



Linguistic Overload in Secondary School Textbooks: A Corpus-informed Case Study of Romanian 6th grade textbooks

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Abstract

The linguistic evaluation and validation of school textbooks can influence educational systems on multiple levels [1], including teaching and learning workloads, examination design and results, as well as student motivation and engagement. Numerous studies have emphasized the importance of aligning teaching materials with cognitive development stages to ensure that content is both accessible and engaging for students. Research on textbook readability, terminology, the interaction between linguistic and visual elements, and age-appropriate exposure has been essential in improving educational resources. However, in Romania, limited progress has been made in this area. After transitioning from a single-textbook system during the communist era to a multi-textbook system [2], there has been no comprehensive study to verify that this shift was based on rigorous interdisciplinary analysis. For over thirty years, textbooks have been developed and approved by the Romanian Ministry of Education without undergoing linguistic validation.

This study adopts a corpus-informed approach to evaluate the linguistic load of Romanian textbooks, focusing on a case study of 6th-grade textbooks for two subjects: Romanian language and mathematics. The analysis demonstrates that linguistic evaluation is crucial not only for language-based subjects but also for other disciplines. The findings reveal considerable linguistic overload, particularly regarding text readability [3] and task density, as well as content overload compared to national curriculum standards. These issues indicate that the textbooks may surpass the cognitive and linguistic abilities of students, potentially obstructing their learning and comprehension. The research underscores the necessity for a more integrated approach to textbook development in Romania, which includes linguistic validation to ensure materials are appropriate for students' cognitive levels and aligned with international pedagogical standards. Addressing these linguistic challenges will help create textbooks that are more accessible and effective across various disciplines.

Keywords: *linguistic overload in school textbooks, linguistic research based textbook design, Romanian school textbooks, curriculum development, Romanian education*

1. Introduction

The school students' academic success is influenced by a multitude of factors [4] such as the quality of teaching, classroom environment, socioeconomic background, cognitive development, and the effectiveness of didactic materials [5]. Didactic resources, whether traditional or digital, are considered the building blocks of structured education, shaping not only how knowledge is conveyed but also how students engage with and retain this knowledge. Textbooks play a central role [6] as they are the primary resource for both students and teachers, often structuring the pace and focus of the curriculum. The essential components of good textbooks include clear content organization, appropriate use of language to facilitate comprehension, alignment with curriculum standards, adaptability to various learning needs, and activities that engage students and promote critical thinking [5].

The linguistic quality of textbooks is especially important, as it directly impacts comprehension and cognitive load [7]. The language used should be accessible to the target age group, aligning with students' linguistic and cognitive development stages. When the language is too complex, it can create barriers to understanding, leading to a lack of learning motivation and reduced academic performance. This highlights the importance of conducting linguistic validation in textbook development, ensuring that the language is not only correct but also suited to the students' comprehension levels.

In Romania, where the linguistic evaluation of textbooks has been largely overlooked, the need for a rigorous, interdisciplinary approach to textbook creation and evaluation is evident. Addressing



linguistic complexity in textbooks is necessary to create effective didactic materials (traditional or digital) that enhance learning, rather than overwhelm students with unnecessary cognitive demands.

2. Relevant Studies

2.1 Linguistic Analysis of Textbooks: Why Is It Necessary?

Studies such as Berendes et al. [8] emphasize that textbooks adapted to the linguistic level of students lead to better learning outcomes, as structured texts facilitate comprehension of key concepts. Similarly, Hiebert & Pearson [9] highlight how simplified, progressively complex texts accelerate reading skill development, particularly for younger students. Research also states that clear textbooks, with accessible instructions and tasks, improve test performance [10] while Graesser et al. [11] demonstrate that clarity and cohesion in texts significantly enhance information retention.

2.2 Research on School Textbooks in Romania

In terms of textbook policy, Romania has transitioned from a single-textbook system during the communist era to an alternative-textbook model in the post-communist period. This shift has allowed the creation and approval of multiple textbooks for each grade and subject, giving schools and teachers the flexibility to choose the textbooks they find most suitable for their students. Although these textbooks are theoretically designed to follow the national curriculum, studies have revealed discrepancies, with many textbooks exceeding the curriculum requirements in various aspects [2, 12].

