Critical Analysis and Improvement Perspectives of the Maturity Test in Mathematics in Albania

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Abstract: - In recent years, there has been much discussion in Albania about the high school tests in mathematics. Their structure is almost the same every year. Despite the many discussions, there is no scientific study on this topic. This study aims to analyze the formulation of the test so that students feel comfortable and perform at their best. The methodology used includes several important parameters such as: types of questions/answers, distractors, language of questions, evaluation of tests using the MATH taxonomy and NISS skills; customization of the test and connection to high school mathematics objectives. The results of the study show that the test has two types of questions, closed and open, in a ratio of two to one. Distractors are not based on common errors, such as those resulting from poorly applied rules. Confusions due to ambiguity, mathematical logic, and syntactic problems are found. Almost all components of the MATH taxonomy are present where factual knowledge and fact systems predominate, followed by justification, interpretation, and understanding, but the components of information transfer and implications, conjecture, and comparison are missing. Among the Niss skills, problem solving, formulation, and resolution skills predominate, followed by mathematical thinking skills, while representational competence is missing. A weak point is the personalization of the text, where there are no questions with customizable difficulty levels. The test is in line with the objectives of the curriculum. Ultimately, this study is necessary for those who formulate admission tests and for mathematics teachers.

Key-Words: - assessment, personalization of the text, mathematical maturity test, MATH taxonomy, NISS competences, Albania.

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1 Introduction

It is essential to conduct preliminary data analysis to identify the types of questions in tests that play a crucial role in mathematics and its teaching, [1]. Item formats can change the level of cognitive complexity and the type of skills needed to solve mathematics items. Therefore, it is likely that stem item formats can affect the dimensional structure of mathematics assessments, [2].

Different question formats, such as constructed-response, multiple-choice, true/false, essay, and matching items, are used in conjunction with various item formats, such as text problems and computational items. This diversity is essential to ensure accurate measurement of the target construct, [3]. Multiple-choice and constructed-response formats are the two most used item types in educational assessments, each requiring students to provide different types of responses, [4]. Typically, a multiple-choice item presents a question followed by multiple response options, including one correct and several incorrect alternatives. In contrast, constructed-response items require students to develop their own responses, which can be either brief or detailed, depending on the objectives of the assessment, [5].

The multiple-choice format is often valued for its cost-effectiveness, as it allows for large-scale assessments with minimal use of resources. On the contrary, constructed-response items, while offering a more detailed view of students' analytical skills and understanding, entail higher costs due to the high labor effort required to evaluate and interpret responses, [5]. When constructing multiple-choice questions, it is essential to carefully assess the skills that each item can activate. In many cases, such questions are not based on a deep understanding of the content, but rather on the superficial recognition of key words or elements.

This question format may not accurately reflect the competencies that are intended to be measured. For this reason, questions must be formulated in such a way that, [6]:

When designing multiple-choice questions, it is important to carefully consider the specific competencies that each question is intended to assess. Often, this format relies more on superficial knowledge or the identification of keywords than on a thorough understanding of the content. Such an approach may not accurately reflect the competences to be assessed. For this reason, it is essential to design questions that, [6]:

- Require a more in-depth analysis of the content,
- Encourage a clear structuring of the problem situation,
- Prevent the use of inappropriate approaches or strategies.

These results can be achieved by constantly varying the structure of texts and questions, carefully choosing distractors, [7], and regularly including options such as "other" or "none of the answers are correct," to be used with adequate frequency, [6]. This approach offers valuable information on the critical competences of users and reduces the use of inappropriate strategies, [8], [9].

Effective mathematics teaching can be achieved with the correct use of mathematical content language, which includes rules, concepts, symbols, and mathematical terms. Previous research has shown that students' difficulties in using mathematical language are also attributable to the three components of semiotic systems: verbal, symbolic, and visual, [10], [11], [12]. Furthermore, individual language skills play a significant role in the achievements obtained in solving mathematical problems by many students at different levels of education, [13], [14]. Tests, tasks, and activities are resources commonly adopted in previous studies to analyze the development of mathematical language in students, [15].

