

# E-READING II: words database for reading by students from Basic Education II<sup>†</sup>

## *E-LEITURA II: banco de palavras para leitura de escolares do Ensino Fundamental II*

Original Article

Artigo Original

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### ABSTRACT

**Purpose:** To develop a database of words of high, medium and low frequency in reading for Basic Education II. **Methods:** The words were taken from the teaching material for Portuguese Language, used by the teaching network of the State of São Paulo in the 6<sup>th</sup> to the 9<sup>th</sup> year of Basic Education. Only nouns were selected. The frequency with which each word occurred was recorded and a single database was created. In order to classify the words as of high, medium and low frequency, the decision was taken to work with the distribution terciles, mean frequency and the cutoff point of the terciles. In order to ascertain whether the words of high, medium and low frequency corresponded to this classification, 224 students were assessed: G1 (6<sup>th</sup> year, n= 61); G2 (7<sup>th</sup> year, n= 44); G3 (8<sup>th</sup> year, n= 65); and G4 (9<sup>th</sup> year, n= 54). The lists of words were presented to the students for reading out loud, in two sessions: 1<sup>st</sup>) words of high and medium frequency and 2<sup>nd</sup>) words of low-frequency. **Results:** Words which encompassed the exclusion criteria, or which caused discomfort or joking on the part of the students, were excluded. The word database was made up of 1659 words and was titled 'E – LEITURA II' ('E-READING II', in English). **Conclusion:** The E-LEITURA II database is a useful resource for the professionals, as it provides a database which can be used for research, educational and clinical purposes among students of Basic Education II. The professional can choose the words according to her objectives and criteria for elaborating evaluation or intervention procedures involving reading.

### Keywords

Reading  
Assessment  
Education, Primary Schools. Secondary  
Schools  
Learning  
Educational Status

### RESUMO

**Objetivo:** Elaborar banco de palavras de alta, média e baixa frequência em leitura para o Ensino Fundamental II. **Método:** As palavras foram retiradas do material didático de Língua Portuguesa, utilizado pela rede de ensino do Estado de São Paulo do 6<sup>o</sup> ao 9<sup>o</sup> ano do Ensino Fundamental. Selecionaram-se apenas os substantivos. Foi registrada a frequência de ocorrência de cada palavra e elaborado um banco único. Para classificá-las como alta, média e baixa frequência, optou-se por trabalhar com os tercís da distribuição, frequência média e ponto de corte dos tercís. Para verificar se as palavras de alta, média e baixa frequência correspondem a essa classificação, foram avaliados 224 alunos: G1 (6<sup>o</sup> ano, n= 61); G2 (7<sup>o</sup> ano, n= 44); G3 (8<sup>o</sup> ano, n= 65); e G4 (9<sup>o</sup> ano, n= 54). As listas de palavras foram apresentadas aos escolares, para leitura, em voz alta, em duas sessões: 1<sup>a</sup>) palavras de alta e média frequência e 2<sup>a</sup>) palavras de baixa frequência. **Resultados:** Foram excluídas palavras que contemplavam os critérios de exclusão e que geravam desconforto ou piadas por parte dos alunos. O banco de palavras ficou constituído por 1659 palavras e foi denominado E – LEITURA II. **Conclusão:** O E-LEITURA II é um recurso útil para os profissionais, pois disponibiliza um banco de palavras que poderá ser utilizado para fins de pesquisa, educacionais e clínicos em escolares do Ensino Fundamental II. O profissional poderá escolher as palavras de acordo com seus objetivos e critérios para elaborar procedimentos de avaliação e intervenção com leitura.

### Descritores

Leitura  
Avaliação  
Ensino Fundamental  
Aprendizagem  
Escolaridade

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## INTRODUCTION

Reading, in the Brazilian and international scientific literature, is presented as one of the skills which is valued and required by society most. Its importance is emphasized in the individual's school, social and cultural life. It is understood as the students' principle tool for learning new concepts and is one of schools' biggest challenges<sup>(1-4)</sup>.

In the beginning of Basic Education I, the main objective is to teach the student to read. In later years, reading is shown to be necessary in order to learn the proposed contents, and becomes important in all ambits of this individual's life.

Difficulties in reading hinder the development of basic skills for mastery of the language, such as increasing vocabulary and gaining knowledge of words and writing, which will have repercussions in the development of later learning<sup>(5-12)</sup>.

The reading of words may be explained based on the Dual Route model<sup>(13,14)</sup>, the result of a process which involves phonological mediation (phonological route) or direct visual process (lexical route).

Reading by the phonological route begins with the identification of the letters in the visual analysis system, in which a code of letters is formed, which is translated by the grapheme-phoneme conversion process in chains of phonemes. In Portuguese, as it lacks an unambiguous correspondence between the letters and the phonemes, the conversion of the letters into a sequence of graphemes is a prerequisite for the process of grapheme-phoneme correspondence and for the learning of reading<sup>(15)</sup>.

In reading undertaken through the lexical route, the reader, faced with a written word, identifies the letters which make it up (visual analysis system), the information received then being transformed into a code of letters. This code is sent to the visual input lexicon, in which the corresponding visual recognition unit will be activated, resulting in the identification of a word which, in its turn, activates its meaning, filed in the semantic system – thus forming a semantic code which is responsible for activating the speech production unit, filed in the phonemic output lexicon<sup>(15)</sup>.