Previous systematic research on school textbooks in Romania has focused on two main directions: (a) the introduction and impact of digital textbook implementation or use, and (b) the analysis of history textbooks and their approach to different society-relevant topics. The availability of digital versions of traditional textbooks (2014-2015 school year, primary school) was widely embraced by the educational community, including teachers, students, decision-makers, and researchers. However, the adoption was met with skepticism. Manasia et al. [13] highlighted a divide between official support and the concerns of teachers and parents, who cited issues with infrastructure, readiness, costs, and potential negative effects on learning and health. Their study found that 62% of analyzed opinions were negative, reflecting resistance to digital textbooks. Magdaş & Drîngu [14] explored the views of 58 primary teachers and found teachers rated content positively but felt unprepared for digital tools. At the same time, concerns about the quality of digital textbooks and alignment with the national curriculum have also been raised [15]. Romanian history textbooks also faced criticism, particularly for failing to promote critical thinking and instead focusing on memorization [16].

Studies focusing on linguistic analysis or providing linguistics-related recommendations regarding Romanian school textbooks are virtually nonexistent. From this perspective, the present case study aims to underscore the importance and applicability of such analyses, particularly in shaping the creation and validation of future school resources. This need is especially critical considering the upcoming curriculum changes and soon-to-be-launched new curriculum frameworks (RO: *programe cadru*) under Romania's School Education Law 198/2023. Conducting linguistic analyses will help ensure that textbooks align not only with modern educational standards but also respond to the students' diverse learning needs, supporting readability, accessibility, and comprehensibility for all.

3. Approach

3.1. Method

In this paper, we use a corpus-informed approach, analysing a set of linguistic data organized into a corpus of school textbooks. This analysis is combined with qualitative assessments of linguistics-related textbook design elements, such as visual components. The mixed-method approach enables us not only to quantify specific linguistic features, such as word frequency and text and task readability, but also to interpret how these features might affect students' cognitive load and comprehension, drawing on evidence from previous research. The elements included in this study's textbook analysis framework (see Section 2.3) align with several components proposed by O'Keeffe [8], such as content organization, the appropriate use of language to facilitate comprehension, and alignment with curriculum standards.



3.2. Data

For this article, we use subsets of a larger corpus of school textbooks, ROTEX - the Romanian corpus of School Textbooks. The two subsets are: ROLAT-6, which includes 6th-grade textbooks of Romanian Language and Literature, and ROMAT-6, comprising 6th-grade Mathematics textbooks. ROLAT has previously served as a resource for studies examining linguistic complexity in primary school textbooks [2]. The corpus configuration consists of 8 textbooks in ROLAT-6 (published by EDP; ArtKlett; Litera; CD Press; Booklet; Corint; Paralela 45; Intuitext) and 3 textbooks in ROMAT-6 (published by Litera; Booklet; Paralela 45).

3.3. Linguistic Load in Relation to Textbooks

Linguistic load is often associated with cognitive load [7]. This means that the language used for materials that are intended to be read by a particular reader group should be adapted to minimize cognitive strain. When linguistic complexity surpasses the reader's cognitive capacity, it can result in confusion, frustration, or misinterpretation of the material. This is especially important in contexts such as education, technical writing, or legal documents, where the clarity of information is critical. In school education, the concept of linguistic load is central to the design of textbooks in many countries, particularly in national education systems where textbooks are relevant didactic instruments which shape the way students absorb, understand, and retain knowledge.

The Romanian education system follows this pattern. Despite pedagogical recommendations encouraging teachers to use textbooks as support materials and adapt their lessons with any suitable didactic resources, research indicates that few teachers in Romania move away from their disciplinary textbooks [14]. Given this, the general design of Romanian school textbooks deserves scrutiny. If the language used in educational materials is too complex or beyond the cognitive abilities of the target age group, it can have a quite undesirable effect: learning can be difficult, potentially leading, especially for students with learning difficulties, to academic failure. That is why this study proposes the following features for a linguistics-related textbook analysis framework (LTAF):