For a careful evaluation of the results in mathematics, when using tests with multiple-choice questions and open-ended questions, it is also appropriate to consider the reading skills and the mastery of the mathematical language of the students, [2]. Multiple-choice questions allow multisemiotic activities, [6], [16], and they consider three groups of semiotic systems: verbal language, symbolic notations, and figural representations. Verbal language plays a fundamental role for several reasons: it has a reflexive function (it can talk about itself), it allows us to classify the real world, it expresses various perspectives of a culture, and offers a wide range of linguistic varieties, from everyday expressions to more specialized ones. Precisely for this variety, verbal language is irreplaceable, [12], [17].

The use of symbolic notation remains a controversial issue, yet it plays an essential role in organising and presenting mathematical knowledge coherently. This type of notation facilitates the understanding and practical application of concepts and procedures, rather than ensuring absolute rigour, [6], [18].

The role of figural representations is also much debated, since they require the activation of complex cognitive procedures, difficult to schematize. However, there is no doubt that students must possess the ability to interpret figurative representations, [6]. A multiple-choice question can include verbal, symbolic, and iconic elements. It is possible to develop questions aimed at verifying the competence in the use of different semiotic systems, an ability thatconsists in coordinating various sign systems, [19], [20], [21].

In the evaluation of texts, it is important to consider two parameters: the MATH taxonomy, which indicates what we want or intend to evaluate with these types of questions, and the Niss skills, which represent the skills necessary for students to answer these questions, [22]. The taxonomy called Mathematical Assessment Task Hierarchy (MATH) focuses on the skills necessary to perform a given mathematical task, [23]. Furthermore, it was designed to facilitate the creation and development of mathematical assessments, ensuring that students are tested on a variety of knowledge and skills. The categories from the MATH taxonomy are: Factual knowledge and fact systems, comprehension, routine use of procedures, information transfer, application in new situations, justifying and interpreting, implications, conjectures and comparisons, evaluation, [24], [25], [26]. This taxonomy is mainly used as an aid in the design of examinations, [24].

Mathematical skills occupy a central position in the teaching and learning process. To effectively address various tasks, students must develop solid skills along this path. These skills require students to reflect on the procedures needed or used to solve problems. Skills mathematics taken into consideration Yes they are based on the studies of various researchers, we have chosen as references main definitions proposed, [27], who include the following: Thinking mathematically - mastering mathematical modes of thought, formulating and solving mathematical problems, modeling mathematically - analyzing and building models concerning other areas, reasoning mathematically, representing mathematical entities - objects and situations, handling mathematical symbols and formalisms, communicating in, with, and about mathematics, making use of aids and tools.

Contextual factors, such as the activities performed, can play a crucial role in supporting the personalization of instruction, [28]. Research shows that personalization is designed to help students express their abilities to the best of their ability and achieve their goals by selecting appropriate instructional strategies from a wide range of options, [29]. Adapting instructional materials, through directly connecting content to students' interests or through targeted orientation towards the learner, is an effective strategy for improving learning performance, [30].

Alignment, in general, aims to ensure coherence between curriculum, teaching, and assessment, [31]. To support the achievement of learning objectives set by the curriculum, it is essential to develop assessment activities that provide clear feedback on the level of achievement of these objectives, [32], [33]. In the context of assessment, alignment refers to the degree to which a test (or a part of it) measures the same learning objectives defined by a standard or set of standards, [34], [35]. To make decisions that fairly and accurately represent student progress, it is essential that assessments are closely linked to meaningful learning objectives, such as national standards, and that they ensure a high level of validity, [35], [36].

The purpose of this study is to analyze the formulation of the test from a structural and didactic perspective, so that it is as personalized as possible for students and allows them to achieve maximum performance. The analysis is based on the theoretical framework presented and includes the following parameters:

- Structural: question/answer typology and distractors
- Teaching: MATH taxonomy-based test assessment, Niss skills, curriculum alignment,
- Linguistic: the language of open and closed questions
- Personalization: Text customization

In addition to the good work done, one of the shortcomings of the research concerns the opinions of teachers and students on the difficulty of the test.