The only requirement in order to read using the visual route is to have seen the word for enough time to form an internal representation of it. This form is considered to be similar to what happens when we identify a picture, a number, or a signature. In the phonological route, the main requirement is to learn to use the grapheme-phoneme conversion rules<sup>(16)</sup>.

The rapid and accurate identification of the words (automatic recognition) is essential and crucial for reading comprehension. The decodification is the first step to automatic reading and has been shown to be associated with performance of the understanding of the text. Thus, poor comprehension in reading may be the result of a general problem of understanding, or of insufficient skill in identifying the written words<sup>(1,2,9,11,17-19)</sup>.

The assessment of the use of the phonological and lexical routes is undertaken through the task of reading isolated words and pseudowords out loud; in this way, it is possible to assess which route is used most by the reader<sup>(6,7,13,14)</sup>. This task is

recognized in various alphabetical languages as an efficacious method for assessing reading, and has been widely studied due to its importance in the beginning of learning<sup>(20-25)</sup>.

In Brazil, there are publications of lists of real words and pseudowords, for students in Basic Education, such as that of the study undertaken by Pinheiro<sup>(15,26)</sup>, which is much used by researchers and clinicians for assessing reading and writing, with words of high and low frequency, divided into regular, irregular and rule, varying in length for students in the first years of Basic Education. Brazilian researchers<sup>(27)</sup> have elaborated a list of words and pseudowords, entitled "Assessment of reading of words in isolation", which evaluates the oral reading of words and pseudowords which vary in regularity, lexicality, extension and frequency, for students of the old 2<sup>nd</sup> and 3<sup>rd</sup> grades.

Procedures for evaluating reading, such as the PROLEC (Evaluation of Reading Processes)<sup>(16)</sup>, which use lists of real words of differing syllabic complexities, frequency (high and low) and lengths, deriving from the list compiled by Pinheiro<sup>(26)</sup>, and pseudowords of differing syllabic complexities, respecting the syllabic patterns of regularity and length, for students of Basic Education I, are used for the evaluation of the lexical and phonological routes. In the evaluation of writing, the Pró-Ortografia (Spelling Evaluation Protocol)<sup>(28)</sup> uses, for assessing dictating, real words with regular, rule and irregular syllabic patterns, varying in length, and pseudowords with regular and rule syllabic patterns, also for students in the Basic Education cycle I.

It is necessary to assess students who are in the second cycle of Basic Education, in order to ascertain the automatization of the recognition of words, which is a requirement for understanding a text. This study is justified, given that – although various professionals use the lists of words and pseudowords for assessing the phonological and lexical routes, in Brazil, there is as yet no scientific dissemination of databases of words so that the professional may elaborate her own list, whether for assessing reading isolated words out loud, or for developing speech therapy and educational intervention procedures, depending on her criteria.

In the light of the above, this study aimed to develop a database of words of high, medium and low frequency, termed the E-LEITURA II ('E-READING II', in English) to serve as linguistic encouragement for evaluation and intervention procedures in reading among students of Basic Education II.

## METHODS

This is applied research, aiming for the development of a database of words for reading by the students of Basic Education II, termed the E-LEITURA II. Applied research aims to generate knowledge for practical application, with a view to solving already-identified problems. The undertaking of this material is part of a doctoral thesis, currently in its final stage, termed "Translation and cultural adaptation of the evaluation of the processes of reading (PROLEC-SE R) for students of Basic Education cycle II and of Senior High School Education", of the Postgraduate Program in Education, of the Faculdade de

Filosofia e Ciências, of the Universidade Estadual Paulista “Júlio de Mesquita Filho” – FFC/UNESP/Marília (SP), approved by the institution’s Ethics Committee under Opinion N. 1,125,746.

For the development of the E-LEITURA II, use was made of the teaching material of the state teaching network of São Paulo, from the 6<sup>th</sup> to the 9<sup>th</sup> year of Basic Education - Cycle II, of the four bimesters of 2013.

The student’s notebook is part of the actions called for in the “São Paulo Faz Escola” program. The content was developed by specialists in Education, based on the Official Curriculum of the State of São Paulo. This material serves as support for the curriculum proposed by the Education Department of the State of São Paulo.

Each school bimester, a kit of books is distributed, by school year, with the notebooks of the respective subjects (mathematics, Portuguese language, history, English language, geography, sciences, art and physical education). The material selected for this work was the notebook for Portuguese Language – Languages (Table 1), made up of 16 books (four per school year).

All the words from the text which form part of the teaching materials were typed into a single column in an Excel spreadsheet. After typing, only the nouns were selected, due to being a frequent class in any text, and given that nouns exercise important syntactic functions in the sentence. As it is the nucleus of the nominal syntagma, the decision was made to remain with only this class of words in this database.

All the homophone words, and those which might be understood as ambiguous, depending on the context, and which could be classified differently, were removed; for example, the Portuguese word “*andar*”, (walk, gait) which can be placed in the class of nouns, as in ‘the boy’s gait’, can also be placed in the class of verbs, as in ‘the boy walks to school’.

The noun words which can take on the role of adjectives, although as metaphors, were kept, as in the example of the word “cat”, which can be placed in the class of nouns, as in the sentence “the cat jumped over the wall”, and in the class of adjectives as a metaphor, as in the Portuguese phrase “my girlfriend is a cat” (equivalent to calling a person ‘a fox’ in English).

