5

Case study competition as an example of the interdisciplinary and immersive teaching practice

Sobczak-Malitka, Wioleta[1]; Drejerska, Nina[1]

[1] Warsaw University of Life Sciences, Warsaw, Poland

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The example of the interdisciplinary and immersive teaching practice described in the paper was organised within the Euroleague for Life Sciences (ELLS), a network of leading universities cooperating in the fields of natural resource management, agricultural and forestry sciences, life sciences, animal sciences, food sciences, environmental sciences and rural development, incl. agricultural economics or rural sociology (Euroleague for Life Sciences, 2023b). Case Study Competitions (CSC) offer students a valuable platform to apply their knowledge and skills in addressing practical challenges associated with real-life problems in life sciences and related fields. With an interdisciplinary approach and an international perspective, these competitions allow students to earn academic credits while putting their theoretical knowledge into practice (Euroleague for Life Sciences, 2023a).

The ELLS CSC was organised in Poland within the project financed by ELLS Fund for Incentives – Ref. ELLS fund 2020-11 and proposed by the Bioeconomy Subject Area in 2022. It was focused on local contribution to sustainable development, stressing the role of society while answering challenges of the future. The students' task was to analyse the circumstances and dynamics a rural community faced on their way towards sustainable development. Sokoły rural commune was selected as a case study. It is located in the Western Functional Area of the Podlaskie Region (north-eastern part of Poland). The region's eastern border is also the Polish border with Lithuania and Belarus. The region's population density is 59 people/km2, less than half the national average. Podlaskie region is characterised by the highest share of national parks and the second in terms of NATURA 2000 areas in the total area. Legally protected areas occupy 32% of its territory. This region is well-known in the country and Europe because of its unique natural and landscape values, making it very attractive in tourism. The entire region is located in the functional area of the Green Lungs of Poland. The Sokoły commune is situated in its central part. It consists of 48 villages and covers 156 km2. The region is characterized by a low degree of industrialization. The basic branch of the region's economy is agriculture and agro-food processing, with the dominance of the dairy industry (Golebiewski, Takala, Juszczyk, & Drejerska, 2019). On the one hand, it determines high efficiency as a result of specialisation, on the other contributes to some environmental issues.

The basic idea of the CSC 2022 was to attract teachers (experts) and students of

various fields (specializations). The main purpose was to cover topics of sustainable development in the selected commune. This required the participation and support from the various universities with different types of expertise involved in the ELLS. Students' field of specialization was indicated during the application process and then attendees with different background were selected to form interdisciplinary groups. Background information and activities were be provided during the E-learning phase and it was expected that students would begin to work within their teams from this phase. An e-learning phase (planned for 5 working days) and 5 days of onsite activities were planned. Teachers served as moderators and facilitators of the process.

The week-long intensive program in the Sokoły commune took place on 4–10 July 2022. It included lectures by academic teachers from various fields and different universities, but above all meetings with representatives of the local community – local authorities, farmers (*e.g.* milk production). Participants were divided into international groups of members studying in various fields (economics, agriculture, spatial management, environmental engineering, *etc.*).

The primary objective assigned to the students entailed the preparation of a project or action proposal aimed at fostering local development. The initial day was dedicated to promoting group cohesion and acquainting the students with the municipality. For the following days, a few lecture were provided, but the focal point was the meetings arranged with various representatives of the local community, including the mayor. Additionally, the students had the opportunity to engage in field visits, such as exploring a milk farm or observing the operations of a local traditional cake producer.

The students diligently worked on refining their project ideas, benefiting from valuable guidance provided by on-site teachers. This collaborative effort ensured a truly interdisciplinary approach, as students from different academic disciplines could consult and exchange ideas, enriching their perspectives. Finally, the culmination of their endeavors involved presenting their projects to the mayor, who took the initiative to organize a recording of the event by the regional television network, thereby amplifying the significance of their achievements.

In order to promote interdisciplinarity and foster an immersive learning experience,

the CSC organizers arranged a diverse array of integration activities. These activities included engaging in adventurous pursuits like canoeing, embarking on invigorating cycling excursions, and gathering around a bonfire. Moreover, the accommodation provided in close proximity to the investigated community served a dual purpose: facilitating better integration among students and teachers, while also creating an environment conducive to effective group work and collaborative problem-solving.

The final projects were presented during the ELLS conference, organized in Prague (Czech University of Life Sciences, Czech Republic), 23-24 September 2024. Team of Igor Olech (Warsaw University of Life Sciences, PhD student at the Institute of Economics and Finance, Doctoral School SGGW), Peter Muller (University of Hohenheim) and Chiara Coluccia (Wageningen University & Research) won the prize (1500 euro) for the best case study presented during the conference based on the project "Ecological practices for maize farming in Sokoły: an introduction to living mulch".

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