2 Methodology

The 2021 mathematics matriculation exam, which contained a total of 33 questions, was selected for analysis. In this study, all questions in the exam were considered, without any selection based on subject matter or level of difficulty. The questions covered various areas of mathematics, including arithmetic, algebra, geometry, mathematical analysis, probability, and statistics, providing a comprehensive overview of the distribution of topics. This year's selection was made because, after the test was published, there was extensive debate and numerous complaints from teachers, students, and parents, making it important to examine its content in depth.

The methodology is based on a qualitative analysis and considers the following parameters:

- The types of questions used and the answers to multiple-choice questions. Attention is paid to distractors to avoid collateral clues.
- The language of the questions used and whether they are attributed to the three fundamental elements of the Semitic systems (verbal, symbolic, and visual). In addition, one can also check whether the questions are clear and unambiguous and whether they are well formatted.
- The test assessment, i.e., MATH taxonomy, is used to structure and design questions. Ensure a balance between the various cognitive levels and assess skills based on those of Niss.
- Personalization of the text, that is, providing appropriate strategies for each student to reach their level using the knowledge they have. Two aspects can be considered: a) the student can select between several personalized tracks based on their interests. b) Adjustment of the difficulty level

Alignment with curriculum objectives: Ensure that the content of the text corresponds to the official mathematics program for the final exam. Also, verify that all concepts, topics, and skills required by the curriculum are covered.

3 Result and Discussion

This section analyses and discusses baccalaureate tests based on the following parameters: question types, answers, and distractors; question language; MATH taxonomy categories and Niss competences; textual customisation and alignment with curriculum objectives.

Question types, answers, and distractors: There are three types of questions in the analysed baccalaureate test: closed-ended, completion, and open-ended. There are 20 questions with multiple-choice answers, 2 completion questions, and 11 open-ended questions (requiring development and reasoning). In the text, there are no yes/no, true/false, multiple choice questions, matching questions, or sequential order questions. In the multiple-choice questions, the answers are divided as follows: numerical (10), symbolic (4), verbal (3), verbal and numerical (2), and icons (1). None of the answers include the option ‘other’ or ‘none of the answers are correct’. An option that serves to avoid side effects. There are answers as illustrated in the following example, which are chosen by exception (Figure 1), without providing a concrete solution to the question.

Ordinata e pikës ku grafiku i funksionit $y = 3 + 4e^{\frac{1}{2}x}$ pret boshtin OY është:

2
3
4
7

Fig. 1: Answers chosen by exception
Source: created by the authors

“The ordinate of the point where the graph of the function $y = 3 + 4^{e^{\frac{1}{2}x}}$ intersects of the Oy axis are:
a) 2; b) 3; c) 4; d) 7”

The answers to multiple-choice questions are homonymous, i.e., the same type as the correct answer. For example, if the correct answer is a number, the distractors must be numbers. The distractors for these question types are not based on common mistakes, such as those resulting from misapplied rules or conceptual misunderstandings. Instead, the options are formulated in a similar way to prevent the correct answer from being distinguished by style or grammar. Correct answers are no longer or more detailed than distractors, as this might suggest the correct answer.

On the other hand, if we look at the distractors where we encounter weak distractors, i.e., duplicates or similar, which are immediately discarded, and others where they can be confusing. In the case of numerical answers, the options are arranged in the direction of increasing numbers, where they are arranged in a logical order, with numbers close to the correct answer. On the other hand, there are no random choices of distractors, and they do not follow a logical order. It is advisable to avoid similar distractors, i.e., repetition, because it makes the question less effective. Finally, distractors in multiple-choice questions must be well designed to accurately assess text comprehension. It is advisable to pay attention to distractors and avoid side prompts. Answers should be structured in such a way as to enable students to solve the question asked.

The language of the questions: in the analysed test, the language of the questions/answers used is attributed to the three main components of the semiotic systems: verbal, symbolic, and visual.

