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MODULE 4. VALIDATION AND ASSESSMENT

Author(s):
Evie Kouroumichaki
Institution:
Stimmuli for Social Change

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OBJECTIVES

The training module

Objectives

The objectives of the present module are:

- To enhance teachers' knowledge on validating and assessment methodologies.
- To boost teachers' confidence to use innovative evaluation techniques, rather than exams or quizzes.
- To prepare teachers with specific examples, who are going to apply the EduNUT curriculum within their classes.

The training module

Teaching methods: self paced reading, case study

Duration: 1,5 hours

GLOSSARY

Main elements of Assessment & Evaluation

Learning assessment: Assessing learning is an essential part of measuring educational achievement, evaluating national educational systems, and monitoring learning progress.

Formative evaluation: The process of evaluation that happens during the program development, aiming to give information that will help the teacher improve their teaching strategy.

Summative evaluation: The type of evaluation that happens at the end of the implementation of the programme where the teacher evaluates the result.

Main elements of Assessment & Evaluation

in eduNUT

Self-assessment evaluation: Student self-assessment involves students describing and evaluating the processes and products of their learning. Students evaluate the work they have produced and reflect on processes, actions and activities.

Rubrics: A rubric is a type of scoring guide tool used to assess specific components and expectations of learning, either that would be a single assignment or a module.

Competence assessment: A competency-based assessment, often referred to as CBA, is an approach used to measure individuals' skills, knowledge, and abilities related to a specific role or learning objective. This type of assessment focuses on the actual performance of an individual rather than mere theoretical knowledge.