- **LTAF 1: Overall linguistic density of textbooks.** If there are too many words on a page, or if the text is dense, students may feel overwhelmed, which can lead to disengagement and reduced comprehension. It is important to balance the word count per page with opportunities for reflection and comprehension.
- **LTAF 2: Balance between linguistic versus visual elements.** Too many visual elements can be distracting and may interfere with the cognitive processing of the text. While visual aids like pictures, diagrams, and charts can support learning, they need to be well-integrated into the lesson rather than crowding the page, which could result in cognitive overload or confusion.
- **LTAF 3: Effective interplay between teaching, instruction, and evaluation tasks.** If there are too many tasks for one learning unit, students may become overwhelmed and unable to focus on mastering the content. It is important to ensure that the number of tasks is balanced and that each task contributes meaningfully to reinforcing the learning objectives without overburdening the students cognitively.
- **LTAF 4: Linguistic complexity of texts that refers to the disciplinary knowledge.** When the linguistic complexity is too high, students may struggle to understand the core concepts being taught. For instance, if literary texts use advanced language (e.g. multisyllabic words, neologisms, archaisms, long sentences, complicated syntax, poetic language, abstract concepts) that surpasses the students' reading level, or if mathematical explanations involve intricate terminology without adequate scaffolding, students may fail to grasp the subject matter effectively.
- **LTAF 5: Linguistic complexity of instructions and tasks.** This is particularly important since these elements are the core units which build and assess knowledge. If the instructions or tasks are too complicated or contain advanced language that is not familiar to the students, they may misinterpret what is being asked, leading to frustration or incomplete learning. Clear, concise, and simple instructions can aid students in focusing on the task itself rather than decoding the language.
- **LTAF 6: Use of concepts and disciplinary terminology.** In the case of school students, it is crucial to avoid too early exposure to abstract concepts since they can substantially hinder knowledge construction and learning motivation. If students are introduced to disciplinary jargon or abstract ideas prematurely, without a proper foundation or contextualization, they may become confused or demotivated, which can negatively impact their ability to engage with and retain the material.
- **LTAF 7*: Addressability, tone, and engagement.** If the language of the textbooks implies personal involvement (e.g., "Let's now think about what you see..."; "Well done!"), age and grade-



adapted, the students will feel more connected to the material and motivated to engage with the content. Personalized, encouraging language can help foster a positive learning environment, increase motivation, and make the learning experience more enjoyable for students. This feature is not analysed in this study.

- **LTAf 8: Linguistics-informed assessment of curriculum coverage.** This is a particularly interesting analysis, since it can result in the “diagnosis” of how dense the textbook is because it has exceeded the aspects included in the national curriculum for the discipline and grade. By employing linguistic and computational tools such as text mining and keyword analysis, educators and curriculum designers can identify whether the key concepts, terms, and topics required by the national curriculum are appropriately covered in the textbooks. These techniques can highlight instances where certain themes are either overemphasized, leading to unnecessary cognitive overload, or underrepresented, creating gaps in students' knowledge.

4. Analysis and Results

4.1 Linguistic Assessment of the 6th Grade Romanian Language and Literature Textbooks

The simplest and most effective indicator of linguistic density in school textbooks is the calculation of the total number of words per page (WPP). To calculate this in the present study we used two methods: (a) sampling, i.e. from each textbook, the same 6 pages (every 40 pages) were extracted and an accurate word count procedure performed via multiple processing stages (PDF split, OCR-isation / transcription, word count); since the 40th page of the last sampling batch might be non-existent, we included into the counting sample the last textbook page which had disciplinary content (i.e. not reference or index page); (b) automatic word count of the whole textbook. Figures 1 and 2 indicate the linguistic density (WPP) in the ROLAT-6 dataset. As the analysis shows, all contemporary textbooks have a moderate to high WPP index, which indicates considerable linguistic overload. The closest to the recommended WPP textbook standard for Language Arts (integrated activities: Literature, Grammar, Literary Theory, Writing), of around 250 words per page, are *EDP* and *CD Press*. The most linguistically loaded are *ArtKlett* and *Paralela 45* textbooks.

