

DEFINING ACTIONABLE GREEN COMPETENCE FRAMEWORK FOR EDUCATION AND FOR PROFESSIONAL TRAINING AND DEVELOPMENT

Y. Demchenko¹, B. Koudijs², A. Oprescu³

¹ UNIVERSITY OF AMSTERDAM, INFORMATICS INSTITUTE. (NETHERLANDS)

² University Of Amsterdam, Informatics Institute (NETHERLANDS)

³ University of Amsterdam (NETHERLANDS)

Importance of addressing energy efficiency and reducing environmental impact of all society activities for sustainable development (which we can call “green” aspects) is commonly recognised. There many initiatives, development programs, standards, policies and regulations to address different aspects of all society activities, including technology, industry, living environment, resources usage. There is a growing demand for specialists and practitioners on job markets having vacancies in different economy sectors with demanded green competences and skills. Many universities started including environmental and sustainability aspects in different courses and programs. However, there is no common vision or well-defined approach how to address green competences and skills either on job market or in education and training. The complexity is defined by multiple areas, technologies and activities where the technical solutions, policies and procedures should be addressed to achieve a sustainable effect in organisational operation and education.

The European sustainability competence framework GreenComp (2022) has been developed as a part of the European Green Deal to promote learning on environmental sustainability in the European Union. “GreenComp identifies a set of sustainability competences to feed into education programmes to help learners develop knowledge, skills and aptitudes that promote ways to think, plan and act with empathy, responsibility, and care for our planet and for public health.” The following competence groups are defined: (1) Embodying sustainability values: (i) Valuing sustainability; (ii) Supporting fairness; (ii) Promoting nature; (2) Embracing complexity in sustainability: (i) Systems thinking; (ii) Critical thinking; (iii) Problem framing; (3) Envisioning sustainable futures: (i) Futures literacy; (ii) Adaptability; (iii) Exploratory thinking; (4) Acting for sustainability: (i) Political agency; (ii) Collective action; (iii) Individual initiative.

This paper presents the authors’ analysis of how much the GreenComp reflects the job market demand and how it can be used for practical courses and curricula development. More than 200 job vacancies have been analysed using indeed.com job advertisement website, resolving difficulties with different terminologies and vocabulary used in job advertisement. To resolve these difficulties, the project has leveraged the methodology of the EDISON Data Science Framework (EDSF). This experience resulted in the suggestions for more actionable way of defining individual competences, also linking required knowledge topics, expected skills and aptitude. It is also essential to define competences not in declarative way, like in GreenComp, but in actionable role/persona oriented way. The paper proposes a set of learning units for modular curricula addressing individual competences. As majority of green competences and skills are transversal, it is important to include practical and group discussion activities to facilitate the development of system design thinking by learners and trainees.

References
[1] GreenComp The European sustainability competence framework, JRC128040, EU, 2022. <https://publications.jrc.ec.europa.eu/repository/handle/JRC128040>

[2] GreenDIGIT: Greener Future Digital Research Infrastructures, Horizon Europe Project (Grant ID: 101131207), <https://www.greendigit-project.eu/>

[3] EDISON Data Science Framework (EDSF), <https://edisoncommunity.github.io/EDSF/>

Keywords: Green Competences, Sustainability, Computer Science Education, Curriculum Development

You will find here a preview of your abstract, once you have filled in the data (title, text, authors) required to do so.