TEACHING MATERIALS

Validation & Educational assessment

Assessment of the learning process and outcomes

Validation

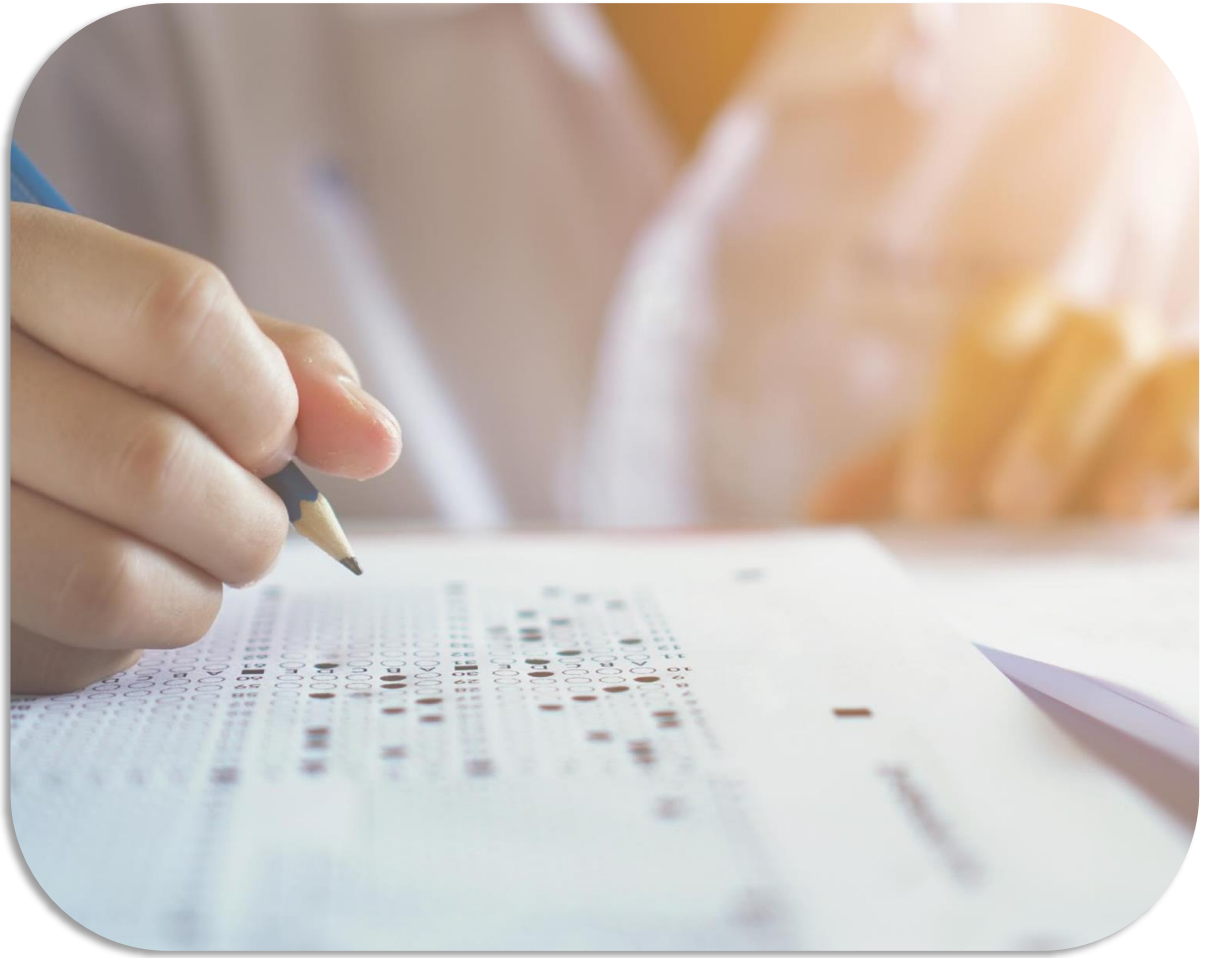
WHY

The validation method(s) used by the teacher, give information to themselves and students firstly, and administrators, colleagues and parents secondly, about the ways that learning is understood and measured.

HOW

There are several options for teachers to chose to understand the students' learning progress.

The 2 most relevant methods are the **formative** and **summative** assessment.



Assessment Importance

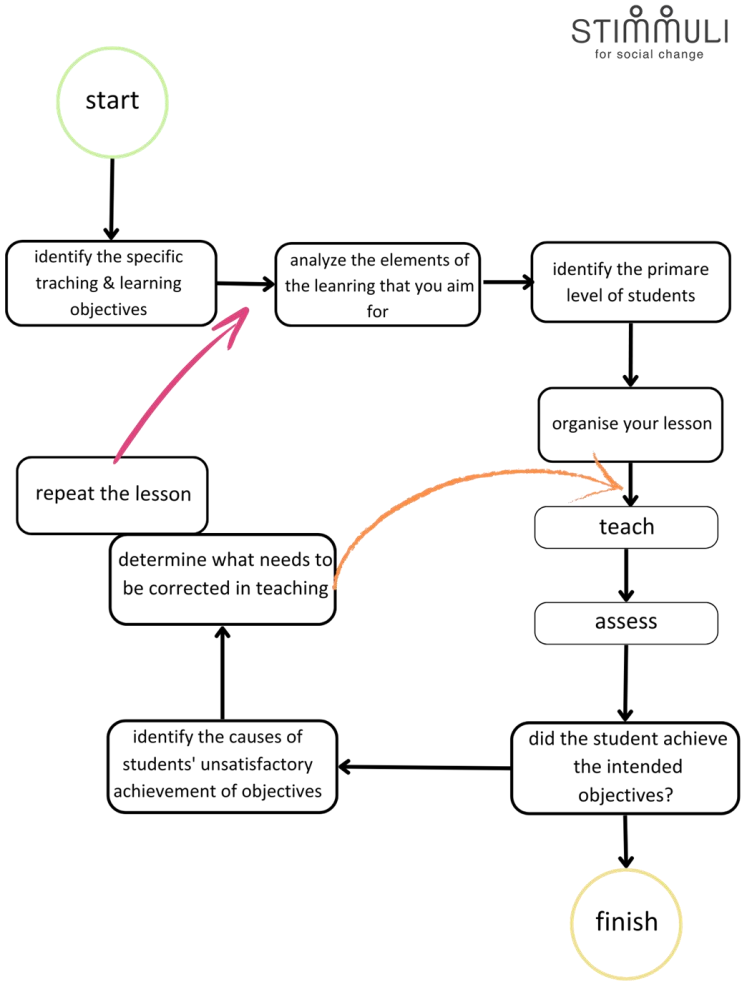
The most valuable objective of assessment in education, is the advancement of teaching.