The language of the questions is only verbal (2 questions), verbal and symbolic (21), and verbal and visual (10). The language of the answers is: only verbal (2), only symbolic (13), only visual (1), verbal and symbolic (9), verbal + visual (1). In the language of the questions, a mixture of verbal and symbolic dominates, whereas in the answers, the symbolic semiotic system dominates.

In the questions, there is a possibility of ambiguity and random choice. For example in Figure 2:

OAB është sektor qarkor me qendër O dhe rreze r = 9 cm. Këndi qëndror AOB = 30°. Syprina e këtij sektori qarkor, e dhënë me saktësi, është:

A) 6π cm²
B) $6{,}7\pi$ cm²
C) $6{,}75\pi$ cm²
D) $13{,}5\pi$ cm²

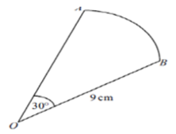

Fig. 2: Ambiguity problems and random choice
Source: created by the authors

“OAB is a circular sector with center O and radius r = 9 cm. Angle at the center AOB = 30°. The area of this circular sector, given precisely, is: A) 6π cm^2 B) 6.7π cm^2 C) 6.75π cm^2 D) 13.5π cm^2”

The most precise figure is C, where the correct answer is.

An example with mathematical logic problems (Figure 3):

Nëse a është një numër i thjeshtë dhe b është një numër çift, atëherë $k = a^2 + ab$ është:

A) ose çift ose tek;
B) gjithmonë çift;
C) gjithmonë numër i thjeshtë;
D) gjithmonë tek;

Fig. 3: Mathematical logic problems
Source: created by the authors

"If a is a prime number and b is an even number, then is:

A. Either odd or even; B) Always even; C) Always a prime number; D) Always odd"

In the example given, there is confusion found in the answers concerning the repeated use of the conjunction 'or', as well as the words 'always' and 'never', which are recommended to be avoided.

An example with syntactic problems in Figure 4:

Pista e biçikletave në një kompleks sportiv kalon nëpër shpate të pjerrëta. Ajo është modeluar sipas ekuacionit $h = t^3 - 10t^2 + 29t - 20$, ku h është lartësia mbi nivelin e tokës në metra dhe t është koha në sekonda. Gjeni:

a) Në çfarë çastesh pista është në nivelin e tokës?
b) Midis këtyre çasteve, kur është pista mbi nivelin e tokës?

Fig. 4: Syntactic problems
Source: created by the authors

"The cycle path in a complex runs along steep slopes. It is modelled according to the equation $h = t^3 - 10t^2 + 29t - 20$ where h is the height above ground level in meters and t is the time in seconds. Find: a) At what times is the track above ground level? b) Between these times, when is the track above ground level?"

Knowing that bicycles pass through the track, 'steep slopes' would be more understandable to say, 'hills or non-steep ascents and descents'; 'is modelled according to the equation' would be more understandable to say, 'is modelled according to the function h (the height of the track) which depends on the time t of its description by the cyclist'.

'h is the height above ground level' would be more comprehensible to say, "h is the height above the initial level of the track"; "is the time in seconds" would be more comprehensible to say "is the time of the route description by the cyclist"; "at what times the track is at ground level" would be more comprehensible to say "at what times the track is at its initial level $h = 0$". The resolution of (b) depends on (a), which is not recommended. Tied questions are not recommended to be split into two parts; it would be better to be in the same place where what is asked in (a) and (b).

No polysemy problems were encountered. The use of mathematical and scientific symbols in the text is correct. The quality and clarity of images and graphs are also present. The vocabulary and syntactic complexity of the questions should be unambiguous. The entire test uses second-person language, whereas it should be in the third person.

Formulating questions using the MATH taxonomy categories and Niss competences: the MATH taxonomy categories are intended to support all types of assessment in mathematics examinations. Naturally, ambiguous situations or cases may occur that do not completely fit into a single category or that may belong to several categories at the same time. The main purpose of these categories is to facilitate the creation of examination questions and to allow the examiner, through his or her own judgement, objectives, and experience, to determine the final score of a given test. Mathematical skills, according to Niss, allow, based on factual knowledge and concrete skills, to perform and formulate specific types of mathematical tasks. Let us now see which category of the MATH taxonomy the analysed test questions fall into.

