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Sustainability in school education: assessment of student learning and competences: Key messages



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Contact: *Deirdre Hodson*

E-mail: EAC-UNITE-B2@ec.europa.eu

European Commission

B-1049 Brussels

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Key Messages

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1. Changing nature of assessment

Assessment of learning outcomes and competences is a major part of everyday classroom practice. The shift to competence-based learning and teaching over the last decades has resulted in changes of attitude and approaches towards assessment. Whereas traditionally assessment was mainly used to make summative judgments of student achievement, it has increasingly become a tool for learning. Formative assessment identifies progress and gaps in student learning to point to learning needs and adapt teaching accordingly. Rather than assessment *of* learning, it is assessment *for* learning.

Assessment differs according to context and purpose. Multiple types of assessments are needed to form a more comprehensive picture of what students know and are able to do, and what their learning needs are. The difference between various forms of assessment, including summative and formative is *how* the evidence of student learning is used. While standardised assessment tools allow comparison on different levels (e.g., across subjects and teachers), student-centred (formative) assessment can build students' skills for self-assessment and learning-to-learn, while also raising levels of achievement.

Bridging theory and practice is key to aligning curricula and assessment. Top level steering and theory might differ substantially from what teachers apply in the classroom, especially in systems with high school autonomy. Involving teachers in designing assessment will help bridge the theory-practice gap and ensure that assessment practice links to curricula content.

2. Assessing learning for sustainability

Innovative education agendas require adaptation of assessment practice. Learning for sustainability is an evolving area, which makes planning for learning outcomes and assessment more difficult. Competences such as values thinking, action competence and creativity are critical for sustainability but also particularly hard to measure. Here, the European sustainability competence framework, *GreenComp*, provides a useful basis to help frame and assess sustainability competences at different education levels and contexts. Furthermore, natural events like floods or fires require resilience and adaptation of learning and teaching processes to prepare for and deal with uncertainty and disruption.

New approaches to assessing learning for sustainability could include project-based work, portfolios, video interviews and digital badges. The action elements of learning for sustainability should be enabled and encouraged. Assessment approaches need to be inclusive and reflect different learning experiences, abilities and talent. Measurement tools can help activate learners' self-reflection and self-assessment, which can in turn trigger motivation for further improvement of learning outcomes.

Learning by doing is essential to support learning for sustainability. People need to know how to face climate hazards and what actions can help adapt to climate change. Assessment through observation can be useful to see if and how learners are able to interact with the environment (e.g., by using check lists of observable behaviours¹).

¹ LIFE FOSTER (www.lifefoster.eu) has developed check-lists used during in-company trainings to assess how much students could prevent food waste.

Both formative and summative assessment can support learning for sustainability. Summative assessment should incorporate sustainability as a part of given subject areas rather than being applied exclusively to sustainability. Formative assessment can well reflect different learning experiences, abilities and needs of learners.

Formative authentic assessment is especially conducive to learning for sustainability as it involves real-world contexts. It should incorporate parameters beyond the cognitive domain while being objective and support students' learning and development rather than rank them. Values and how to integrate them in assessment of sustainability competences are both a necessity and a challenge.

Formative authentic assessment is particularly useful in encouraging student self-efficacy by ensuring that goals known to the students are comprehensively assessed and lead directly to useful feedback. In each case, it will require time to understand and to adopt authentic assessment to current norms in less formative school practice and traditions.

Examples of authentic assessments include diaries and journals, writing a newspaper article, performing a dance or drama, designing a digital poster, show and tell presentations, or doing mini projects that involve activities at home. It could also include activities with and in local communities (e.g., schools cooperating with local environmental associations or local businesses or between education sectors, notably Vocational Education and Training). Such forms of assessment are characterised by open-ended tasks that require learners to construct extended responses, to perform an act, or to respond to real-world contexts or situations.

3. Using competence frameworks

Competence frameworks can support the assessment of learning for sustainability. Competence frameworks address – among others – the need to formulate a rigorous method of evaluating learning for sustainability – based on defining and trailing specific evidence points so that teachers know what to look for when assessing competences. *GreenComp* offers a comprehensive set of competences based on a holistic approach to sustainability. If adapted to specific contexts and needs, it can help policy makers and practitioners in their efforts to provide reliable assessment guidance on learning for sustainability.

Efforts are needed to make more effective use of existing frameworks rather than on generating new ones. This could include research on and development of instruments that translate tasks and learning activities into assessable outcomes and the implementation of these tools to produce authentic, qualitative and quantitative measures of learning. The European Commission is currently developing resources that will ensure better connections between different competence frameworks and help educators use them in a complementary way.