The advancement of teaching requires assessment of both students and teachers.

Student's assessment aspires the identification of their current learning level, the factors that affect their progress, and finally the potential and skills in order to be specifically advanced.

Assessment Process

A schematic representation of the assessment process.



source: Anderson, R. & Faust, G.

Categorization of educational assessment

There are many types of educational assessment, the most common based on the **learning process** of which are:

- Pre-assessment
- **Formative assessment**
- **Diagnostic assessment**
- Summative assessment

There are many types of educational assessment, the most common based on the **evaluating group** of which are:

- Teachers' assessment
- Students' assessment

There are many types of educational assessment, the most common based on the **learning outcome** of which are:

- Levels of knowledge acquired
- Competencies gained

1/Categorization based on the process

Formative evaluation

- Is an assessment **for** learning.
- Helps the teacher & student to understand **what they already** know and how they learn.
- Assesses the students' progress in the classroom.
- Could have the following format: quizzes, games, projects, presentations, discussions.

Summative evaluation

- Is an assessment **of** learning.
- Helps the teacher & the student to understand **what they have learnt**.
- Assesses the student's learning outcome at the end of the programme.
- Could have the following format: final exams, reports, papers, end-of-class projects, open discussions.

2/Categorization based on the evaluating group

Teachers' assessment

- When the evaluating group of the learning process is teachers.
- This type of assessment is mainly linked with more traditional learning styles.

Students' assessment

- When the evaluating group of the learning process is students themselves.
- This type of assessment is mainly linked with student-based learning and transformative learning methodology.

Indicative

Self assessment // Co-assessment // Group assessment

Student Self-assessment

Self-assessment mainly refers to the method of evaluation & pedagogical process where the learner 1)participates in the learning process actively, 2)tries to make sense and 3)judges the outcomes of their learning process.

Peer Assessment & Co-assessment

Peer Assessment refers to the method of evaluation in which a group of individuals (at least 2) rate each other. Peer assessment helps the students to be responsible, and to get insight in the criteria that determine the learning progress.

Co-assessment or collaborative assessment, is a method of evaluation in which both learners and educators participate in the assessment. It is not necessary for the student to rate themselves, but mainly to participate in the process, making a common sense with the educator.

3/Categorization based on the evaluating outcome

Knowledge assessment

Evaluates the knowledge which is measured against a standard knowledge base.

Competence assessment

Evaluates how competent the individual is in applying that knowledge, and skills.

Competence assessment

Competencies are "**context-specific cognitive dispositions**" that differ from constructs such as "**intelligence**" or "**mental growth**".

Competencies refer to the ability of a **person to advance a set of specific challenges** in specific situations in specific domains, where intelligence relates to a set of skills or/and mental abilities, and attitudes that can be used to resolve and master challenges.

According to OECD, the definition of competencies is in line with the way which the term "**competence**" is used in international large-scale assessment studies such as PISA or PIRLS.

Competence assessment

Skills are “context-specific cognitive dispositions” that differ from constructs such as “intelligence” or “intellectual development”.

Skills refer to an individual’s ability to advance a set of specific challenges in specific situations in specific domains, where intelligence refers to a set of skills and/or mental abilities and attitudes that can be used to solve and address the challenges.

Σύμφωνα με τον ΟΟΣΑ, ο ορισμός των ικανοτήτων συνάδει με τον τρόπο με τον οποίο χρησιμοποιείται ο όρος «ικανότητα» σε διεθνείς μελέτες αξιολόγησης μεγάλης κλίμακας, όπως η PISA ή η PIRLS.

