Assessing & Validating Key Competencies for Sustainability

Designing Quality Assurance Processes for the New Paradigm

We present the landscape of sustainability competence frameworks, highlight the internal assessment tools and processes used to evaluate them, and indicate entry points where quality assurance and accreditation are most needed to provide HEIs with guidance in good practice and quality assurance.

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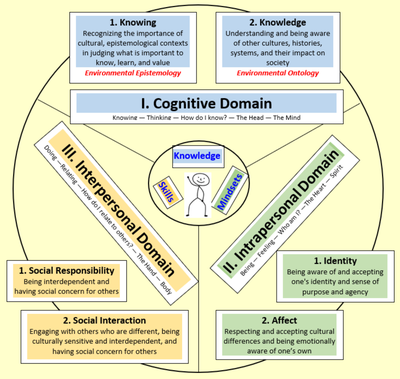
What is sustainability literacy?
The knowledge, skills, and mindset that motivates individuals to become deeply committed to building a sustainable future and to making informed and effective decisions



The 12 EU GreenComp Competencies

Acting for sustainability
- political agency
- collective action
- individual initiative

Embodying sustainability values
- valuing sustainability
- supporting fairness
- promoting nature

Envisioning sustainability futures
- futures literacy
- adaptability
- exploratory thinking

Embracing complexity in sustainability
- systems thinking
- critical thinking
- problem framing

What is a sustainability competency?

An individual disposition comprising a cluster of interrelated knowledge, skills, motives, and attitudes that allow successful completing of a sustainability related task

Integrated problem-solving competency
The ability to solve complex sustainability problems in integrated ways i.e., the ability to work with others to integrate problem analysis, sustainability assessment, visioning and strategy building, and to prepare for implementing the co-created solution in the real world. This includes the ability to articulate the individual contributions of the previous key competencies to sustainability problem-solving processes and being familiar with different problem-solving frameworks and able to select the appropriate one to develop viable solution option in context-sensitive ways, recognizing that sustainability problem-solving is a long-term, iterative and collective process between planning, realization, adjustment and evaluation.

Implementation competency
The ability to collectively carry out and realize planned sustainability strategies (e.g., sustainability action plan) on the ground, including implementation, adaptation, transfer, and scaling, in effective and efficient ways. Working toward a sustainability-informed vision over time involves monitoring and evaluating the realization process on the ground, addressing emerging challenges, and making adjustments.

Ways of doing

Strategic-thinking competency
The ability to collectively design transformational systemic interventions, transitions, and governance strategies while accounting for strategic leverage points, power dynamics, uncertainty and surprises as well as social and organizational learning in navigating these strategies.

Interpersonal competency (Collaborative)
The ability to motivate, enable, and facilitate collaborative and participatory sustainability research and collective problem-solving processes, and facilitate multi-, inter-, and transdisciplinary knowledge building and integration, which includes Western scientific knowledge as well as traditional ecological knowledge and indigenous knowledge and wisdom.

Systems-thinking competency
The ability to collectively analyze complex systems across different domains, sectors, and spatial and temporal scales using analytical concepts like cause-effect structures, cascading effects, inertia, feedback loops, interdependencies, and other systemic features.

Ways of thinking

Futures-thinking competency (Anticipatory)
The ability to collectively explore future developments and states, specifically to anticipate how sustainability challenges might evolve or occur over time (scenarios). This also includes collectively analyzing, crafting, and evaluating desired future states (visions). These visualizations of the future provide a foundation for researching evidence-supported alternative development pathways.

Intrapersonal competency (Self-awareness)
The ability to be aware of one's own emotions, desires, thoughts, and behaviors as well as one's positionality and role in global society and in the local community. Intrapersonal competency involves the ability to reflect and act with self-awareness and to regulate, motivate, and continually evaluate one's actions and improve oneself, drawing on and developing emotional intelligence and resilience.

Values-thinking competency (Normative and cultural)
The ability to collectively identify, analyze, map, apply, reconcile, and negotiate sustainability principles, goals, and targets, as well as trade-offs. This also includes the ability to be aware of and specify one's own values. Because sustainability is an inherently normative concept centered on equity among people, between people and the environment, and across generations, values-thinking competency includes engaging with principles and practices emphasizing concepts of justice, equity, diversity, and inclusion.

Ways of being

The 8 internationally recognized sustainability competencies

Consensus on sustainability competencies.
Wiek et al. (2011, 2016), Brundiers et al. (2021), Redman & Wiek (2021), GCSE Convergence Statement (2023).

Where can such competencies be taught within the 3-part mission of the university?

Articulate SLOs for knowledge

Articulate SLOs for skills

Articulate SLOs for mindsets / attitudes

How do we link student learning outcomes to sustainability literacy and competencies?

Articulate SLOs for:
(examples)

Systems thinking
Describe the benefits that systems thinking provides for solving sustainability problems.

Futures thinking
Describe the importance of inter-generational equity for sustainability.

Values thinking
Identify the causes of values divergence and propose effective methods for navigating them.

Strategic thinking
Describe the theory of change as applied at micro and macro levels.

Intrapersonal competency
Define emotional intelligence and its role in people's self agency.

Interpersonal competency
Describe the role of culture and empathy in human relations.

Implementation competency
Explain the iterative process between emerging challenges and required adjustments.

Integrated problem-solving
Explain the iterative process between emerging challenges and required adjustments.

Teaching
- curriculum
- co-curriculum
- pedagogy
- ecopedagogy
- global citizenship education
- education for sustainability
- cultural learning
- social-emotional development
- student experience (housing)

Research
- qualitative / quantitative
- applied
- descriptive
- correlational
- experimental
- diagnostic
- ethnographic
- grounded research
- publishing and dissemination
- undergraduate research

Service
- Cooperative education
- internships
- service learning
- community-based research
- employability
- social services
- community engagement
- continuing education
- professional training
- alumni engagement

Examples of Quality Assurance Indicators

Vision, Mission, and Values
The institution demonstrates awareness and concern that students will live and work within a rapidly changing and ecologically challenged globalized society.

Student Learning, Development, and Success
The institution provides effective curricular and co-curricular programs and corresponding learning outcomes that support students in building recognized key sustainability competencies.

Instructional Design and Assessment
The institution uses recognized tools and process for assessing student sustainability literacy and developing key competencies.

Student Support Services
The institution prioritizes career guidance for sustainable professional activity.

Governance and Leadership
Institutional leadership demonstrates sustainability literacy and is characterized by principles of environmental stewardship.

Facilities and Operations
The institution pursues aggressive low-carbon campus procurement, operations, and recycling.

Quality Assurance
The institution provides evidence that it defines quality education in terms of empowering students to engage and act for Earth sustainability, biodiversity, and climate justice.

Ethics and Integrity
The institution has divested from fossil energy and provides evidence that graduating students are sustainability literate and possess key sustainability competencies.

Assessment Tools

TASK BY Sulitest

The **A**ssessment of **S**ustainability **K**nowledge

Learn more!