HOW TO USE «MADONA» AS AN EVALUATION TOOL

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Annotation:
The paper discusses how the multifunctional tool of developmental teaching «Madona» can be used as a tool for assessing the student's knowledge. A sample of the assessment tool intended for the teacher is described, which can be used both during assignment and evaluation of the work. Based on specific samples, the author tries to show how it contributes to the development of penetrating skills and values: problem solving, critical and creative thinking, communication, metacognitive skills.

Key words: developmental teaching, critical thinking, tool «Madona», metacognition.

According to the National Curriculum, the most important document in the field of general education, teaching and learning of any subject should be based on the following principles: a) teaching and learning should contribute to the activation of students' internal strengths; b) teaching and learning should contribute to the gradual construction of knowledge based on previous knowledge; c) teaching and learning should facilitate the interconnection and organization of knowledge; d) teaching and learning should ensure the mastery of learning strategies (learning to learn); e) Teaching and learning should include all three categories of knowledge: declarative, procedural and conditional. The multi-functional developmental teaching tool «Madona» proposed by the author serves to realize these requirements.

In previous articles, we noted that the tool is multifunctional and flexible. It can be used not only in teaching any subject, but also in teaching any topic or issue. Moreover, due to its multifunctionality, the mentioned tool can be used to assess the student's knowledge.

How to use formative teaching tool «Madona» to assess student knowledge? Several variations of it can be used: I represents the grading rubric and is similar to the one intended for the student, with the difference that it has four or five columns, depending on the teacher's wishes. The first column lists the evaluation criteria, and the rest lists the performance indicators according to readiness levels. It should be noted here that the rubric is useful for both formative and formative assessment. II or short form is used for individual assessment. Depending on the levels, appropriate formative feedback is necessary. III - is similar to a checklist and is used to observe students' work. Along each genus are three-level graphs, in which the teacher indicates which level corresponds to a particular student's work process or created product. The last column is intended for notes, where the teacher makes notes on the basis of which evidence he marked this or that level. These records will be used by him/her during formative assessment of the student.

Below is a sample assignment grading rubric for the Numbers and Operations theme block. The sample clearly shows the connection of the tool with the national curriculum and the requirements of the subject standard.

Thematic block - numbers and operations

Task condition: Nika's salary is 480 GEL. He pays utility bills with 1/5 of his salary, spends 3/8 on food, and keeps 1/4 for unforeseen expenses. Calculate what part of the salary will be the remaining amount, keep in mind that in addition, he needs 3 GEL daily for travel and lunch, and determine whether the amount left from the salary is divided for daily expenses?

Sample I «Madona» - Evaluation Rubric

The sample shows the distribution of points for a 10-point assessment. It should be noted here that the presented assessment rubric is general for the thematic block of numbers and operations, and the teacher can adapt it to any task of this block with minor adjustments.

criteria	Level I	Level II	Level III
Macro concept → Main data (max.1point)	Correctly determines the direction, correctly collects the main data from the task conditions.	Collects data from task conditions, but has difficulty separating essential and secondary information.	Cannot extract key data from task condition
Association (max. 1 point)	He will recall without fail the theoretical material that he will need to solve the problem.	Partially remembers the theoretical material that will be needed to solve the problem.	Cannot recall the theoretical material that will be needed to solve the problem.
dynamics (max.2 points)	To solve the problem, it correctly models the real situation through a non-negative numerical representation associated with all four actions.	Attempts to model the real situation through a non-negative numerical representation associated with all four actions, but is unable to solve the problem without assistance.	It fails to recognize the problem, it fails to model the real situation through a non-negative numerical representation associated with all four actions.
operate (max.2 points)	Demonstrates addition/subtraction, multiplication and division operations on fractions without error and interprets the results of operations using a model. Performs exact or approximate calculations using mathematical methods or visual models and evaluates the results.	Demonstrates addition/subtraction, multiplication and division operations on fractions and interprets the results of operations using a model, albeit with minor errors. Needs help performing exact or approximate calculations and evaluating results.	Cannot demonstrate addition/subtraction, multiplication and division operations on fractions and interpret the result of operations using a model. Cannot perform exact or approximate calculations by means of mathematical methods or visible models and cannot evaluate the result.
novation (max.2 points)	"discovery" is task-relevant.	Talks about "discovery", although objectively this is not news	The column is empty.
audience (max.2 points)	When presenting the work, he is confident, speaks in an understandable language, describes in detail the stages of task performance, justifies the appropriateness of the selected ways or strategies, answers the questions in detail.	He lacks self-confidence when presenting the work, speaks in understandable language, the description of the stages of the task is incomplete, there are gaps in justifying the appropriateness of the selected ways or strategies, the answers to the questions are not exhaustive.	When presenting the work, he speaks unintelligibly, cannot describe the stages of the task, cannot justify the appropriateness of the selected ways or strategies, cannot answer the questions asked.