Assessment tools

Tools and methods used in the competence assessment method

Assessment tools

Traditional assessment tools

Alternative assessment tools

Assessment tools – Traditional tools

- Open-ended test
- True-False test
- Multiple choice test
- Matching test
- Oral exam

Assessment tools – Alternative tools

- Performance assignment
- Project work (project-based learning)
- Structured grid - Rubric
- Portfolio
- Peer Evaluation & Co-evaluation form
- Self-evaluation form
- Concept maps
- Interview
- Attitude scale

Structured Grids - Rubrics

Rubrics can serve both educational and evaluative purposes. When integrated into a formative, student-focused assessment strategy, rubrics can aid students in building understanding and skills/competencies, while also enabling them to accurately assess the quality of their own work.

Rubrics for Competence assessment

Competencies are general statements that describe either a set of desired knowledge, skills and attitudes of a students, or one specific skill, when students finish their learning process.

**The ideas presented here are applicable for anyone who wants or uses rubrics in the classroom, regardless of the discipline or grade level.*

Rubrics – Designing effective rubrics

Identification of the qualities and attributes that you want to observe in the students' outputs.

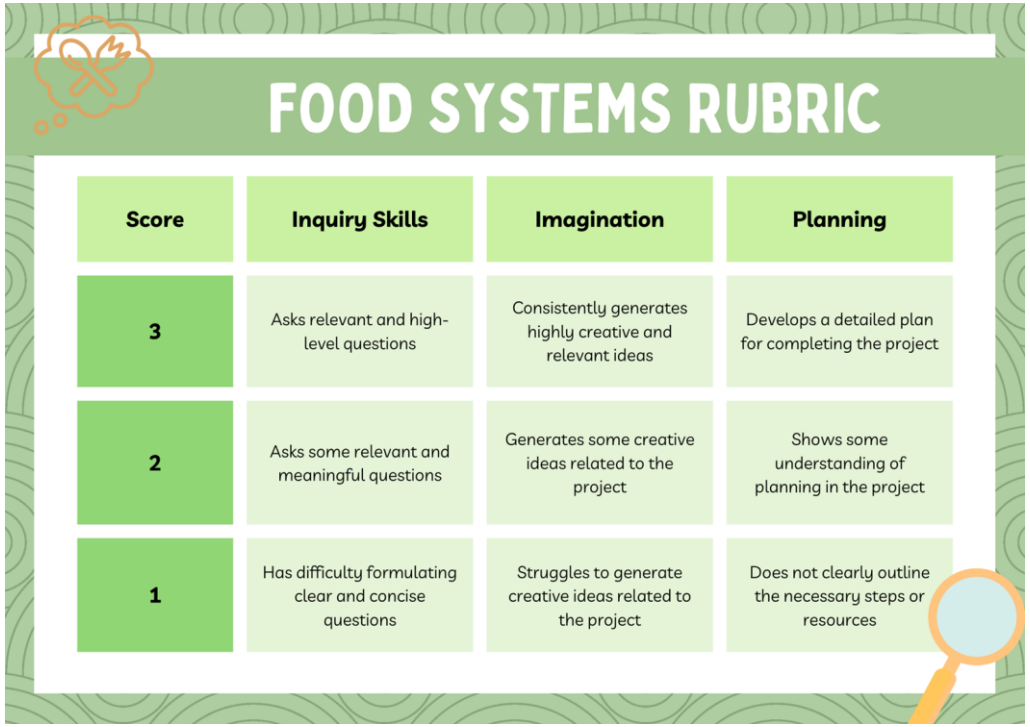
Set the learning objectives descriptively.

Decide the scale of the grid, there are more complex grids, with 5 scale metrics, but also minimal designs with 4 or even 3 scales of grading.