The written words taken from other languages, such as ‘games’ and ‘show’, for example, were removed, as were abbreviations (‘CD’ for ‘compact disc’). Also excluded were adverbs, adverbial locutions, prepositional locutions, adjectives,

months of the year, numerals and augmentative and diminutive words, as well as slang and words made through juxtaposition. Only words which were made up through agglutination and homonymous words of the homophone type (written differently, although the decodification is the same) were kept.

The words in the augmentative or diminutive, synthetic degree, when suffixes are used, were excluded when they took the regular form, as in the example of *boné* – *bonezinho* (cap – little cap), or *carro* – *carrão* (car – big car). The irregular diminutives and augmentatives, which are constructed with other suffixes, were kept, as in the examples of *palacete* (mansion) and *ribeirão* (creek).

As in Brazilian Portuguese the dominant gender is masculine, when words were presented in the feminine and masculine, the words in the feminine were excluded, although added to the word in the masculine. If the same word was presented both in the plural and singular, the words written in the plural were counted in the singular and the plural forms removed from the database. The same occurred with words which only appeared in the feminine; these were transformed into the masculine. Feminine words were only kept if there would be a change in meaning – that is, if different words were used for representing gender, such as cow → bull, or prince → princess, for example. Words which only appeared in the plural, whether masculine or feminine, were transformed into masculine singular. If the word – upon being changed from the plural into the singular – took on a homonymous homograph or homonymous perfect form, or furthermore, offered any type of ambiguity it was excluded from the database.

After this selection process, all the words which appeared in the material were counted, so as to survey their frequency of occurrence in each school year. The spreadsheets were organized by school year and were sent to a statistician so as to analyze which words were common to all years, thus creating a single database of words for Basic Education II.

In order to classify the words as high, medium and low frequency, the decision was made to work with the terciles of distribution, and also with the mean frequency and the cutoff point of the terciles, due to the frequencies which are found close to the center. In choosing to work only with high and low frequency, for example, a frequency of 48% would be classified as low, and one of 52% as high, although both are very close – not achieving the proposed objective.

**Table 1.** Presentation of the material used for extracting the words for the Words Database

School year	Material
5 <sup>th</sup> grade/6 <sup>th</sup> year	Support Material for the Basic Education II Curriculum. Student’s Notebook: Portuguese Language – languages, basic education. São Paulo (State). Department of Education 1 <sup>st</sup> . ed. Volumes 1, 2, 3 and 4. São Paulo, SEE, 2013.
6 <sup>th</sup> grade/7 <sup>th</sup> year	Support Material for the Basic Education II Curriculum. Student’s Notebook: Portuguese Language – languages, basic education. São Paulo (State). Department of Education 1 <sup>st</sup> . ed. Volumes 1, 2, 3 and 4. São Paulo, SEE, 2013.
7 <sup>th</sup> grade/8 <sup>th</sup> year	Support Material for the Basic Education II Curriculum. Student’s Notebook: Portuguese Language – languages, basic education. São Paulo (State). Department of Education 1 <sup>st</sup> . ed. Volumes 1, 2, 3 and 4. São Paulo, SEE, 2013.
8 <sup>th</sup> grade/9 <sup>th</sup> year	Support Material for the Basic Education II Curriculum. Student’s Notebook: Portuguese Language – languages, basic education. São Paulo (State). Department of Education 1 <sup>st</sup> . ed. Volumes 1, 2, 3 and 4. São Paulo, SEE, 2013.

Table 2 presents the values based on the cutoff point of the terciles for the number of times that each word can appear in order to be considered to be of high, medium or low frequency.

Based on this cutoff point, the number of words for each type of frequency for Basic Education II is presented below:

- High-frequency: 72 words;
- Medium frequency: 265 words;
- Low-frequency: 1330 words.

## Participants

A total of 224 students were assessed, from the 6<sup>th</sup> to the 9<sup>th</sup> years of Basic Education II, from three state public schools from a town in the nonmetropolitan region of São Paulo: G1) 6<sup>th</sup> year (n= 61); G2) 7<sup>th</sup> year (n= 44); G3) 8<sup>th</sup> year (n= 65); and G4) 9<sup>th</sup> year (n= 54).

As the statistics for this study are descriptive, with percentages of correct readings of each word, and analytical, because it is possible to compare this percentage relative to the words with low-frequency and with those of medium and high frequency, the minimum number of 40 students per school year was specified for ascertaining whether the words of high, medium and low frequency genuinely correspond to this classification.

## Procedures

- Signing of the Terms of Informed Consent by those responsible for the students;
- Signing of the Terms of Assent by the students assessed;
- Presentation of the list of words in the E-LEITURA II database for reading out loud.

The lists of words of high, medium and low frequency, from the E-LEITURA II database, were presented to the students, on sulphite paper, A4 size, using the Times New Roman font, size 14, in lowercase letters. Each page presented an average of 72 words, which were read out loud, one at a time, by the student. This procedure was undertaken individually in two sessions, on separate days: 1<sup>st</sup>) reading of words of high and medium frequency, lasting an average of 20 minutes, and 2<sup>nd</sup>) reading of low-frequency words, lasting an average of 30 minutes. The mean duration of the two sessions was 50 minutes. Prior to reading each list of words, the student received an explanation of whether the words were of high, medium or low frequency; in particular, for those of low-frequency, it was explained to the student that she might encounter words which she had rarely or never seen before and

that, therefore, she should not stop her reading for the researcher to tell her whether she had read the word correctly or not.