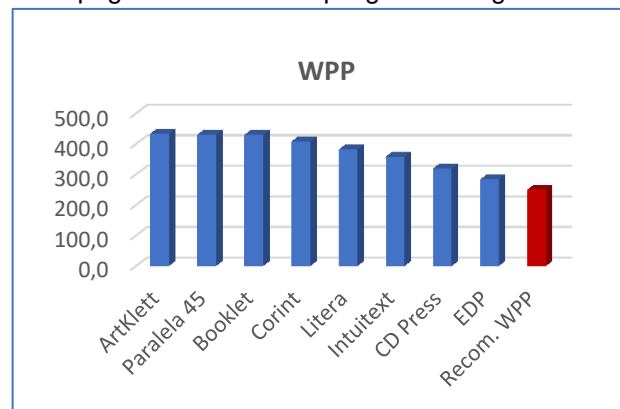


Fig. 1. Linguistic density/WPP (LTAf 1) in ROLAT-6 (b)

Textbook	WPP Samples (word count samples: pages 10, 50, 90, 130, 170, and last page)	Total no. words	WPP
EDP	405+294+434+187+264+345	58660	283.4
ArtKlett	640+258+371+370+463+473	82365	433.5
Litera	452+295+319+275+420+497	72522	381.7
CD Press	173+195+210+357+342+220	60650	319.2
Booklet	530+561+596+534+393+380	94984	429.8
Corint	504+648+644+601+443+470	90643	408.3
Paralela 45	425+378+314+368+437+367	91697	430.5
Intuitext	389+291+319+322+260+261	79215	358.4

Fig. 2. Linguistic density/WPP (LTAf 1) in ROLAT-6 (a)

The second analysis included the overall linguistic versus visual elements in each textbook. We found that all the textbooks excessively display visual elements and explanatory boxes:



	(LTAF 2)	(LTAF 3)
EDP	7/10	8/10
ArtKlett	5/10	5/10
Litera	5/10	6/10
CD Press	8/10	7/10
Booklet	4/10	5/10
Corint	5/10	6/10
Paralela 45	4/10	5/10
Intuitext	5/10	6/10

Table 1. Overall assessment of textbook content organisation (LTAF 2 & 3)

LTAF 2: Balance between linguistic versus visual elements: Most of the textbooks reviewed have either too many visual elements that interfere with understanding, or not enough visuals to support the text-heavy sections. For example, textbooks like *ArtKlett* (5/10) and *Booklet* (4/10) struggle with visual overload or lack enough meaningful visuals to break down complex information. *CD Press* performs best in this respect since it provides meaningful visual aids.

LTAF 3: Interplay between reading, instruction and evaluation: Many of the textbooks fail to offer a balanced distribution of tasks, resulting in either too many or too few exercises after reading units. Often, the reading instruction is not well-aligned with the evaluation tasks. In some cases, the reading sections are overloaded with exercises that may confuse students, or the tasks jump too quickly between different cognitive processes (reading, writing, grammar), leading to cognitive overload. In textbooks like *ArtKlett* (5/10), *Booklet* (5/10), and *Paralela 45* (5/10), there is a strong need for tasks simplification or clearer transitions between reading comprehension and grammatical exercises. *EDP*, instead, displays a more structured flow, ensuring that each reading unit has a manageable number of tasks with clear, logical connections to the skills being evaluated.

As for the linguistic complexity of the texts referring to disciplinary knowledge, we also used a sampling procedure with two reading texts from each textbook. Three readability indices were used for the assessment: Flesch Kincaid, Gunning Fog and LEMI Index. The first two have been created for the automatic readability evaluation of the texts written in English so their indices are to be used as simple indicators of readability in comparative analyses (e.g. one textbook compared to another) and not as grade-recommendation indices. The LEMI index, which is integrated into the LEMI readability platform [3], the first Romanian readability analysis tool tailored for children's literature texts, has been used in a form which is provisional. The readability formula which we now call the "LEMI Index" is still in the testing stages and several other variables need to be didactically validated using large sets of data. For this study, we have used a version of the LEMI readability index (including metrics such as ASL / Average Sentence Length, PCW / Percentage of Complex Words), WD / Word Density, TNW / Total Number of Words) which has offered promising results and has been pre-calibrated in classroom contexts [ibid.]. The design of the formula implies that the result indicates the grade level for which the text is best suited (e.g., a score of 7.34 suggests that the textbook is most appropriate for 7th-grade students or advanced 6th graders). According to the current LEMI Index, the readability for all textbooks exceeds the 6th grade level for both reading texts (LTAF 4) and instructions (LTAF 5).