Rubrics – Designing effective rubrics

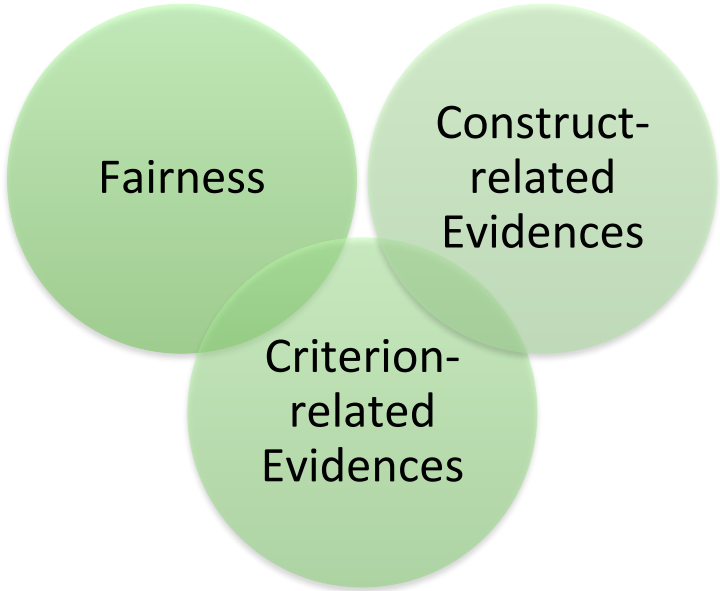
Envisioning sustainable futures (primary education level)

INDICATORS	DESCRIPTORS				
	1	2	3	4	5
Futures literacy: To envision alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future	Does not seem to be aware of the importance of envisioning future scenarios for sustainability.	Seems to be aware that thinking about a sustainable future is important but doesn't seem envision alternative scenarios.	Can discuss about alternative futures, identifying a preferred one.	Knows that effects caused by humans play a major role when thinking about alternative and preferred sustainable futures.	Is concerned about the impact of one's own action on the future; Can identify actions and initiatives that can lead to a preferred future.
Adaptability: To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity, and risk.	Is not aware or does not care about the importance of adapting personal behaviours for sustainable futures.	knows the risks associated with transformations of natural environments by humans but demonstrates little adaptability of personal actions to promote more sustainable futures.	Can reflect about how sustainable own behaviour and practices are and acknowledges that there are local and global implications of unsustainable practices.	Can identify different lifestyles and consumption patterns to use fewer natural resources; Knows which aspects of personal lifestyle have higher impacts on sustainability and require adapting.	Can identify specific areas of own life that can be adapted to be more sustainable; Is willing to adapt to sustainable options, even if competing with personal interests.
Exploratory thinking: To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.	Does not seem to be aware that sustainability problems can relate do different disciplines.	Seems to be aware that sustainability problems can be connected to several disciplines.	Knows that sustainability problems are interdisciplinary and can only be solved through new ideas and ways of thinking.	Demonstrates interest in reflecting about sustainability problems, linking different perspectives, to achieve new ideas.	Explores the links of different disciplines to come up with new ideas and solutions when discussing sustainability; Is willing to make unusual choices to promote sustainable futures.



Rubrics – Designing effective rubrics

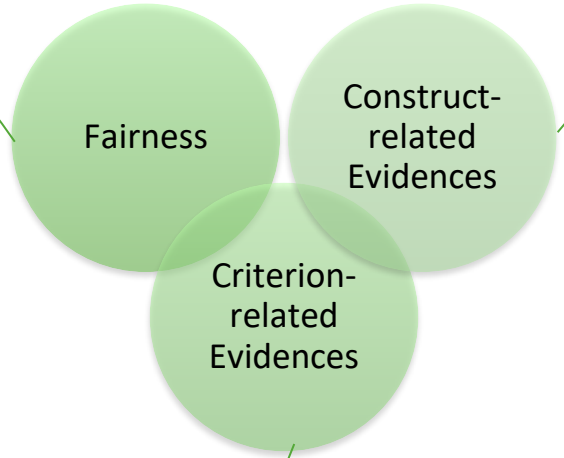
3 categories are commonly examined to support the validity and should be considered in the development of scoring rubrics:



**Those categories are being utilized for validation of assessment tools in general, not only for rubrics.*
*** Those categories are being updated in time.*

Rubrics – Designing effective rubrics

Make sure that the rubric is not biased against specific socioeconomic, cultural, ethnic, gendered subgroups.