## Analysis of the results

The statistical analysis was undertaken using the STATA/SE program (version 12.1), based on the number of correct readings for each word evaluated. The confidence interval calculation was undertaken (CI 95%), indicating the accuracy of the results.

## RESULTS

After the evaluation of the reading of the words of high, medium and low frequency, upon observing the students' behavior, it was noted that some words fell within the exclusion criteria, and the others caused problems in understanding, or discomfort on the part of the students. Therefore, the following words were removed from the database:

- High-frequency: *sexo* (sex);
- Low-frequency: *face* (the students pronounced the Portuguese word 'face' as they would the English word 'face', deriving from 'Facebook'), *poste* (the present subjunctive of the verb 'postar', to post), 'desconstrução' (meaning 'deconstruction', this word had been typed with a letter 's' missing), *colher* (which in Portuguese is both a verb, meaning 'to gather', and a noun, meaning 'spoon'), *expectativa* (the word was typed twice), and *varão* (male) (noun and adjective).

After the exclusion of these words, the lists of high, medium and low frequency were constituted by:

- High frequency: 71 words (Appendix A);
- Medium frequency: 265 words (Appendix B);
- Low frequency: 1323 words (Appendix C).

The lists of words are presented in Appendices. The words are presented in alphabetical order, with their respective means, standard deviation and confidence interval (CI 95%).

Table 3 presents the percentage of correct readings of the high frequency words, and some examples. The word with the fewest correct readings on the high frequency list was "*concurso*" (competition), with 94.6% (CI 95% 91.7-97.6).

The confidence interval indicates the results' accuracy. With 95% confidence, the interval between 91.7-97.6 for the word "*concurso*", on the list of high-frequency words for students in Basic Education II, covers the true difference of the proportions, that is, that the population mean for Basic Education II is within this interval.

Table 4 presents the percentage of correct readings of the medium frequency words for Basic Education, and some examples of words. The word with the fewest correct readings on the list of medium frequency words was "*condômino*" ('co-owner'), with 33.8% (CI 95% 27.5-40.1), followed by the word "*colibri*" ('hummingbird') with 67.6% (CI 95% 61.4-73.8).

Table 5 presents the percentage of correct readings of the low frequency words for Basic Education II, with some examples.

**Table 2.** Distribution based on the cutoff point of the terciles for the frequency of occurrence of the words in the E-LEITURA II database

	Basic Education II
High frequency	16-91 times
Medium frequency	5-15 times
Low frequency	1-4 times



**Table 3.** Presentation of the percentage of correct readings of the high frequency words in the E-LEITURA II database

Percentage of correct readings of high frequency words	n (%)	Examples
100%	42 (59.2)	<i>Ação</i> (action), <i>aluno</i> (student), <i>animal</i> (animal), <i>cor</i> (color), <i>educação</i> (education), <i>garoto</i> (boy), <i>hora</i> (hour), <i>mesa</i> (table), <i>situação</i> (situation), <i>tempo</i> (time), <i>tio</i> (uncle)
97% to 99%	25 (35.2)	<i>Aula</i> (lesson), <i>bairro</i> (neighborhood), <i>classe</i> (class), <i>coração</i> (heart), <i>escola</i> (school), <i>gente</i> (people), <i>jornal</i> (newspaper), <i>palavra</i> (word), <i>produto</i> (product), <i>relação</i> (relationship), <i>vez</i> (turn, as in 'it's my turn now')
< 96%	4 (5.6)	<i>Autor</i> (author), <i>biblioteca</i> (library), <i>concurso</i> (competition), <i>problema</i> (problem)
Total	71 (100.0)	-

**Table 4.** Presentation of the percentage of correct readings of the medium frequency words of the E-LEITURA II database

Percentage of correct readings of words of medium frequency	n (%)	Examples
100%	49 (18.4%)	<i>Amizade</i> (friendship), <i>ar</i> (air), <i>caneta</i> (pen), <i>defeito</i> (defect), <i>esporte</i> (sport), <i>formiga</i> (ant), <i>leitura</i> (reading), <i>mar</i> (sea), <i>natureza</i> (nature), <i>obra</i> (a work), <i>praça</i> (town square), <i>quilo</i> (kilo)
97% to 99%	162 (61.1%)	<i>Artigo</i> (article), <i>comprador</i> (buyer), <i>insegurança</i> (uncertainty), <i>padrão</i> (pattern), <i>consequência</i> (consequence), <i>sociedade</i> (society), <i>característica</i> (characteristic), <i>dinheiro</i> (money), <i>orientação</i> (guidance), <i>povo</i> (a people), <i>xícara</i> (cup)
< 96%	54 (20.3)	<i>Condômino</i> (co-owner), <i>colibri</i> (hummingbird), <i>maço</i> (packet), <i>fósforo</i> (match), <i>gincana</i> (children's sports day), <i>riso</i> (laughter), <i>crônica</i> (chronicle), <i>termo</i> (term), <i>embarcação</i> (embarkation)
Total	265 (100.0)	-