Knowledge of facts and the system of facts includes the following questions: find the intersections of two half-segments on the number axis, determine the base of a given logarithm, calculate a percentage, apply the rule of three simple, determine the area of a circular sector, compare the length of two vectors, know the definition and theorem of cosine, understand the definition of congruent triangles, calculate the measure of a given angle in a hexagon from the measures of the other angles. Understanding knowledge includes activities such as, converting units from centimeters to kilometers and applying the rule of three simple, determining the ordinate of the point where the graph intersects the Oy axis, finding the graph y = -f(x-3) when the graph y = f(x) is given, analysing the geometric transformation of two figures, determining the number of roots of a fourth degree equation, and understanding the concepts of mean and amplitude. The usual procedure includes calculating probability and conditional probability, calculating an indefinite integral, and determining the composition of two functions.

Reasoning and interpretation include exercises in plane geometry, interpretation of the calculation of the cuboid formula, determination of $f(4)$ if $f(x) = 2\pi$, interpretation of the general term of a succession, interpretation of the equation of the tangent at a data point, the type of correlation presented in the figure, and interpretation of data in a graph. Applications in new contexts include modelling a cycle track with a third-degree

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equation, what the dimensions of a frame for the surface to be maximal, when the perimeter of the frame is given. Evaluation includes finding the equation of the line when the equation of the derivative passing through a point is given, finding the coordinates of a point where you need to know the formulas for finding the angular coefficient and the equation of the perpendicular.

Table 1 shows the number of questions divided according to the categories of the MATH taxonomy.

Table 1. The categories of the MATH taxonomy

Components of the MATH taxonomy	Number of items
Factual knowledge and fact systems	9
Comprehension	6
Routine use of procedures	4
Information transfer	-
Application in new situations	2
Justifying and interpreting	7
Implications, conjectures, and comparisons	-
Evaluation	2

Source: created by the authors

Table 1 shows an unbalanced distribution of questions according to the MATH taxonomy: most questions concern factual knowledge and the system of facts (9), comprehension (6) and justification of interpretation (7), while there are very few questions at higher levels such as application to new situations (2) and evaluation (2), and a total absence of the categories of information transfer and implications, hypotheses, and comparisons. This imbalance has several pedagogical implications:

Excessive focus on knowledge reproduction: Most questions measure basic knowledge and routine procedures, which may favour students who rely on rote learning, but without necessarily encouraging the development of critical or creative thinking. *Lack of development of important skills*: The lack of questions that require transfer, application to new contexts, comparison, or critical reasoning limits the development of skills that are essential for using mathematics in real-life situations, as well as for the development of logic and critical thinking. *Impact on learning outcomes*: This test structure guides students and teachers towards preparing for simple, reproducible tasks, without motivating them to develop more advanced problem-solving skills. These risks reduce the learning process to purely rote learning. *Implications for curriculum reform and personalised testing*: the analysis highlights the need for a more balanced redistribution of questions, including more tasks related to application, evaluation, and interpretation in new situations. Furthermore, the use of personalised testing can contribute to a fairer measurement of students' skills, offering tasks adapted to their level of preparation and avoiding relying solely on the reproduction of knowledge. This would bring testing closer to the skills expected in the skills-based curriculum and to international assessment practices.