Text sample analyses	Flesch Kincaid (text with Instructions)	Gunning Fog (text with Instructions)	LEMI Index (text with Instructions)
EDP 1 / EDP 2	11.74 / 14.89	16.03 / 18.96	7.34 / 8.11
ArtKlett 1 / ArtKlett 2	11.41 / 13.01	13.09 / 16.37	10.13 (16.98) / 9.03
Litera 1 / Litera 2	10.31 / 19.22	14.27 / 20.37	9.38 / 11.43 (18.10)
CD Press 1 / CD Press 2	5.59 / (17.46)	8.26 / (21.59)	7.41 / (11.77)
Booklet 1 / Booklet 2	15.89 / 17.06	21.34 / 20.46	17.07 / 12.14
Corint 1 / Corint 2	(13.57) / 18.77	(19.84) / 22.57	(13.79) / 15.41
Paralela 45 1 / Paralela 45 2	14.96 / (13.97)	19.3 / (19.67)	15.54 / (12.68)
Intuitext 1 / Intuitext 2	14.36 / (13.94)	16.73 / (18.3)	11.49 / (13.74)

Table 2. Readability sample measuring in ROLAT-6 (LTAF 4 & 5)

Some textbooks contain reading materials that are age-adapted (e.g. *EDP 1*). At the same time, the readability for the same text increases if instructions are added to the reading texts (*ArtKlett 2* and *Litera 2*). This means that, even if the text itself is not difficult to read, adding complex tasks related to the text can become extremely challenging for a 6th grader.



ROLAT	Complex topics and terminology	Overall curriculum coverage
EDP	semivocala (p. 26); vorbitorul (emițătorul) și ascultător (receptor) (p. 41); ascultătorului (receptorului); sens propriu secundar (p. 52)	10-15 % redundancy
ArtKlett	înveliș sonor (p. 28); viitorul anterior; viitorul în trecut (p. 66); timpul perfect al modului conjunctiv (p. 69); prozodic (p. 90)	35-40 % redundancy
Litera	comunicare paraverbala (p. 24); cuvântul polisemantic (p. 36); structura fonologică a cuvintelor: diftong, triftong, hiat (p. 37).	25-30 % redundancy
CD Press	superlativul relativ de superioritate (p. 125)	10-15 % redundancy
Booklet	naratorul personaj (p. 18); omonime / omofone / omografe (p. 44); modurile condițional-optativ (p. 86)	35-40 % redundancy
Corint	acordul numelui predicativ (p. 72); posibilități combinatorii ale verbului (p. 77); circumstanțialele (p. 79);	25-30 % redundancy
Paralela 45	instanțele comunicării narrative (p. 20); substantivele defective (p. 110); distih - strofa cu doua versuri (p. 163);	35-40 % redundancy
Intuitext	autorul textului narativ, povestitorul întâmplărilor (p. 49); nume predicativ (p. 81) ; actul de limbaj (p. 122).	25-30 % redundancy

Table 3. Terminology and curriculum in ROLAT-6 (LTAf 6 & 8)

The linguistics analysis of terminology reveals that numerous concepts are highly abstract, such as those in phonetics (e.g. *hiat*, *semivocală*), literary theory (e.g. *momentele povestirii*, *vocea naratorului / autorului*), grammar (*conjunctiv perfect*, *nume predicative*), and even linguistics (pragmatics: *actul de limbaj*). These topics are typically introduced at higher levels of education, particularly in high school or even university, where students possess more advanced cognitive and linguistic skills to engage with abstract thinking and complex structures. However, not all students need to master this type of information. General education is provided during the lower secondary school years, while more advanced topics are generally introduced in upper secondary education. Yet, paradoxically, these highly theoretical and abstract topics are also tested by the 8th grade National Assessment exam, which contradicts the focus of the PISA (Programme for International Student Assessment) literacy exams, designed to assess real-life competencies. Moreover, the pressure to teach complex unnecessary concepts is also captured by the comparison between textbook content and curriculum requirements. All textbooks display varying degrees of redundancy, meaning a lot more content is included in the textbooks than necessary (e.g. task repetition, items not mentioned in the curriculum): from 35-40% redundancy in *ArtKlett* and *Paralela 45* to 10-15% redundancy in *EDP* and *CD Press*.

