

*PROJECT TITLE:
PROMOTING FORMATIVE ASSESSMENT: FROM THEORY TO
POLICY AND PRACTICE (FORMAS)*

GROUP B - SESSION 4

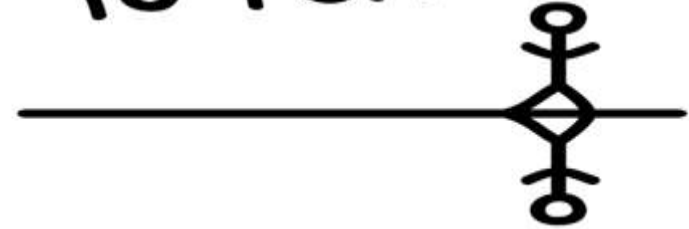


ACKNOWLEDGEMENTS

This project, entitled “Promoting Formative Assessment: From Theory to Policy and Practice (FORMAS)” has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Reflection time

Take time
to reflect



- ✓ Reflect on your experiences with the actions you have undertaken since our previous meeting, to formulate assessment success criteria and involve students in the process of assessment.

Take into account the following:

- ❖ Have you tried formulating assessment criteria? What difficulties did you encountered? How did you handle them?
- ❖ Did you do it alone or with the help of your students?
- ❖ Did you share these criteria with students? If yes, was it helpful? If not, why?
- ❖ Have you introduced any activities to involve students in the process of assessment? Give examples
- ❖ How did you students respond to these activities?

In the previous session:

- ✓ **Formulating assessment success criteria** and designing assessment checklists/rubrics
- ✓ **Involving students in the process of assessment**



In this session:

- ✓ Using different types of assessment techniques in an efficient and systematic way (i.e. written/ oral/ performance) **and keeping records**
- ✓ Formulating assessment success criteria and **designing assessment checklists/rubrics**

Intended Learning Outcomes

By the end of this session you are expected to be able to:

- 1) Record results elicited from different assessment techniques
- 2) Design assessment rubrics and checklists to facilitate your recording

Consider the following :

1. Do you keep records of assessment information?
From which sources? For which reasons?
2. Who has access to these records?
3. Can record keeping be used to promote learning? If
yes how? If not, why?



Recording results from different assessment techniques.

- An enormous proportion of daily assessment may never be used for formative purposes, unless evidence is recorded
- When records are kept these usually refer to data elicited from written tests
- *Of course one cannot expect teachers to document everything that happens in a classroom!*
- However the purpose, importance, process and effective use of documentation needs to be acknowledged by teachers
- It is expected that record keeping is used for improvement (formative) purposes rather than for accountability



Recording results from different assessment techniques

- Documenting results makes them visible and sharable and thus increases the possibility for them to be used to inform teaching and learning.
- Documentation allows evidence of performance to be available for future use, interpretation and revision and it also aids in the identification of gaps in students' learning
- Documentation is also seen as an excellent tool for communicating results to intended users

Recording results from different assessment techniques

- Learning is multidimensional and cannot be adequately measured by a single technique.
- Relying on only one technique will only reflect a part of students' achievement.
- When the results from two or more assessment tasks are combined, they provide more meaningful, valid, and reliable insights into students' learning and progress thinking
- Therefore, teachers are encouraged to use a variety of assessment techniques and tasks to provide students with multiple opportunities to show what they know and can do.



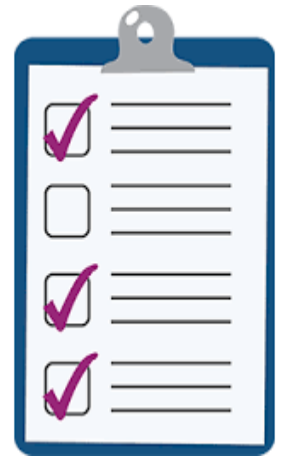
If a teacher implements different assessment tasks (i.e. presentation, questioning, performance tests, projects etc.) to evaluate students' learning, then data from these techniques also need to be documented

Recording assessment results using checklists/rubrics

- **Checklists and rubrics** are tools that state specific criteria and allow teachers and students to record information and to make judgements about what students know and can do **in relation to the intended learning outcomes (ILOs)**.
- They offer systematic ways of collecting and recording data about specific behaviors, knowledge and skills.
- They emphasize what we consider important for learning
- Clarify the criteria for consistent evaluation including recording

Checklists

- **Checklists** usually offer a yes/no format in relation to student demonstration of specific criteria.
- This is similar to a light switch; the light is either on or off.
- They may be used to record observations of an individual, a group, or a whole class.
- More emphasis on the product rather than the process followed or the quality of the work



Rubrics

- **Rubrics** use a set of criteria to evaluate a student's performance. They consist of a fixed measurement scale and detailed description of the characteristics for each level of performance.
- These descriptions focus on the **quality** of the product or performance and not the **quantity**
- They also allow students to see the progression of mastery in the development of understandings and skills.

HOLISTIC

ANALYTIC

Holistic Rubric

Single criteria rubric (one-dimensional) used to assess participants' overall achievement on an activity or item based on predefined achievement levels.