**Table 5.** Presentation of the percentage of correct readings of the low frequency words of the E-LEITURA II database

Percentage of correct readings of low frequency words	n (%)	Examples
100%	53 (4%)	<i>Armário</i> (cupboard), <i>brigadeiro</i> (brigadier), <i>chapéu</i> (hat), <i>cruzamento</i> (crossroad), <i>foto</i> (photo), <i>hospital</i> (hospital), <i>prazer</i> (pleasure), <i>rainha</i> (queen), <i>sabedoria</i> (knowledge)
97% to 99%	565 (42.7%)	<i>Admiração</i> (wonder), <i>bule</i> (tea or coffee pot), <i>coleccionador</i> (collector), <i>viveiro</i> (nursery for plants or animals), <i>bloco</i> (block), <i>virtude</i> (virtue), <i>atração</i> (attraction), <i>tubo</i> (tube), <i>muralha</i> (wall), <i>prolongamento</i> (prolongation), <i>sequência</i> (sequence), <i>queimadura</i> (a burn)
96 to 80%	663 (50. in 1%)	<i>Curral</i> (barn), <i>acne</i> (acne), <i>cera</i> (wax), <i>tese</i> (theory), <i>canela</i> (shin), <i>contratação</i> (recruitment), <i>incursão</i> (raid), <i>fisiologia</i> (physiology), <i>flerte</i> (flirt), <i>túnel</i> (tunnel)
79 to 60%	36 (2.7%)	<i>Êxodo</i> (exodus), <i>quimera</i> (a pipe dream), <i>metrô</i> (metro), <i>libelo</i> (slander), <i>ortopedia</i> (orthopedics), <i>tímpano</i> (eardrum), <i>chofer</i> (driver), <i>arraial</i> (festival)
< 59%	6 (0.4%)	<i>Ímpeto</i> (impetus), <i>gigolô</i> (gigolo), <i>orixá</i> (orisha)
Total	1323 (100.0)	-

The word with the fewest correct readings on the low frequency list was the word “ímpeto” (‘impetus’) with 42.7% (CI 95% 36.1-49.3), followed by the word “gigolô” with 52.3% (CI 95% 45.6-58.9) and “orixá” (‘orisha’, from the Yoruba religion) with 53.6% (CI 95% 47-60.3).

Based on these results, it may be observed that words of high, medium and low frequency genuinely correspond to this classification, although each word presents its own level of difficulty, as presented in appendices through mean, standard deviation and confidence interval. Among these, the researcher/professional can choose the word which best fits with her criteria and objective.

## DISCUSSION

The creation of the E-LEITURA II word database was based on the need to develop lists of words of high and low frequency for the assessment of students of Basic Education II, considering that, at the time of writing, the authors are not

aware of the scientific publishing of a database of words such that Brazilian professionals can elaborate and use their own lists.

In Brazil, the cognitive evaluation of reading has been mainly undertaken through the use of ready-made lists which vary in terms of contrasting psycholinguistic characteristics such as regularity, length and frequency, as observed in studies undertaken in Brazil<sup>(15,16,26-28)</sup>.

The reading of words from these lists, generally undertaken out loud, provides the following information: (1) effects of the variation in the number of letters (length); (2) effects of variation of levels of familiarity with words on the reading (frequency); (3) involvement of the semantic process in the reading; and (4) involvement of the grapheme-phoneme conversion process in the retrieval of the pronunciation<sup>(21,22)</sup>.

According to one Brazilian study<sup>(22)</sup>, a list of words for assessing the use of the phonological and lexical routes over the course of the child's development must, firstly, match the words at the level of frequency, that is, a list of words must

contain the same number of frequent and non-frequent words, an equal number of regular and irregular words, and – within each level of frequency and regularity – there must be the same number of short and long words.

During the elaboration of the E-LEITURA II database, the following criteria were considered: 1) classification of the words into high, medium and low frequency; 2) words which might be considered to be ambiguous, depending on the context, were not included; and 3) verification relating to the sensitivity of the classification of the words. It was possible to respond to these three issues based on the partnership between the professionals from the area of speech therapy, education (Arts) and the exact sciences (statistics).

It is emphasized that the reading of all the words of the E-LEITURA II database was undertaken for ascertaining the sensitivity of the classification of the words, that is, to check whether the words of high, medium and low frequency genuinely correspond to this classification – as well as in order to make it possible to observe which words caused discomfort or which fell within the exclusion criteria, their application in educational and clinical practice not being viable.

The idea of creating the E-LEITURA II database is to provide researchers and clinicians with a database of words for students of Basic Education II which can be used as linguistic encouragement for procedures of assessment and intervention. The undertaking of these procedures is important as – as observed in one Brazilian study<sup>(29)</sup> – the students who are identified as having difficulty in understanding reading, who are in the later years of this cycle, present a result in reading which is below that of younger students (from the final years of Basic Education I). The correlations found show that these students, although having less competence, use resources involving cognitive skills in their reading, so as to achieve comprehension; it follows that the cognitive skills of reading must be evaluated and encouraged.

