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USING DIGITAL OPEN BADGES TO PROMOTE TEACHERS' SUSTAINABILITY COMPETENCES

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INTRODUCTION

Teachers' Sustainability Competences refer to the skills, knowledge and attitudes teachers need to facilitate students' Learning for Sustainability (Lfs). Several competence frameworks have been developed over time (review by Corres et al., 2020), but they have not affected teacher training much because the quite conceptual ways of defining the competences haven't met teacher educators' or individual teachers' needs and realities (Vare, 2022).

This gap was the starting point of the Erasmus+ Teacher Academy Project "Academy for Sustainable Future Educators – EduSTA" (2022–2025), a project aiming to develop a digital open badge constellation that would help teachers to recognize their existing competences and encourage competence development as part of career development.

Digital Open Badges are part of a significant shift in the landscape of career and professional development from degree-based education towards certification of competences and prior learning (Ghasia et al., 2019). In higher education institutions, the competence-based approach and digital badges guide the development of competences in a work-based and work-oriented way, with the aim of applying the new competences acquired in a concrete way to their teaching. The Finnish innovation, digital open badge-driven learning (Brauer, 2019), serves as a model for the development of teachers' sustainability competences in higher education pedagogy competences EduSTA.

In the EduSTA project, previous frameworks of teachers' competences for education for sustainable development (Sleurs 2008, UNECE 2012, Rounder Sense of Purpose 2019) and Green Comps (Bianchi et al. 2022) were used to identify four general competence areas of teachers' sustainability competence (Ametller Leal et al 2024). These were further divided into nine competences, which are practical and defined enough to be demonstrated by analysing and developing educational practices.

THE COMPETENCES OF A SUSTAINABLE FUTURE EDUCATOR

The meta badge of Sustainable Future Educator (Figure 1) consists of four milestone badges, which correspond to the identified competence areas: Sustainability Literacy, Learning Ecosystem Design, Enabling Action, and Reflexive Praxis.

The Sustainability Literacy milestone badge proves that the educator uses knowledge in a responsible way to further Sustainable Development through education. The Sustainable Literacy milestone badge contains three micro badges: knowledgeable problem articulator, critical developer, and complexity embracer. A Knowledgeable Problem Articulator understands the background and purpose of Sustainable Development Goals (SDGs) and their interconnection to Education for Sustainable Development (ESD) in their educational context(s). A Critical Developer uses knowledge related to Sustainable Development, sustainability competences, Education for Sustainable Development, and national policy documents on implementing SD in education to critically develop teaching or curricula. A Complexity Embracer is aware of and acknowledges complexity in their professional/daily practice. They discuss and reflect upon uncertainties and contradictions with colleagues, students, and the community.

The Learning Ecosystem Design milestone badge proves that educators design learning environments and processes that facilitate the development of Green Comps. It contains three micro badges: Systems Thinking Promoter, Futures Thinking Catalyser, and Value Awareness Supporter. Each of these badges proves that the person who has gained them can design teaching and learning processes, utilise learning environments, and implement learning and assessing methods which help students grasp the systems, facilitate students' future thinking or help students identify, evaluate, and reflect upon their values.



Figure 1. The Educator for Sustainable Future Badge Constellation.

Enabling Action milestone badge proves that educator organises collaborative communal action and facilitates student agency development. The Enabling Action milestone badge contains two micro badges. An Active Collaborator co-operates to strengthen communal action for a sustainable future. An Action Facilitator designs and organises opportunities that trigger and support student action for a sustainable future.

The reflexive Praxis milestone badge proves that an educator learns purposefully from her/his actions to improve in a dialogue with the community, society, and science. The Reflexive Praxis milestone badge contains one micro badge. A Conscious Change Agent reflects on institutional and professional policies and strives towards continuous personal and institutional learning in ESD using reflection tools.

USING THE BADGES AS A MEANS OF PROFESSIONAL DEVELOPMENT

From the perspective of the teacher who develops his/her competences through digital-open-badge driven learning each competence demonstration awards him with a micro badge adding up to milestone badges, and finally to a meta-badge. The guidelines in the platform for demonstrating competence (Open Badge Factory) include study materials and detailed instructions for competence demonstration. The more experienced teachers can demonstrate their competence with the help of these materials. Still, courses, workshops or trainings to help teachers recognise their competences and learn more have proven to be useful as part of the digital-open-badge-driven learning processes.

From the perspective of a HEI, the Sustainable Future Educator badges provide a framework for organising work-related further education on Education for Sustainable Development. All the competence demonstrations relate to curriculum development, course design or designing learning activities, or organising co-operation with partners outside the HEI. Finally, the badges facilitate teachers' systems thinking and promote whole-school approaches in higher education.

More information on the EduSTA-project and possibilities to use the results are available on the website <https://projects.tuni.fi/edusta/>.

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