In the following, we analyse where the questions in the test are placed and compare them with the Niss-defined competences. The test questions may concern one competence, several competencies, or none of them. Figure 5 is an example of a test covering several competences together:

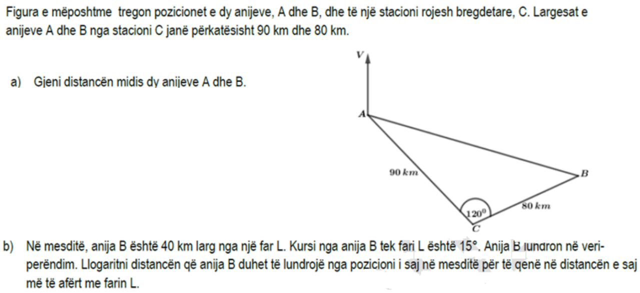

Fig. 5: Question: encountering more Niss competences

Source: created by the authors

The following figure shows the positions of two ships, A and B, and a coastguard station C. The distances of ships A and B from station C are 90 km and 80 km, respectively.

a) Find the distance between ships A and B.

b) At noon, ship B is 40 km away from lighthouse L. The course from ship B to the lighthouse is 15 degrees. Ship B sails northwest. Calculate the distance that ship B must travel from its position at noon to be at the nearest distance".

This question refers to three competences: Mathematical thinking competence: mastering ways of thinking mathematically; Problem-solving, formulation, and solution competence; Modelling competence: being able to analyse and construct mathematical models in relation to other real-life fields.

Figure 6 is an example of mathematical reasoning competence:

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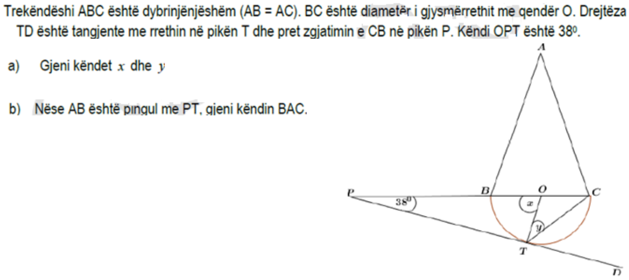

Fig. 6 : Mathematical reasoning competence
Source: created by the authors

"Triangle ABC is isosceles (AB= AC). BC is the diameter of the semicircle with center at O. The line TD is tangent to the circle at point T and intersects the extension of CB at point P. The angle OPT is 38 degrees.
(a) Find the angles x and y.
b) If AB is perpendicular to PT, find the angle BAC.
This question refers to reasoning competence: the ability to reason mathematically about plane geometry concepts.
Figure 7 is an example of symbolic and formal language competence:

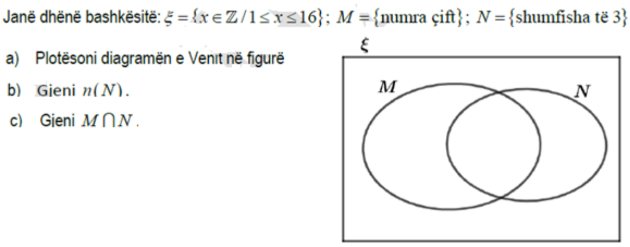

Fig. 7 : Language competence
Source: created by the authors

They are data sets: $\xi = \{x \in Z/1 \leq x \leq 16\}$; $M = \{even\, numbers\}$ $\quad N = \{multiple\ of\ 3\}$
a) Complete the Venn diagram in the figure b) Find $n(N)$ c) Find $M \cap N$

This question refers to symbolic and formal language competence: knowing how to handle symbols and the formal language of mathematics.

Overall, solving, formulating, and problem-solving skills predominate in the test, followed by mathematical thinking skills. This is followed, at approximately the same level, by symbolic and formal language skills, mathematical reasoning, and modelling skills. The test has nothing to do with representational competence, i.e., knowing how to handle different representations of mathematical problems. Communication skills and skills in the use of digital and non-digital tools are not applied in our case, as the examination is exclusively written and does not involve the use of such tools.

Personalisation of the text: a) The student can select from several tracks personalised according to his or her interests. b) Adjustment of the level of difficulty.

The test analysed revealed the following application problems: proportionality and consumption problem (fuel consumption), direct proportionality and ratios and proportions (map scale), cosine theorem (application of a trigonometry problem), object sizes and shapes (packing problems), mathematical modelling applied to motion dynamics, the calculus of probability, and application of statistics. The test questions are not related to the course of study. One does not find examples of thematic personalisation, such as sports, video games, music, technology, and computing, and analysis of feelings in a social network. No questions with personalisation difficulty levels are encountered. Exercises are provided (7), where the questions are in increasing levels of difficulty.

