

Lexicometric Analysis of the Algerian FLE School Textbook: The Case of the 4th Year Primary Curriculum

التحليل المعجمي للكتاب المدرسي الجزائري: حالة منهج السنة الرابعة ابتدائي

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• Abstract:

In the Algerian educational system context, the school textbook is a fundamental pedagogical instrument, particularly in the French language learning process. Given the evolving global landscape and the advancement in pedagogical thought, it is imperative to update both the format and the content of these textbooks. This study aims to ensure that the textbooks align with the curricular requirements and the learners' environments, facilitating the development of personal and national identities and fostering openness to global cultures. This paper presents the findings of a lexicometric analysis of the 4th-year primary French textbook, probing into the nature of its vocabulary and its capacity to convey cultural and universal values.

Keywords:

school textbook, values, lexicometry, curriculum, vocabulary.

ملخص:

في سياق النظام التعليمي الجزائري، يعد الكتاب المدرسي أداة تربوية أساسية، خاصة في عملية تعلم اللغة الفرنسية. ونظرًا للمشهد العالمي المتطور والتقدم في الفكر التربوي، فمن الضروري تحديث شكل ومحتوى هذه الكتب المدرسية. تهدف هذه الدراسة إلى التأكد من توافق الكتب المدرسية مع متطلبات المناهج وبيئات المتعلمين، مما يسهل تنمية الهويات الشخصية والوطنية وتعزيز الانفتاح على الثقافات العالمية. تعرض هذه الورقة نتائج التحليل المعجمي لكتاب اللغة الفرنسية للصف الرابع الابتدائي، حيث تبحث في طبيعة مفرداته وقدرته على نقل القيم الثقافية والعالمية.

الكلمات الرئيسية: الكتاب المدرسي، القيم، قياس المعاجم، المناهج الدراسية، المفردات.

• Introduction

Within the framework of a broader project examining Algerian school textbooks across primary, middle, and secondary education levels, this study aims to delineate the outcomes of a content analysis performed on the textbook for the fourth year of primary education. This analysis harnesses the potential of Lexico 3¹, a software tool grounded in linguistic statistics, to scrutinize the textbook's vocabulary² with a particular focus on its cultural dimensions.

The research addresses two pivotal questions:

- What characterizes the vocabulary employed in the fourth-year primary school textbook?
- Does this textbook successfully transmit cultural and universal values?

The study unfolds by first defining essential concepts that underpin the analysis. It then progresses to a comprehensive description of the textbook, culminating in a presentation of the results from the lexicometric analysis.

1. Theoretical Framework

1.2 Definition of Key Concepts

A. Lexicometry

Lexicometry is a quantitative approach to text analysis, focusing on the frequency, location, and proportion of word usage within a text. André Salem³ characterizes lexicometry as encompassing various methods designed to quantitatively describe the textual sequences that form a corpus.

The purpose of lexicometry is to provide an exhaustive, quantitative analysis of the lexicon within a given text. It involves using statistical tools to explore the content objectively, without preconceived notions. Traditional reading becomes particularly challenging with large corpora involving extensive word counts or multiple speakers, which makes lexicometric methods indispensable, particularly for contrastive analysis or complex corpus studies.

B. Text

A text is composed of a set of characters that form the basis for discourse, whether in dialogue between speakers or as an author's graphic expression

C. Lexicon

¹ The complete set of words from the text.

² A definition of this software will be provided subsequently.

³ André SALEM, professor at the University of Paris 3, Sorbonne Nouvelle, <http://www.tal.univ-paris3.fr/asalem>

The lexicon includes all potential occurrences and articulated forms that make up the lexical occurrences of a language.

D. Form

A "form," or vocable, is defined as any sequence of characters not separated by spaces, bounded by two white spaces. The absolute frequency of a form in a text is determined by counting its occurrences.