Local harmonisation of competence frameworks is important. Localisation is a way of adding trust, recognition and relevance to assessment procedures. It allows for accommodating relevance to society by adding value to the learning task and so increasing the possibility for transformative impact which is a highly desired outcome of learning for sustainability. As local actors, civil society and professional associations could contribute to and complement the work of local schools and other educational settings.

4. Using spaces and organisations beyond the school

The non-formal learning sector can support assessment of learning for sustainability. Environmental and social organisations, associations and other civil society actors working for sustainability are increasingly involved in offering combinations of formal, non-formal and informal learning activities and experiences. This offers innovative possibilities for assessment practices to match these settings and modalities.

Learning for sustainability in such less conventional settings draws out knowledge, skills, attitudes and values that are of considerable benefit to learners. They allow us to place learning closer to more authentic, real-life use thus providing more realistic spaces for assessment of the learning that occurs.

Policy action needs to ensure and build confidence and quality. Currently, both the learning on offer and the potential assessment practices that emerge in non-formal learning are unregulated and largely unprotected. Supporting research and development of innovative assessment practices that make use of these spaces and this expertise could be particularly useful. It would be especially relevant to identify and validate learner attributes that can be expected from using spaces and organisations beyond the school, as well as the roles of teachers within any new arrangements and the strengths and shortcomings that others can bring to these by their involvement.

Policy action might also include developing standards, guidelines and training opportunities to support schools and partners from communities, NGOs, environmental organisations, and other similar organisations. However, assessment of curricular-related learning, even if outside the school setting, should be the responsibility of teachers.

5. Leveraging the value of youth voice

Involving young people in the design and evaluation of their own learning is an important part of building inclusive education experiences and encouraging student self-formation. Such involvement enables more participatory approaches that empower learners to design their own sustainability actions and projects, to acquire new and reinforce existing skills through active, hands-on, task and enquiry-based learning opportunities. This requires the widespread use of participatory assessment based on more learner-centred materials and programmes.

Youth participation in assessing learning for sustainability requires new approaches. This includes the development of assessment techniques and tools that promote multiple measures of student learning and performance, reflect new forms of sustainability education and directly involve young people in responding to the scientific, social, ethical and political complexities of climate change and transition to a sustainable economy.

6. Supporting teachers and schools

Top-level support for capacity building and guidelines on the role and assessment of values and attitudes in teaching and learning is key. This might include more flexibility and freedom in the national or other top-level assessment frameworks and guidelines. To

address the complexity of sustainability and allow for a holistic approach to learning, top-level guidance should support diversity in assessment.

Clear guidelines can help teachers systematise what is required/assessed. This could include a guidebook for teachers with good practise examples. Developing rubrics for assessment could help teachers steer and manage different forms of assessing learning for sustainability.

At institutional level, assessment approaches and practices that make connections between schools, their local communities and society more broadly should be supported. These will need to be both timely and in keeping with wider school practices and arrangements.

A school culture that encourages innovative approaches benefits both teaching and assessment of sustainability. This could include creating a collaborative space in school for teachers to reflect, share experience and work together. In this way, teachers of different subjects can explore together the different dimensions of sustainability (e.g. scientific knowledge, practical application, active citizenship, communication and outreach, collaboration with local community).

Applicable, flexible and practical assessment tools are key. Developing “survival kits” with different approaches (authentic/formative, qualitative/quantitative, summative, etc.) that support learning for sustainability and specific competence frameworks will facilitate teachers’ daily practice. Such tools could include participatory digital maps and rubrics with automated evaluation processes, which could also be accessible through a rubrics app.

Self-assessment and self-reflection tools, including online, should target teachers and students. Developing self-assessment tools can play a crucial role for sustainability learning and sustainability competence development of students and teachers. Teachers could benefit from tools that support teachers’ self-reflection on the outcomes of students’ learning, provide guidance on teaching-learning scenarios, learning environments and help adapting and improving the teaching and learning process.

Assessment needs to be an integral part of teacher training in the area of learning for sustainability. This applies to initial teacher education and continued professional development. Online learning offers and digital tools (e.g. for self-reflection) that are accessible and easy to use can facilitate teachers’ professional learning and development.