- It provides an overview of the student's work - all criteria are evaluated simultaneously
- It gives a single score for a product or performance (different levels of achievement)
- It is appropriate to assess simple tasks
- It does not provide a detailed analysis of the strengths and weaknesses of the student's performance
- Easier and faster to use but there is a greater risk of promoting the summative rather than the formative purpose

Holistic Rubric (example 1)

Level	Criterion Description
3	<ul style="list-style-type: none"><li data-bbox="253 405 1663 582">▪ Demonstrates a thorough understanding of the mathematical concepts but may contain errors that do not detract from the demonstration of understanding<li data-bbox="253 611 1750 725">▪ Indicates that the student has completed the task correctly, using mathematically sound procedures
2	<ul style="list-style-type: none"><li data-bbox="253 781 1779 895">▪ Demonstrates partial understanding of the mathematical concepts and/or procedures embodied in the task<li data-bbox="253 923 1727 1038">▪ Addresses most aspects of the task, using mathematically sound procedures<li data-bbox="253 1066 1837 1180">▪ May contain an incorrect solution but provides complete procedures, reasoning, and/or explanations<li data-bbox="253 1209 1812 1323">▪ May reflect some misunderstanding of the underlying mathematical concepts and/or procedures

Holistic Rubric (example 1) cont.

Level	Criterion Description
1	<ul style="list-style-type: none"><li data-bbox="311 297 1773 408">▪ Demonstrates only a limited understanding of the mathematical concepts and/or procedures embodied in the task<li data-bbox="311 425 1783 596">▪ May address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete<li data-bbox="311 614 1802 785">▪ Exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning<li data-bbox="311 802 1663 913">▪ Reflects a lack of essential understanding of the underlying mathematical concepts<li data-bbox="311 931 1812 1042">▪ May contain correct numerical answer(s) but required work is not provided
0	<ul style="list-style-type: none"><li data-bbox="311 1078 1895 1378">▪ Response is incorrect, irrelevant, incoherent, or contains a correct response arrived at using an obviously incorrect procedure. Although some parts may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

Assessment using a holistic rubric (example)

Activity:

What is the value of $2x^3 + 4x^2 - 3x^2 - 6x$ when $x = 3$? Show your work.

Solution student 1

$$\begin{array}{r} 2x^3 + 4x^2 - 3x^2 - 6x \\ 2 \cdot 3^3 + 4 \cdot 3^2 - 3 \cdot 3^2 - 6 \cdot 3 \\ 2 \times 27 + 4 \times 9 - 3 \times 9 - 6 \times 3 \\ 54 + 36 - 27 - 18 \\ 90 - 27 - 18 \\ 63 - 18 \\ 45 \end{array}$$

Solution student 2

$$\begin{array}{r} 27 \quad 9 \quad 9 \\ 2 \cdot 3^3 + 4 \cdot 3^2 - 3 \cdot 3^2 - 6 \cdot 3 \\ 54 + 36 - 27 - 18 \\ 3 \times 3 \times 3 \quad \quad \quad 1 \\ 59 \\ \underline{+ 36} \\ 95 \end{array}$$

Answer 74

Assessment using a holistic rubric (example) cont.

Assessment student 1	Assessment student 2
<p>Level 3: This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. Three is correctly substituted into the expression, the order of operations is correctly followed, all calculations and the final answer are correct.</p>	<p>Level 1: This response is only partially correct. Three is correctly substituted into the expression, the exponents are derived first and then the multiplication operations are completed. However, the multiplication error, $6 \cdot 3 = 12$, and the subtraction error, $27 - 12 = 16$ and the change of -27 to 27 result in an incorrect answer.</p>

Analytical Rubric

Two-dimensional rubrics with levels of achievement as columns and assessment criteria as rows. Allows you to assess participants' achievements based on multiple criteria using a single rubric.

- It gives performance levels for each criterion separately
- It is suitable for the evaluation of multidimensional concepts/goals
- It provides more specific information or comments
- It helps students to better understand the quality of the work expected.
- It takes longer to build and implement
- Provide students a clear understanding of expectations
- Communicate specific and immediate feedback
- Help students to become self-reliant, self-directed, and self-assessing learners

Designing an analytic rubric: basic steps

- Determine what exactly you are assessing
- Determine the parameters/characteristics that you will be looking at
- Describe the best work you could expect using these features This is the top category (4)
- Describe the worst acceptable work (2)
- Describe unacceptable work. This is the lowest category (1)
- Describe the interim quality work (3)

Analytic rubric example

Problem (statistics):

Two players each roll an ordinary six-sided die. Of the two numbers showing, the smaller is subtracted from the larger.

If the difference is 0, 1, or 2, player A gets 1 point.

If the difference is 3, 4, or 5, player B gets 1 point.

The game ends after 12 rounds. The player with the most points wins the game.

If you were given the choice of being Player A or Player B, which would you pick, assuming you want to win? Remember to explain all the steps you use in making your decision

Analytic rubric example cont.

Problem solution:

The sample space of the problem is depicted in the next table where the columns represents the outcomes of rolling dice 1 and the rows that of dice 2.