E. Lexico 3

Lexico 3 is a software tool developed by André Salem, Serge Fleury, Cédric Lamelle, and William Martinez. It facilitates contrastive and chronological analyses of graphical forms, allowing for an exploration of specificities by part, as well as factorial analysis⁴, making it an essential tool in text-based linguistic studies.

1.2 Educational Objectives as per the 2008 Orientation Law

The National Education Orientation Law (No. 08-04 of January 23, 2008) articulates the educational goals as follows:

"The mission of the Algerian school is to cultivate citizens deeply rooted in the undeniable values of the Algerian people, capable of understanding, adapting to, and influencing the world while remaining open to universal civilization." The question here is whether the textbook under analysis meets these criteria.

- According to Article 2 of the 2008 National Education Orientation Law, the French textbook must:
- Be more than a mere tool for communication.
- Support the development of identity and intellectual values.
- Encourage global openness.

2. Methodology

2.1 Textbook Identification and Description

- Title: "Mon livre de français for the 4th Year of Primary Education"
- Subject: French as a Foreign Language
- Publisher: National Office of School Publications
- Publication Years: 2014/2015
- Number of Pages : 176
- Projects: 3
- Sequences: 9
- Support Texts: 51

⁴ <http://www://cavi-univ-paris3.fr>

"Mon livre de français" is a textbook designed for the fourth-grade primary level, dedicated to teaching French as a Foreign Language. It comprises various activities and exercises specifically targeting young learners. The textbook includes 37 texts, of which eight are anonymous, covering a range of genres such as fairy tales, documentaries, and poems. The 25 identified authors include 17 French, three Belgian, three American, one Italian, and one English. Notably, there is a lack of representation of Algerian authors.

2.2 Lexicometric Analysis

2.2.1 Use of Lexico 3 Software

The Lexico 3 software provides detailed metrics on text length, the number of forms, occurrences, and hapaxes for each part of the corpus. The precision of counting is achieved by defining the appropriate form delimiters, which allows for the identification of the most frequent forms within each text. Such software functionalities are essential for deriving meaning, as frequent words contribute significantly to the lexical richness of a text.

2.2.2 Segmentation and Partitioning of the Corpus

The corpus was segmented into parts based on the textbook's structure to facilitate comparative analysis.

For example:

Part 1: Reading Workshop (p0) [from page 08 to page 13]

Part 2: Project 1 (P1), divided into three sequences: (P1-S1), (P1-S2), and (P1-S3) [from page 16 to page 59]

The segmentation allowed for a focused examination of specific sections of the textbook.

2.2.3 Analysis of Lexical Frequencies and Distributions

- Predominance of function words.
- Extensive use of the imperative mood.
- Dominance of lexical fields related to family and animals, with notable absences in areas like games and nature that are crucial for childhood education.
- Lack of representation of French cultural elements such as educational systems, holidays, and professions, suggesting a gap in the cultural dimension.

A- General Vocabulary Analysis

1- Predominance of function words

Fig.1. Words Distribution of Function and Content)



Comment: According to the corpus dictionary, sorted by decreasing frequency, the most common forms are pronouns, non-qualifying adjectives, articles, and conjunctions. A fundamental observation is that content words are relatively rare and tend to be longer, while function words are more frequent and shorter. This aligns with established linguistic principles; wherein commonly used words are often brief.

2- Exploration of Significant Words

The table below presents key lexical items ranked by descending frequency, found in the French textbook for 4th year primary students in Algeria. The most frequent word is "Mots" (Words) with 233 occurrences, followed by "Texte" (Text) with 211 occurrences. The list includes a mix of instructional words like "Écris" (Write), "Lecture" (Reading), and "Réponds" (Respond), as well as content-related words such as "Poème" (Poem), "Conte" (Tale), and "Histoire" (Story). Notably, there are several words related to writing and language learning, such as "Verbe" (Verb), "Phrases" (Sentences), and "Noms" (Names). The presence of words like "Maison" (House), "Crocodile", and "Porte" (Door) suggests a focus on everyday vocabulary and storytelling elements. The frequency of these words reflects the textbook's emphasis on language acquisition, reading comprehension, and creative expression, aligning with the pedagogical goals for this age group in French language learning.