4.2 Linguistic Assessment of the 6th Grade Mathematics Textbooks

As in the case of the Romanian Language and Literature textbooks, the mathematics textbooks leave the impression of much to be improved in point of linguistic features. In the first place, the overall linguistic load of the textbooks is extremely high (around 450 WPP). International comparisons (e.g. *Spectrum* textbooks) suggest that a typical page in a 6th-grade math textbook might display a total of approximately 100 to 250 elements per page, containing: 50 to 150 words of instructional text, 30 to 50 numbers within equations or examples, 20 to 30 symbols such as +, -, ×, ÷, =, and 2 to 3 diagrams or visual examples to explain the concepts.

Litera	Booklet	Paralela 45
Numărul natural a se divide la numărul natural b sau este divizibil cu numărul natural b , dacă există un număr natural c astfel încât a = b · c . Scriem a : b sau b a .	Implicit (analitic) , specificând o proprietate pe care o au toate elementele sale și nu o au alte elemente care nu aparțin mulțimii.	Mulțimea este o colecție de obiecte bine determinate și distincte numite elementele mulțimii (p. 13) Măsura unui unghi exterior al unui triunghi este egală cu suma măsurilor unghiurilor interioare neadiacente cu el. (p. 180)
Probabilitatea de realizare a evenimentului M , notată P(M) , este raportul dintre numărul n_x al cazurilor favorabile realizării evenimentului M și numărul n al cazurilor posibile ale experimentului.	Verifică dacă se obține o proporție în fiecare dintre situațiile: a) se schimbă mezii între ei; b) se schimbă extremii între ei; d) se înmulțesc ambii termeni ai uneia dintre rapoarte cu același număr nenul ;	Produsul a două numere întregi este un număr întreg egal cu produsul modulelor celor două numere întregi , precedat de semnul „+”, dacă cele două numere întregi sunt nenule și au același semn;
Dan are cu 60 de lei mai puțin decât Lucia. Dacă ar primi 45 de lei de la aceasta, atunci el ar avea cu 7 lei mai mult decât dublul sumei care i-a rămas Luciei . (p. 93)	Scrie cei mai mici patru multipli nenuli ai fiecăruia dintre numerele 45 și 30 și apoi determină cel mai mic multiplu comun al numerelor 45 și 30. (p. 27)	a) Scrie mulțimea A ale cărei elemente sunt simbolurile numerice și literale folosite de Mihai pentru a scrie altitudinea Vârfului Moldoveanu. c) Una dintre mulțimi... este nenumerică . (p. 14)

Table 4. Linguistic complexity examples (LTAf 2, 3 and 6) in ROMAT-6



More than that, the analysis of the balance between linguistic versus visual elements (LTAF 2) indicates a lack of focus on the core elements of learning and their explanatory support, so necessary in facilitating understanding. There are three striking linguistic features in the Romanian 6th grade Mathematics textbooks: (1) extreme linguistic and informational overload as evaluated in all LTAF general criteria (1, 2, 3, and 8); (2) overly complex texts used for both topic presentations and tasks (LTAF 4 and 5) and (3) challenging age-inappropriate terminology (LTAF 6), which is unnecessary for enhancing the students' required competences. Most of this kind of terminology should be avoided, simplified or replaced by self-explanatory terms.

The Mathematics textbooks seem to be suited for higher cognitive levels, likely targeting students who are at or above the application and analysis levels of Bloom's Taxonomy. Many exercises require students not only to recall and understand complex concepts but also to apply them in multi-step problems, analyse relationships, and solve exercises involving multiple steps or sub-problems (task-in-task). The syntactic complexity and heavy terminology further suggest that the textbooks are designed for students with advanced reading comprehension and problem-solving skills.

	LITERA	Booklet	Paralela 45
LTAF 1 normal: 300 WPP	477.7	410.8	462.9
LTAF 2 & LTAF 3	5/10 & 4/10	8/10 & 7/10	7/10 & 6/10
LTAF 4 & LTAF 5 Flesch Kincaid / Gunning Fog / LEMI Index	14.13 / 19.15 / 17.41	11.57 / 17.25 / 15.22	9.84 / 15.89 / 17.73
LTAF 6 & LTAF 8 Grade level compared to international standards	mărimi direct proporționale; câtul împărțirii câtului de la pasul 1' la noul divisor identificat; >40-50% redundancy =8th grade level	submulțime nevidă numitori cu un număr rațional pozitiv; >20-30% redundancy =7th grade level	unghiuri alterne interne; modulul produsului egal cu produsul modulelor celor doi factori; >40-50% redundancy =8th grade level

Table 5. Linguistics-related textbook analysis of 6th grade Mathematics textbooks (ROMAT-6)

5. Discussion and Conclusion

The evaluation of the linguistic features across Romanian 6th-grade textbooks in essential disciplines (i.e., Romanian Language and Literature and Mathematics), which are also evaluated through national exams, reveals a considerable amount of linguistic overload across all analysis parameters.