7. Examples of assessment practices

The following examples are from the position paper by the LifeLong Learning Platform: “Rethinking assessments: Prioritising learners’ wellbeing” (December 2021)²:

[Valorise-toi! - Empower Yourself! \[WOSM\]](#). This self-assessment tool was developed in the framework of the work of the National Working Group of Scouts et Guides de France on ‘Young Adults-Rover Section’ dedicated to the question of giving the appropriate value to skills acquired in volunteering. It’s about gaining recognition in university and professional fields of the richness, the diversity and the seriousness of the skills acquired and used in the framework of the role as Leaders of the Scout Movement. This tool aims to allow everybody

² [PP21.pdf \(lllplatform.eu\)](#)

to self-assess their skills and to highlight their value. This is done by putting forward a list of activities linked to the individual's role as Leader and allowing an analysis of what the individual already knows (skills and competences) and of what they might be able to still learn, using a 'professional' language to talk about their Scouting experience and to give it its fair value.

[Validation of Volunteer Work \[ESN\]](#). The Erasmus Student network has developed a self-assessment tool in the form of a skill survey for all their volunteers to identify the competencies gained through the structured and unstructured learning while volunteering for ESN so as to increase their employability as well their own recognition of their skills. Volunteers are asked to complete the self-assessment tool and send the relevant documentation to the Network Committee who analyses whether the procedure was respected and the competences were acquired or developed. At this point, the volunteer either receives a certificate, or if the Committee deems that the skills have not yet been acquired, they will put forward a set of recommendations to support the volunteer develop those skills.

[Tools for assessment in the volunteering sector \[LLLPI\]](#). The EU project Improval lists over 50 tools available in the EU, most of which include or relate to assessments and aim to bring benefits to the individuals - the volunteers. These benefits include: a sense of agency, self-confidence, empowerment, career management, motivation for learning, social and communication skills, all aspects that can be linked to an increased wellbeing of individuals who feel they are useful, they contribute to something and their value is recognised.

[A Personal Portfolio: Socratic Dialogue in a Secondary School in Finland \[ECSWE, L4WB-F\]](#). The essence of this practice is to enable pupils to become an active part of the teaching and assessment process. The teacher, Eeva teaches the Finnish language using a Socratic dialogic teaching method. Students have the opportunity to engage with all subjects, through the dialogue and then through an assignment for which she provides personalised comments for the students' progress. With the help of a course guide, the pupils can plan their journey and select the assignments they would like to include, and discover how they can best show their capabilities in line with the instructions. At the end of the main lesson block, pupils bring all of their work together in a portfolio, make the necessary adjustments, and hand it in to receive a summative evaluation, consisting of an overall grade and a written comment.

[E-portfolio for volunteering skills and competences \[Arci / SOLIDAR\]](#). The E-portfolio is a tool especially aimed at the identification of learning outcomes in the contexts of activities linked to non-formal education, developed in an Arci club (Strauss Aps) in relation to completing the Youthpass. It is like a personal diary of the ESC Volunteer so they can identify the skills and competences acquired during the volunteering activities. It is a form of self-assessment that makes reference to the 8 competences contained in the Youthpass. The continuous update of the e-portfolio allows the volunteer to have an updated view of their 'learning status' and this facilitates the final completion of the certificate.

[The Art of Writing Good Reports: An Alternative to Grades, Denmark \[ECSWE, L4WB-F\]](#). A secondary Steiner Waldorf school in Denmark has looked beyond grades entirely as a means for evaluating student performance and effort. Pupils produce an individual lesson book of their learning process which the teacher continuously marks by taking into account the following criteria: (a) the pupil has implemented feedback, (b) they have managed to show engagement and interest (c) and they have made progress from when they started. The end product is a 30+ page final report which looks back on the syllabus, learning process, interaction and achievements of the pupil in two or four years. This is utilised to give higher education admission officers or employers a clear, honest and positive picture of the pupil

[Laterna Magica: The Magic of Interweaving Standardised and Formative Assessment, the Netherlands \[ECSWE, L4WB-F\]](#) At the Laterna Magica school in the Netherlands, students make a portfolio to track their individual progress throughout the year with the support of a personal coach and other school staff. Rubrics and matrices are used to identify criteria for assessment, they also make use of self and peer assessment. National standardised tests are given to individual pupils at a time and level of difficulty considered suitable to that pupil.

[Innovation within Vocational Education: Creating a Card Game, the Netherlands \[ECSWE, L4WB-F\]](#). In a VET school in the Netherlands, Naima teaches a class on nutrition where the majority of the learners are from migrant homes in economically disadvantaged areas. Naima uses the exercise of creating a card game as a form of assessment - which incorporates self and peer-assessment and where the focus is on the process of learning and on the outcomes. The game involves amassing related subsets of cards in groups (in this class on nutrition the subsets are vitamins); the groups then need to identify and choose different vitamins and carry out research online about them and come up with interesting questions that are related. The assessment is woven into the teamwork which is guided by the teacher.

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