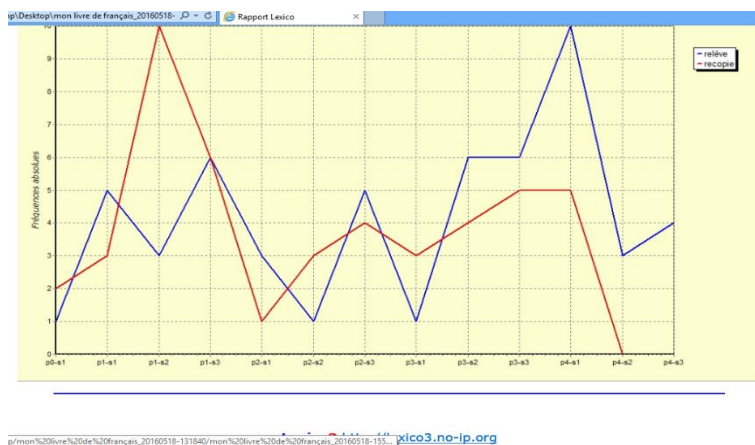
Word	Frequency	Word	Frequency	Word	Frequency
1. Mots (Words)	233	27.Fois (Times)	41	53.Repère (Marker)	30
2. Texte (Text)	211	28.Lecture (Reading)	41	54.Réponds (Respond)	30
3.Phrases (Sentences)	111	29.Parle (Speak)	41	55. Va (Go)	30

4. Écris (Write)	108	30. Petit (Small)	41	56. Sais (Know)	29
5. Phrase (Sentence)	91	31. Trouve (Find)	41	57. Temps (Time)	29
6. Poème (Poem)	87	32. Histoire (Story)	40	58. Comptine (Nursery Rhyme)	28
7. Écrire (Writing)	76	33. Affiche (Poster)	39	59. Contes (Tales)	28
8. Verbe (Verb)	71	34. Noms (Names)	39	60. Crocodile	28
9. Vers (Verses)	60	35. Suivante (Next)	39	61. Donne (Give)	28
10. Maison (House)	44	49. Découvre (Discover)	30	75. Exerce (Exercise)	23
11. Cahier (Notebook)	43	50. Faire (Do)	30	76. Paroles (Words)	23
12. Conte (Tale)	43	51. Fait (Made)	30	77. Poèmes (Poems)	23
13. Annonce (Announcement)	41	52. Grand (Big)	30	78. Porte (Door)	23

Table 1. Frequency of Significant Words

3- Extensive use of the imperative mood

Fig.2. Frequency of the Vocables "Relève / Recopie" by Sequence



Comment: The frequent use of the vocables "relève" (pick up) and "recopie" (copy) highlights the significant role of the imperative mood in the educational context, particularly within language exercises. The imperative is employed to foster a more direct and personal engagement with students, positioning the teacher's instructions as both actionable and immediate. This tone is particularly effective in tasks where students are explicitly required to respond to specific questions, reinforcing the practical application of language skills.

Fostering Literacy in Young Learners:

In addition to the imperative need to teach reading and the skills associated with literacy, written texts must be integrated into the child's familiar world from an early age. Reading acquisition is a lengthy process, and early exposure to the written word—well before formal schooling—plays a fundamental role. Children learn to read by being immersed in different types of texts, read aloud to them by adults in their environment. This early engagement with written materials lays the foundation for the development of literacy skills.

B- Dominant Lexical Fields

1- Lexical Field of Animals

Table 2. Lexical Field of Animals

Term	Frequency
Chat(s) (Cat[s])	35
Crocodile(s) (Crocodile[s])	32
Serpent (Snake)	09
Chien(s) (Dog[s])	10

Comment: The frequent appearance of the term "chat(s)" (cat) throughout the textbook demonstrates that it is central to the thematic structure of the material. The text employs a personification of animals, where they assume heroic roles, interact with students through animated dialogues, and help facilitate learning. This pedagogical strategy engages students by allowing them to explore complex views on the human-animal relationship, while also learning to recognize the physical and behavioral characteristics of various animals.