In contrast, one Brazilian study<sup>(30)</sup> undertaken with students from the 3<sup>rd</sup> to 7<sup>th</sup> years with good academic performance, identified a reduction in the time for reading texts as educational level advances, as well as the least time spent reading texts with short words, evidencing the influence of the words' size, and the text's syntactic complexity, on the time taken to do the reading. The simpler the syntactic structuring, the less time is taken to read the text.

It is necessary to elaborate instruments which make it possible to assess reading skills in students in Basic Education II, in order for the professionals/researcher to possess the necessary, validated instruments for undertaking the evaluation, and to make therapeutic reasoning possible, based on the findings of the assessment, thus allowing efficacious interventions.

As observed in the results of the present study, each word – regardless of the list to which it belongs – presents its own level of difficulty, and the researcher/professional can choose those which best answer objectives and criteria (for example, syllabic complexity, length of the word, etc.).

It is, however, necessary to stress this study's limitations as, due to having been undertaken in a city in the nonmetropolitan region of the State of São Paulo, due to the regionalism presented, both in our state as in other states and cities of Brazil, the words which were considered of low frequency for this study may not necessarily be considered of low frequency in other regions of Brazil; the same is true for the words of high and medium frequency. It is necessary, furthermore, to take into account that the teaching material used for elaborating the database was provided by the government of the State of São Paulo – this material not being used in the other states. It is necessary, therefore, to undertake a broader study in all the regions of Brazil.

## FINAL CONSIDERATIONS

The E-LEITURA II database is a useful resource for the professionals, as it provides – free of charge – for the first time, in the Brazilian context, a database with a wide range of words (classified as high, medium and low frequency) which can be used for the purposes of educational and clinical research with students from Basic Education II. Based on the E-LEITURA II database, the professional can choose the words according to her objectives and criteria. As a result, it is anticipated that the E-LEITURA II database may serve as linguistic encouragement for procedures of assessment and intervention with reading in students of Basic Education II.

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### Author contributions

AMO elaborated the project, the word database, selected the participants, collected and analyzed the data, compiled the bibliography and wrote the article; SAC supervised the study and contributed in the analysis and discussion of the data and in the elaboration of the article.

**Appendix A.** Database of words for reading by students of Basic Education II - E-LEITURA II – high frequency words

<b>LIST OF HIGH FREQUENCY WORDS E-LEITURA II</b>				
<b>Words</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>95% Confidence Interval</b>	
ação	100	0.000	-	-
água	100	0.000	-	-
aluno	100	0.000	-	-
amor	100	0.000	-	-
animal	100	0.000	-	-
ano	100	0.000	-	-
atividade	100	0.000	-	-
aula	98.7	0.008	97.1	100
autor	96.0	0.013	93.4	98.6
bairro	98.7	0.008	97.1	100
biblioteca	96.9	0.012	94.6	99.2
carta	100	0.000	-	-
cidade	100	0.000	-	-
classe	99.1	0.006	97.9	100
coisa	99.6	0.004	98.7	100
colega	98.7	0.008	97.1	100
concurso	94.6	0.015	91.7	97.6
cor	100	0.000	-	-
coração	99.1	0.006	97.9	100
criança	100	0.000	-	-
dia	100	0.000	-	-
educação	100	0.000	-	-
empresa	98.7	0.008	97.1	100
escola	99.1	0.006	97.9	100
família	100	0.000	-	-
filho	100	0.000	-	-
fim	100	0.000	-	-
garoto	100	0.000	-	-
gente	99.1	0.006	97.9	100
história	100	0.000	-	-
hora	100	0.000	-	-
ideia	97.3	0.011	95.2	99.5
imagem	100	0.000	-	-
irmão	99.6	0.004	98.7	100
jeito	100	0.000	-	-
jornal	99.6	0.004	98.7	100
lado	100	0.000	-	-
lugar	100	0.000	-	-
mãe	99.6	0.004	98.7	100
mão	99.6	0.004	98.7	100
menino	100	0.000	-	-
mesa	100	0.000	-	-
modo	99.6	0.004	98.7	100
mundo	100	0.000	-	-
nome	100	0.000	-	-
notícia	100	0.000	-	-
pai	100	0.000	-	-
palavra	99.6	0.004	98.7	100
papel	100	0.000	-	-
pessoa	100	0.000	-	-
poder	99.1	0.006	97.9	100
problema	96	0.013	93.4	98.6
produto	98.7	0.008	97.1	100



## Appendix A. Continued...

LIST OF HIGH FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
professor	99.6	0.004	98.7	100
questão	99.6	0.004	98.7	100
raça	97.8	0.010	95.8	99.7
relação	99.1	0.006	97.9	100
roupa	100	0.000	-	-
rua	100	0.000	-	-
sala	100	0.000	-	-
semana	100	0.000	-	-
situação	100	0.000	-	-
tarefa	100	0.000	-	-
tempo	100	0.000	-	-
texto	100	0.000	-	-
tio	100	0.000	-	-
tipo	99.6	0.004	98.7	100
universidade	100	0.000	-	-
verdade	99.6	0.004	98.7	100
vez	99.1	0.006	97.9	100
vida	100	0.000	-	-