The arguments in favor of personalized teaching are strengthened by the findings of recent studies showing that the evolution of the assessment system in Albania is increasingly student-focused and that differentiated learning is able to increase motivation and engagement, thus confirming the effectiveness of personalized strategies in mathematics teaching, [37], [38].

Alignment with curriculum objectives: In this context, it is examined whether assessments are closely aligned with relevant learning objectives, such as national standards, and whether they ensure a high degree of validity. One of the most relevant aspects of the mathematics curriculum is the development of mathematical competencies, which are fundamental in helping the student to understand and use mathematics effectively, also in real-life situations. Once these skills have been developed, the student aims to achieve the following goals (MAS, 2016): develop logical and critical thinking; use mathematics as a tool to deal with everyday life situations; gain confidence in one's abilities, communicating clearly and accurately through mathematical language and symbols; develop imagination and deal with mathematical situations by finding solutions in different ways; and argue one's actions and conclusions. The test is in alignment with the objectives of the curriculum.

To make the analysis more comprehensive, a quantitative summary of the types of questions was also conducted. The results show that approximately 22% of the questions can be considered ambiguous, while 78% are well constructed, confirming the issues analysed above.

4 Conclusion

In Albania, the final exams in mathematics face several problems. This study illustrates several important components that help solve these difficulties. The conclusions indicate the following points:

The test has two types of questions, the standard ones, closed-ended, and open-ended, in a ratio of two to one. There are no questions like: yes/no; true/false; multiple choice questions; matching questions; and sequential order questions. The closed-ended questions are all multiple choice and homogeneous, that is, the same type with the correct answer. The distractors are not based on common errors, such as those resulting from poorly applied rules or conceptual misunderstandings. Weak distractors are encountered, that is, duplicates or similar, which must be avoided.

The language of the questions is a mixture of verbal and symbolic elements, while the symbolic semiotic system is dominant in the answers. We encounter confusions of ambiguity, mathematical logic, and syntactic problems. In open questions, the answers are linked to each other and point a) must be solved to solve point b). The entire test uses second-person language, while it should be third person. Almost all the components of the MATH taxonomy are present in the test, where Factual knowledge and fact systems predominate, followed by Justifying and interpreting, and Comprehension. Instead, the two components, Information transfer and Implications conjectures and comparisons, are missing. Instead, in the components of Niss skills, problem solving, formulation, and resolution skills predominate, followed by mathematical thinking skills. The representational skill, knowing how to manage different representations of mathematical problems, is not present in the test. In addition, communication skills and skills in the use of digital and non-digital tools are not applied in our case.

A weak point is the customization of the text, where there are no questions with customizable difficulty levels. Furthermore, the questions are not connected to the study path, and students cannot customize the topics as they wish. The test is aligned with the objectives of the curriculum, but its difficulty level is medium.

We believe that the following aspects are recommendations and a continuation of the study: Use of technical terms, it is important to evaluate whether the terms are suitable for the level of the students. Create questions about study paths and personal preferences. If the system knows the preferences of the student, it can suggest more relevant questions.

International comparisons of comparative studies can show how other countries use open-ended and closed-ended questions, as well as personalised approaches to wording, providing valuable insights into potential reforms in Albania.

Finally, it is important to provide students with the right information and create the conditions to encourage them to express themselves at their best.

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- Pepkolaj Lekë was primarily responsible for the conceptualization of the research idea and the development of the theoretical framework. He also contributed to the critical review and refinement of the manuscript to ensure the intellectual depth and coherence of the study.
- Sander Kovaçi took the lead in the collection and analysis of data, the preparation of tables and figures, and the refinement of the research methodology. He ensured the accuracy and validity of the analytical procedures used throughout the study.
- Muhammad Irfan contributed significantly to the literature review, He also took responsibility for the final editing and acted as the corresponding author in communication with the journal.

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The authors equally contributed to the present research, at all stages from the formulation of the problem to the final findings and solution.

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