Additionally, the textbook introduces scientific concepts related to the adaptation of animals to their environments. Students are encouraged to predict how certain traits might evolve within specific ecological contexts, cultivating a scientific curiosity. The inclusion of animal themes, particularly through the figure of the cat, reflects a thoughtful integration of the natural world into the teaching process, acknowledging the pedagogical value of animals in fostering foundational knowledge.

2- Lexical Field of Family

Table 3. Lexical Field of family

Term	Frequency	Term	Frequency
Mère (Mother)	34	Enfants (Children)	51
Père (Father)	20	Tante (Aunt)	12
Garçon (Boy)	17	Cousin	8
Parents (Parents)	12	Cousine (Female Cousin)	4

Comment: This data highlights the centrality of family as a theme within the textbook's design. Upon reviewing the contexts in which these family-related terms are used, it becomes evident that the family is depicted as an ordinary, peaceful, and supportive unit. Notably, the role of women is largely confined to traditional familial roles, with the mother and grandmother figures appearing more frequently than the father. These female characters are not named and do not actively participate in the narrative's action.

The children, both boys and girls, are portrayed as equals, growing up in an environment filled with hope. The textbook emphasizes the importance of familial solidarity, portraying children as part of a cohesive family unit that engages in societal activities. This highlights the pedagogical focus on the family as a foundational social institution, fostering values of cooperation and mutual support.

C- Analysis of Proper Names

1- Diversity in the origins of names

The following table displays some of the character names used in the textbook

Table 4. Frequency and Origins of Proper Names

Name	Frequency	Origin
Amine	31	Arabic
Yasmina	23	Arabic
Benjamin	10	Jewish
Arlequin	8	Italian
Manane	14	Unknown
Samy	7	Arabic
Lina	9	Oriental
Marima	5	Unknown

Comment: The first observation drawn from this table is the use of names originating from other countries (e.g., France, Italy), which likely reflects a deliberate pedagogical choice aimed at fostering civic education and openness to diversity—an intercultural pedagogical approach. This diversity is also evident in the variety of authors selected. That said, Arabic names appear most frequently, which aligns with the cultural and national identity of the Algerian students.

2- Focus on the character "Amine"