**Appendix B.** Database of words for reading by students of Basic Education II - E-LEITURA II – medium frequency words

<b>LIST OF MEDIUM FREQUENCY WORDS E-LEITURA II</b>				
<b>Words</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>95% Confidence Interval</b>	
academia	99.5	0.005	98.7	100
acontecimento	98.6	0.008	97.1	100
açúcar	100	0.000	-	-
adolescência	93.7	0.016	90.5	96.9
aeroporto	97.7	0.010	95.8	99.7
altura	99.5	0.005	98.7	100
ambiente	99.1	0.006	97.8	100
amigo	99.5	0.005	98.7	100
amizade	100	0.000	-	-
ar	100	0.000	-	-
área	89.6	0.020	85.6	93.7
arte	100	0.000	-	-
artigo	97.3	0.011	95.1	99.4
árvore	100	0.000	-	-
aspecto	91.9	0.018	88.3	95.5
atenção	99.5	0.005	98.7	100
atitude	98.6	0.008	97.1	100
avenida	98.6	0.008	97.1	100
avestruz	99.5	0.005	98.7	100
avião	100	0.000	-	-
avô	93.2	0.017	89.9	96.6
boi	99.5	0.005	98.7	100
botão	97.3	0.011	95.1	99.4
cabelo	98.6	0.008	97.1	100
cachorro	100	0.000	-	-
cadeira	96.8	0.012	94.5	99.2
camisa	97.3	0.011	95.1	99.4
campanha	98.2	0.009	96.4	100
caneta	100	0.000	-	-
capitão	98.2	0.009	96.4	100
característica	99.1	0.006	97.8	100
cargo	98.6	0.008	97.1	100
carro	100	0.000	-	-
casal	95.9	0.013	93.3	98.6
cena	99.1	0.006	97.8	100
centro	99.1	0.006	97.8	100
certeza	99.1	0.006	97.8	100
céu	100	0.000	-	-
chance	99.5	0.005	98.7	100
chão	100	0.000	-	-
chefe	98.2	0.009	96.4	100
cidadania	96.8	0.012	94.5	99.2
cidadão	98.2	0.009	96.4	100
ciência	98.2	0.009	96.4	100
cigarra	98.2	0.009	96.4	100
cigarro	99.1	0.006	97.8	100
circo	99.1	0.006	97.8	100
cliente	99.5	0.005	98.7	100
clube	98.6	0.008	97.1	100
colibri	67.6	0.031	61.4	73.8
comportamento	98.6	0.008	97.1	100
comprador	97.3	0.011	95.1	99.4
computador	99.5	0.005	98.7	100

## Appendix B. Continued...

LIST OF MEDIUM FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
comunicação	99.1	0.006	97.8	100
comunidade	99.1	0.006	97.8	100
conceito	98.6	0.008	97.1	100
condição	99.5	0.005	98.7	100
condômino	33.8	0.032	27.5	40.1
conexão	98.6	0.008	97.1	100
conhecimento	99.5	0.005	98.7	100
conjunto	99.1	0.006	97.8	100
consciência	96.8	0.012	94.5	99.2
consequência	97.7	0.010	95.8	99.7
contexto	98.6	0.008	97.1	100
copo	98.2	0.009	96.4	100
corpo	100	0.000	-	-
córrego	85.1	0.024	80.4	89.9
costa	99.5	0.005	98.7	100
criação	95.9	0.013	93.3	98.6
crônica	96.4	0.013	93.9	98.9
cultura	95.5	0.014	92.7	98.2
curiosidade	96.4	0.013	93.9	98.9
década	95.9	0.013	93.3	98.6
decisão	96.8	0.012	94.5	99.2
defeito	100	0.000	-	-
defesa	98.6	0.008	97.1	100
desenvolvimento	98.2	0.009	96.4	100
despesa	83.8	0.025	78.9	88.7
diferença	97.3	0.011	95.1	99.4
dificuldade	99.1	0.006	97.8	100
dinheiro	99.5	0.005	98.7	100
diretor	98.2	0.009	96.4	100
discussão	94.1	0.016	91	97.3
dono	100	0.000	-	-
dor	100	0.000	-	-
droga	99.1	0.006	97.8	100
dúvida	95.9	0.013	93.3	98.6
efeito	99.1	0.006	97.8	100
embarcação	95.9	0.013	93.3	98.6
época	98.2	0.009	96.4	100
equipe	99.1	0.006	97.8	100
escritor	98.2	0.009	96.4	100
espetáculo	95.9	0.013	93.3	98.6
esporte	100	0.000	-	-
estória	93.7	0.016	90.5	96.9
estrela	99.1	0.006	97.8	100
etapa	97.3	0.011	95.1	99.4
evento	98.2	0.009	96.4	100
experiência	98.2	0.009	96.4	100
expressão	96.4	0.013	93.9	98.9
fato	99.5	0.005	98.7	100
favela	99.1	0.006	97.8	100
favor	99.1	0.006	97.8	100
filme	100	0.000	-	-
flor	99.5	0.005	98.7	100
floresta	99.1	0.006	97.8	100