The shaded area represents the favourable cases.

If A is the event that the player A get 1 point after a round then,

$$P(A) = \frac{N(A)}{N(\Omega)} = \frac{24}{36} = \frac{2}{3}$$

So, its most probable for player A to win the game.

	1	2	3	4	5	6
1	0	1	2	3	4	5
2	1	0	1	2	3	4
3	2	1	0	1	2	3
4	3	2	1	0	1	2
5	4	3	2	1	0	1
6	5	4	3	2	1	0

Analytic rubric example cont.

Criteria	Level 1 (Novice)	Level 2 (Apprentice)	Level 3 (Practitioner)	Level 4 (Expert)
Problem solving approach (interpretation and strategy)	The student doesn't use a method for deriving the sample space and/or the favourable cases, or the method used is completely inappropriate.	The student uses an appropriate method for the sample space and/or the favourable cases but does not fully execute it.	The student exhibits correct interpretation of the problem. The student uses an appropriate method to derive the sample space as well as the favourable cases	The student exhibits correct interpretation of the problem and can describe the differences between cases. The student uses an elegant method (e.g. a table) to derive the sample space and the favourable cases. The method used is revealing comprehensive understanding
Accuracy and procedural skills	Many errors in calculations. Solution is not supported	Solution is accurate but the computations do not fully support the solution.	Solution is accurate with minor computational errors	Solution is accurate and the calculations demonstrate understanding of the structure of the problem
Communication (completeness, clarity, organization of information)	Description is completely missing or inadequate. Some information is presented randomly. No sign of an attempt to organize data.	Description has same aspects of the method used but is incomplete. The student attempts to organize the information but is incomplete and has many errors	Description adequately supports the method used to solve the problem. Information and data are presented in a systematic way.	Description supports the method employed in an elegant and efficient way. All necessary explanation is presented and reveal understanding of the patterns of the problem.

Application activity – Designing an assessment rubric (B4)



Application activity – Designing an assessment rubric (B4)

1. Design a rubric for each of the two (2) assessment tasks below. What kind of rubric is more appropriate for each task (i.e. holistic or analytical?)
- *Have in mind that rubrics refer to the learning objective and can be used to record the results of any kind of exercise assessing the particular objective.*

Learning Task 1

Expand the expressions:

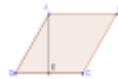
• $x-32=$

• $2a-32a+3=$

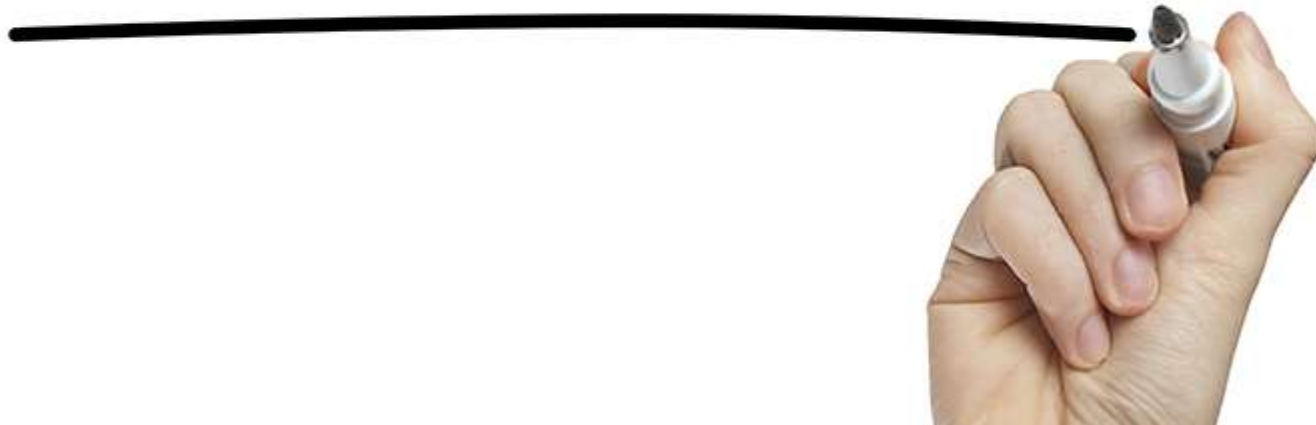
Application activity – Designing an assessment rubric (B4)

Learning Task 2

ABCD is a parallelogram where E is the midpoint of CD and $AE \perp CD$. AE is extended towards E and intersects the extension of BC towards C at Z. Prove that the quadrilateral ACZD is a rhombus.



ACTION PLAN



**Adjusting your action plan for
improvement**

- At the beginning of the session you reflected on your experience of implementing your action plan.
- Based on this reflection and on the new content presented today, adjust your action plan.
 - *Remove actions that you found difficulties implementing and/or you found ineffective*
 - *Continue actions that were helpful and were easy to implement*
 - *Add new actions that relate to this session's objectives*

You can use the sample action plan provided for ideas.



Until the next meeting:

- Implement the actions mentioned in your action plan

Thank you for your time!

For support/ enquiries please contact:

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