Fig.3. Distribution of the Name "Amine" by Sequence

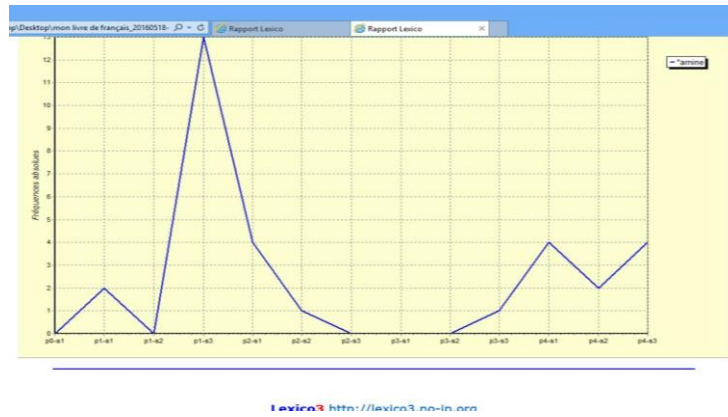


Fig.4. Distribution of the Name "Amine" by Sequence

- Longueur contexte=40
- Tri=ordre du texte
- POLE=*amine

craie - en - tête bonjour , je m'appelle ***amine** et je suis dans la classe de mademoiselle
aime ? comment est - elle ? je construis ***amine** nous présente sa maitresse d'école quelles
, *lila , passe - moi le livre , demande ***amine** . quel livre ? interroge *lila . le livre
bleu , il est sous tes cahiers , répond ***amine** . celui - ci ? tiens , le voici . recopie
ête , nous sommes dimanche 3 avril , dit ***amine** . mais non ! dit *lila , nous sommes le
paroles du chacal ? je lis où se trouve ***amine** à son réveil ? interrogatoire *amine est
uve *amine à son réveil ? interrogatoire ***amine** est en vacances au bord de la mer avec sa
ère . ce jour - là , il fait très beau . ***amine** est sur son matelas pneumatique , il flotte
omprends ? commence l'ainé des garçons . ***amine** , répond *amine . quelle est ta date de
nce l'ainé des garçons . *amine , répond ***amine** . quelle est ta date de naissance ? janvier
est ta date de naissance ? janvier , dit ***amine** . comment es - tu venu ici ? pourquoi es
es - tu venu ? c ' est une erreur , dit ***amine** . mon matelas m'a transporté jusqu ' ici
a - t - il dans cette histoire ? par qui ***amine** est - il découvert sur la plage ? qui parle
e ? qui parle le premier dans le texte : ***amine** ? les garçons ? en quelle saison est né
? les garçons ? en quelle saison est né ***amine** ? relève la phrase du texte qui le montre
s différents écoute le texte : que mange ***amine** à midi ? au parc zoologique a midi , au
rté un peu de fromage et de la galette . ***amine** , son cousin , a apporté des dattes et du
? que va manger *yasmina ? que va manger ***amine** ? que distribue la maitresse ? combien de
is répète ce que va manger *yasmina ? et ***amine** , que va - t - il manger ? combien de fromage
ucher du soleil sur les dunes de sable . ***amine** je t'invite à venir passer le mois de juillet
l joue de la phare il joue de la harpe . ***amine** voyage en famille . c ' est la première
ger mais je ne sais pas plonger , répond ***amine** je découvre et je comprends quel est le
gatives . tu aimes le chocolat au lait . ***amine** n'est pas encore arrivé . si tu lis le texte
les voyageurs descendent . sur le quai . ***amine** accueille ses cousins . je découvre et je
six heures . l ' oiseau chante sa cage . ***amine** pose les assiettes . . . la table . construis
du verbe au sujet *yasmina , *fadéla et ***amine** s ' installent devant la télévision . *yasmina
luriel , exemple : *yasmina , *fadéla et ***amine** (ils) s'installent . je m ' exerce accorde

Comment: The name "Amine" appears with notable frequency throughout the textbook, suggesting that this character occupies a central role in the narrative structure of the materials under analysis. To undertake a comprehensive analysis, it is crucial to understand the key attributes of this character and his function within the various plots. By examining the contexts in which the name "Amine" is employed, we deduce that he is depicted as a model student, a hero in many of the stories. Amine is characterized as diligent, respectful toward his teacher and peers, sociable, intellectually curious, and fond of adventure.

In essence, the character "Amine" is constructed as the archetypal "ideal" student—kind, intelligent, and autonomous. He plays an active role in his educational development, demonstrating maturity and independence, as well as offering support to peers in need. It is also worth noting the gendered nature of this representation, with the "ideal" student being male, which may imply a gender-specific perspective in the portrayal of exemplary students.

D- Thematic Analysis

1- poetry lexical field

As we saw previously, the family is a central theme in the textbook. It is portrayed as a peaceful and supportive unit, reflecting traditional values. Female roles are primarily limited to the family sphere, with a more prominent presence of maternal and grandmother figures compared to fathers. Children of both genders are depicted as equals growing up in a hopeful environment. The textbook emphasizes familial solidarity, portraying children as part of a cohesive family unit engaged in societal activities.