Task performed by one of the students:

M	A fraction as part of a number. Main data: total - 480 GEL; in utility bills - 1/5; in food - 3/8; for unforeseen expenses - 1/4; daily - 3 GEL.
A	For the solution, I will need the rule of finding part of a number, performing operations on fractions, What part of one number is the other number.
D	1. We must calculate 1/5; 3/8; 1/4 parts of 480; 2. Subtract the sum of received funds from the salary in order to find out the remaining amount; 3. We need to find out what part of 480 the received number is, in order to answer the first question of the task; 4. In order to find out whether the remaining amount is divided for daily expenses, divide the resulting number by 3.
O	1) 1/5 of 480 = 480 * 1/5 = 96; 3/8 of 480 = 480 * 3/8= 180; 1/4 of 480 = = 480 * 1/4 = 120; 2) 96 + 180 + 120 = 396; 480 - 396 = 84; 3) 84/480 = 7/40 4) 84: 3 = 28 Answer: It is not divided, because there are 30 days on average in a month.
N	I found out that the remaining amount is distributed to Nika in the month of February (if it is not a leap year). It was a novelty for me that to calculate the remaining amount, it was not necessary to calculate 1/5, 3/8 and 1/4 parts of the salary separately, it was possible to calculate the remaining amount as follows: 480 – 480 * (1/5 + 3/8 + 1/4) = 480 - 480 * 33/40 = 480 – 396 = 84
A	During the presentation of the work, I was confident, I tried to fully describe each stage of the work. One of my classmates asked me a question: was it necessary to calculate 1/5, 3/8 and 1/4 parts of the salary separately for the solution? I replied that I could not calculate the remaining amount in any other way, although he argued in his presentation of his work that it was not necessary, which I have shown in the novation graph.

Below is an individual assessment tool for this student.

Sample II student:_____

M	A	D	O	N	A	Feedback
✓	✓	✓	✓	✓	✓	It's a very good work, because you have fully presented all the components.

From the rubric, it can be seen that the student is evaluated at I or the highest level according to all components. It should also be noted that in this particular case there is no need to provide extensive feedback. As for the assessment of the student with low readiness (level III), it is necessary to give a complete formative feedback indicating the ways to correct the deficiencies.

sample III

	Surname, Name	M	A	D	O	N	A	Note
1								
2								
3								

As mentioned above, sample III is a form of observation of students' work and is filled in the same way as sample II. In the note column, what teacher writes, based on what evidence he marked this or that level. He uses the mentioned record during the formative assessment of the student.

REFERENCES

1. National curriculum.
2. Imedadze I. Basics of psychology- Tbilisi. 2007
3. Nikolaishvili M. «Madona» - a universal tool for developmental learning- Materials of the IV international scientific conference, Kharkiv,2023
4. Nikolaishvili M. Developmental teaching activities using the tool «Madona» - Materials of the international scientific practical conference «Innovations in Sciences: Modern Dimension», Sumy,2023