ROLAT (Romanian Language and Literature textbooks): When considering LTAF 1 (linguistic density), *EDP* and *CD Press* strike an optimal balance, ensuring the word-per-page ratio remains manageable for 6th graders, while textbooks such as *ArtKlett* and *Paralela 45* exhibit higher linguistic density. For the balance between linguistic and visual elements (LTAF 2), *CD Press* ranks first again, with relevant visual elements accompanying textual content, helping to simplify difficult concepts. For LTAF 3 (i.e., interplay between teaching, instruction, and evaluation tasks) *EDP* performs better compared to the other textbooks. The linguistic complexity seems to be the most problematic aspect across all textbooks: while *EDP* and *CD Press* occasionally achieve better readability scores for specific reading texts (LTAF 4), these results are often overshadowed by the more complex instructional language associated with the text (LTAF 5), which, rather than facilitating learning, adds an unnecessary layer of difficulty for students. In terms of LTAF 6 (terminology complexity), *EDP* successfully maintains a balance, by gradually introducing subject-specific terminology, ensuring that students can follow along without being overwhelmed. In contrast, *Paralela 45* introduces abstract and specialized terms with insufficient context, significantly affecting comprehension. Looking at LTAF 8 (curriculum-related redundancy index), *EDP* and *CD Press* offer minimal redundancy, focusing on clear, concise curriculum-based content. These textbooks ensure that concepts are introduced systematically, without overwhelming the learner with unnecessary repetition. In comparison, *ArtKlett* has one of the highest redundancy indexes, with repeated content that adds little value and instead risks disengaging students. Overall, *EDP* and *CD Press* emerge as the most age-appropriate textbooks for supporting student learning. They display overall linguistic density close to international norms, effective visual integration, and levels of textual complexity that are closest to age-appropriate standards. By contrast, *ArtKlett* and *Paralela 45* struggle with high linguistic density, insufficient visual aids, and redundant content.

ROMAT (Mathematics textbooks): The linguistic assessment of the 6th-grade Mathematics textbooks indicates that *Litera* is the densest textbook, with excessive text that may overwhelm students (LTAF 1), while *Booklet* is more balanced in terms of linguistic density. In terms of visual



elements, *Booklet* integrates diagrams and charts more effectively without overcrowding the page (LTAF 2), whereas *Litera* and *Paralela 45* include too many visual aids, causing cognitive overload. All three textbooks face issues with task overload, but *Booklet* scores best, offering a better balance between teaching materials and tasks (LTAF 3). *Litera* and *Paralela 45* have too many task-in-task structures. The linguistic complexity is consistently high across all textbooks, with *Litera* being the most challenging (LEMI score of 17.41), making its explanations too complex for 6th graders (LTAF 4, LTAF 5). Both *Litera* and *Paralela 45* introduce specialized terminology prematurely, complicating comprehension (LTAF 6). Additionally, all three textbooks exceed curriculum requirements by including unnecessary content, contributing to content overload (LTAF 8).

This analysis highlights the importance of integrating linguistic evaluations and recommendations into the creation, design, and validation of school textbooks. Aligning textbooks with the students' linguistic and cognitive abilities can significantly improve educational outcomes and the overall well-being of both students and teachers. Clear, age-appropriate content and structured tasks lead to better student engagement, increased motivation, and improved academic performance. Furthermore, aligning Romanian textbooks with international standards, especially in the context of Romania's School Education Law 198/2023, is vital for ensuring compatibility with global curricula and assessments. The linguistics-driven recalibration of textbooks, whether traditional or digital, is not only a crucial step toward improving comprehension and retention but can also bridge the gap between education and real-world applications, making learning more relevant and impactful.

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