2- Pedagogical use of animals

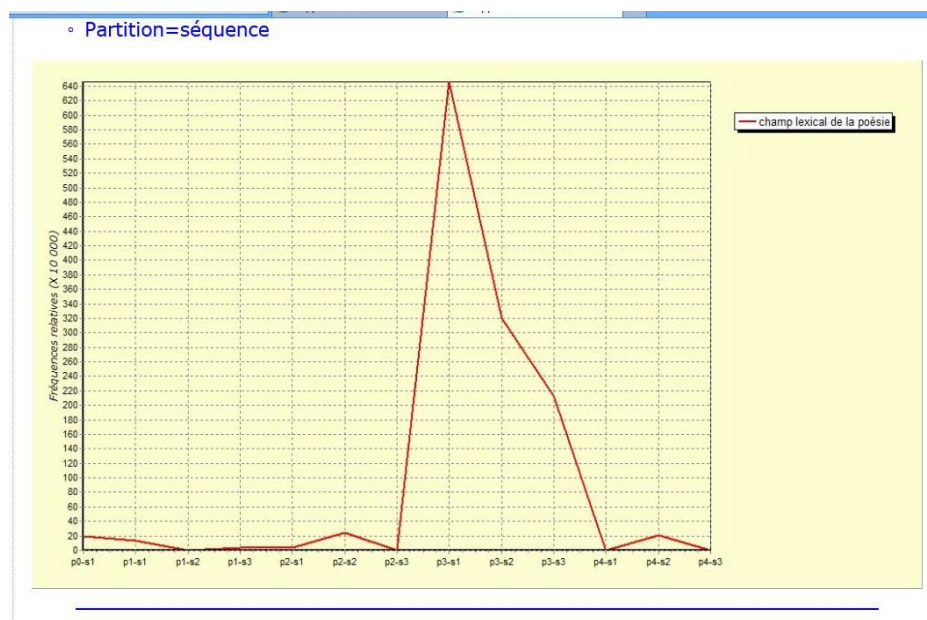
Animals, particularly cats, play a significant role in the textbook. They are used as pedagogical tools to:

- Facilitate learning through animated dialogues
- Explore human-animal relationships
- Introduce scientific concepts about adaptation to the environment
- Stimulate students' scientific curiosity

The personification of animals, where they assume heroic roles and interact with students, engages learners and helps them recognize physical and behavioral characteristics of various animals.

3- Presence of poetry lexical field

Fig.5. Distribution of the "Poetry Lexical Field"



Comment: The analysis reveals a significant concentration of terms associated with poetry in Project 3, indicating that the poetry lexical field serves as a central theme. This suggests a deliberate pedagogical choice to expose students to poetic language and forms, enhancing their linguistic development and appreciation of literary genres within the educational framework.

• Conclusion

The lexicometric analysis of the Algerian FLE (French as a Foreign Language) textbook for 4th year primary students reveals several key insights into its content and pedagogical approach. The study, conducted using Lexico 3 software, examined vocabulary frequency, distribution, and thematic elements within the textbook.

The analysis highlights three main themes: family, animals, and poetry. Family is portrayed as a central, supportive unit, reflecting traditional values but with limited representation of female roles outside the domestic sphere. Animals, particularly cats, are used as pedagogical tools to engage students, introduce scientific concepts, and stimulate curiosity. The poetry lexical field is concentrated in Project 3, indicating a deliberate effort to expose students to poetic language and literary forms.

The textbook's vocabulary is dominated by function words and imperative verbs, reflecting its instructional nature. Proper names used in the book reflect a mix of cultural origins, with Arabic names being most frequent, aligning with the Algerian context. However, the analysis also reveals some limitations, such as a lack of emphasis on cultural diversity and Algerian context, potentially missing opportunities to foster a well-rounded education that balances local identity with global awareness.

The study concludes that while the textbook provides a foundation for language acquisition, there are areas for improvement. These include incorporating more culturally diverse content, addressing thematic gaps (such as travel and tourism), providing more equitable gender representation, and including Algerian authors. By addressing these areas, the textbook could better align with the educational objectives set forth by the 2008 National Education Orientation Law, preparing students to be both rooted in their cultural values and open to global perspectives.

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