Make sure that the score validates a specific construct. For example, if you are checking a written paper for "problem solving" you want mark any score because of spelling mistakes.

Make sure that you assess a construct that predicts either current (concurrent validity) or future (predictive validity) real-life performance or other external outcomes of interest.

Rubrics – Ranking the outcome

In order to calculate and rank the students' learning growth, we look at each one of the criteria for the outcomes and give a comment/rank as insufficient,, sufficient, good or excellent.

To calculate the final grade in a scale of 10, add all the grades together and double the grade for the presentation, then divide the outcome by 10. round up or down to full or half.

If you teaches in classes where you can use different grading systems, that uses for example notions, such as 'insufficient', 'sufficient', 'good', and 'excellent', you can use the following standards:

- Between 5 and 6: insufficient
- Between 6 and 7: sufficient
- Between 7 and 9: good
- Between 9 and 10: excellent.

Competence assessment in the EduNUT project

The **eduNUT** project aims to boost students to become confident, and gain skills, attitudes and knowledge about sustainable food systems and nutrition, in order to progressively change their personal consumption patterns, and inspire other to do the same.

A competence-based education helps students to develop such green skills based on knowledge and attitudes that can help promote responsible action and stimulate willingness to take or demand action at local, national and global level.

To succeed that, the **eduNUT curriculum** would be designed based on the European framework for green competence assessment "**GreenComp**". The European Commission has developed it on sustainability competences at EU level, to provide a common ground to learners and guidance to educators, providing an agreed definition of what sustainability as a competence entails.

GreenComp can support education and training systems in shaping systemic and critical thinkers who care about our planet's present and its future. All 12 competences of the framework are applicable to all learners. Among those 12, we have concluded to work with the following three: **1. Embracing complexity in sustainability**, **2. Envisioning sustainable futures** and **3. Acting for sustainability.**

Competence assessment in the EduNUT project

Image: visual presentation of the sustainability competence/source: JRC, 2022

ADDITIONAL MATERIALS AND SOURCES OF INFORMATION

EU Competence Frameworks

GreenComp: The European sustainability competence framework

LifeComp: The European framework for the personal, social and learning to learn key competence

DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes

Assessment Grid Tools & Resources

AI tools: Enter in the chat the names of the competencies, module, ages of students, scale and metric system.

Excel / Google Sheets: For spreadsheet enthusiasts, these tools give you great flexibility in designing your grids.

ChallengeMe: A platform offers you an intuitive interface for creating, managing and evaluating peer-based activities.

iRubric: A platform that can help your organization develop a culture of outcomes-based assessments and manage data.

CASE STUDY

Case study – design an assessment rubric

You are a teacher of 13 years old students, and you have the overview of implementing a project with the title "farm to table", that lasts for 4 weeks in total. The educational programme is designed in a way that promotes student-based learning about sustainable farming and nutrition. It promises to cultivate 4 skills to students (knowledge of ecological farming, collaboration, active citizenship, and futures literacy). Now, give your best and try to design a rubric that can assess at least 1 out of those competencies.

Case study – design an assessment rubric

√ Download the excel sheet and work locally.

↓Click: EduNUT_WP3_module 4_rubric template

Competence/grading level	beggining	emerging	developing	demonstrating
EXAMPLE: critical thinking	*The student rarely thinks about whether the resources they use are credible. They are happy with what they already know and do not bother to find out more.*	*The studens usually explain their opinion and give at least one reason for it. If someone encourages the,. they try to learn more about ideas and concepts that are new to them.*	*They can explain their opinion and give some reasons for it. They try to learn more about ideas and concepts that are new to them.*	*The students use different strategies and good thinking to decide if resources are credible. They can clearly explain their opinion on a topic or writing and give good reasons for it.*
knowledge of ecological farming	*describe here the objective with one or two sentences*			
collaboration				
active citizenship				
futures literacy				

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