability to predict opportunistic sustainable economic growth has become a huge challenge. As early as 1992, researchers Dovers and Handmer argued that global environmental change and human sustainability are associated with challenges in managing change in dynamic systems of uncertainty. Ezbakhe and Pérez-Foguet (2020) argue that uncertainty persists in all decision-making environments today and that making decisions with incomplete and unclear information still remains a challenge. 2030 The Sustainable Development Agenda (Colglazier, 2015) emphasizes the importance of the integration of all three dimensions of sustainable development, economic, social and environmental. However, integrating multiple dimensions, links between sectors and actors, and uncertainties is not an easy task (Stafford-Smith et al., 2017).

Higher education has an important role to play in helping future generations acquire the competencies needed to meet the challenges of sustainable economic development under conditions of uncertainty. Challenge-based learning is a didactic methodology that can help students develop the skills to address the challenges of sustainable economic development in a context of uncertainty. At the same time challenge-based learning brings together students, teachers, and stakeholders to face uncertain challenges and to create a solution that is economically, environmentally, and socially sustainable (Kohn Radberg et al., 2020).

The purpose of this workshop is to experience challenge-based learning by solving uncertain challenges in sustainable economic development. During the short round of challenge-based learning, participants will be acquainted with challenge-based methodology and will discuss how different challenge-based learning phases could help students develop the skills required to solve uncertain sustainable economic development challenges. The workshop is organized for the participants who do not have or have some prior knowledge on challenge-based learning.

During the workshop, participants will be divided into small groups and will be asked to choose the challenge. They will be led through the challenge-based learning process. At the end of the workshop, participants will be invited to share the results and discuss how do they perceive the challenge-based learning methodology in order to help students gain competences to solve uncertain challenges of sustainable economic development.

The challenge-based learning process allows the student to experiment, make mistakes, and create new and innovative solutions. The challenge-based learning will allow students not only to find the best solution through trials and errors, but also at the same time, to integrate different stakeholders' experiences, to act in an uncertain environment, and to take a responsibility for the impact of the decision on sustainable development.

### **ACKNOWLEDGEMENTS**

This Action atelier is supported The European Union programme Erasmus+ Project ECIU University funding. Project no.: 612521-EPP-1-2019-1-NL-EPPKA2-EUR-UNIV.

### **REFERENCE**

- Dovers, S. R., & Handmer, J. W. (1992). Uncertainty, sustainability and change. *Global Environmental Change*, 2(4), 262-276.
- Ezbakhe, F., & Pérez-Foguet, A. (2021). Decision analysis for sustainable development: The case of renewable energy planning under uncertainty. *European Journal of Operational Research*, 291(2), 601-613.

Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., ... & O'Connell, D. (2017). Integration: The key to implementing the Sustainable Development Goals. *Sustainability science*, 12(6), 911-919.

Colglazier, W. (2015). Sustainable development agenda: 2030. *Science*, 349(6252), 1048-1050.

Kohn Rådberg, K., Lundqvist, U., Malmqvist, J., & Hagvall Svensson, O. (2020). From CDIO to challenge-based learning experiences—expanding student learning as well as societal impact?. *European Journal of Engineering Education*, 45(1), 22-37.