## Appendix B. Continued...

LIST OF MEDIUM FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
fome	98.2	0.009	96.4	100
formação	99.1	0.006	97.8	100
formiga	100	0.000	-	-
fósforo	95.5	0.014	92.7	98.2
frente	99.1	0.006	97.8	100
função	99.1	0.006	97.8	100
funcionário	99.1	0.006	97.8	100
gato	100	0.000	-	-
gerente	96.4	0.013	93.9	98.9
gincana	96.8	0.012	94.5	99.2
idade	98.6	0.008	97.1	100
igualdade	97.3	0.011	95.1	99.4
importância	99.1	0.006	97.8	100
impressão	93.7	0.016	90.5	96.9
influência	98.6	0.008	97.1	100
informação	99.1	0.006	97.8	100
iniciativa	95.5	0.014	92.7	98.2
inovação	96.8	0.012	94.5	99.2
insegurança	97.3	0.011	95.1	99.4
inteligência	98.6	0.008	97.1	100
intenção	97.3	0.011	95.1	99.4
internet	99.1	0.006	97.8	100
janela	99.1	0.006	97.8	100
jornalismo	97.3	0.011	95.1	99.4
jornalista	100	0.000	-	-
lábio	99.1	0.006	97.8	100
laje	98.2	0.009	96.4	100
lavanderia	86.9	0.023	82.5	91.4
leite	99.5	0.005	98.7	100
leitor	99.5	0.005	98.7	100
leitura	100	0.000	-	-
letra	99.5	0.005	98.7	100
língua	100	0.000	-	-
linguagem	99.1	0.006	97.8	100
linha	100	0.000	-	-
literatura	95.5	0.014	92.7	98.2
lobo	100	0.000	-	-
loja	99.1	0.006	97.8	100
luz	99.5	0.005	98.7	100
maço	92.3	0.018	88.8	95.9
maneira	96.4	0.013	93.9	98.9
máquina	98.2	0.009	96.4	100
mar	100	0.000	-	-
marinheiro	96.8	0.012	94.5	99.2
marreco	94.6	0.015	91.6	97.6
medicina	96.8	0.012	94.5	99.2
medo	98.2	0.009	96.4	100
mel	97.7	0.010	95.8	99.7
mensagem	95.9	0.013	93.3	98.6
mercado	99.5	0.005	98.7	100
mês	100	0.000	-	-
metro	87.4	0.022	83	91.8
ministério	96.4	0.013	93.9	98.9



## Appendix B. Continued...

LIST OF MEDIUM FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
minuto	98.6	0.008	97.1	100
missão	98.6	0.008	97.1	100
modalidade	96.8	0.012	94.5	99.2
monte	96.8	0.012	94.5	99.2
moto	97.7	0.010	95.8	99.7
movimento	97.7	0.010	95.8	99.7
mudança	98.2	0.009	96.4	100
município	98.6	0.008	97.1	100
natureza	100	0.000	-	-
navio	98.2	0.009	96.4	100
negócio	89.5	0.005	98.7	100
nobreza	98.2	0.009	96.4	100
noite	100	0.000	-	-
novidade	99.5	0.005	98.7	100
número	100	0.000	-	-
obra	100	0.000	-	-
oficina	98.6	0.008	97.1	100
ônibus	99.5	0.005	98.7	100
opinião	97.7	0.010	95.8	99.7
oportunidade	98.2	0.009	96.4	100
ordem	98.6	0.008	97.1	100
órgão	94.6	0.015	91.6	97.6
orientação	99.5	0.005	98.7	100
ostra	86.9	0.023	82.5	91.4
padrão	97.3	0.011	95.1	99.4
pagamento	99.5	0.005	98.7	100
país	94.1	0.016	91	97.3
parte	99.1	0.006	97.8	100
participação	99.1	0.006	97.8	100
paz	99.1	0.006	97.8	100
pé	99.5	0.005	98.7	100
peito	98.6	0.008	97.1	100
pele	96.8	0.012	94.5	99.2
personagem	99.1	0.006	97.8	100
pia	97.7	0.010	95.8	99.7
pista	99.5	0.005	98.7	100
poltrona	98.2	0.009	96.4	100
população	99.1	0.006	97.8	100
portão	99.5	0.005	98.7	100
possibilidade	98.6	0.008	97.1	100
povo	99.5	0.005	98.7	100
praça	100	0.000	-	-
praia	100	0.000	-	-
prédio	99.5	0.005	98.7	100
prefeitura	99.5	0.005	98.7	100
presença	98.2	0.009	96.4	100
produção	97.3	0.011	95.1	99.4
projeto	99.5	0.005	98.7	100
promoção	99.5	0.005	98.7	100
proposta	99.5	0.005	98.7	100
psicólogo	83.8	0.025	78.9	88.7
publicação	96.4	0.013	93.9	98.9
quadro	97.7	0.010	95.8	99.7

## Appendix B. Continued...

LIST OF MEDIUM FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
qualidade	99.5	0.005	98.7	100
queijo	99.5	0.005	98.7	100
quilo	100	0.000	-	-
racismo	98.2	0.009	96.4	100
razão	93.7	0.016	90.5	96.9
realidade	98.2	0.009	96.4	100
refeição	99.1	0.006	97.8	100
região	98.6	0.008	97.1	100
relacionamento	97.3	0.011	95.1	99.4
relatório	100	0.000	-	-
relógio	99.5	0.005	98.7	100
resposta	99.5	0.005	98.7	100
riso	96.4	0.013	93.9	98.9
saúde	94.1	0.016	91	97.3
século	100	0.000	-	-
segurança	100	0.000	-	-
senhor	99.1	0.006	97.8	100
série	97.3	0.011	95.1	99.4
serviço	99.5	0.005	98.7	100
silêncio	98.2	0.009	96.4	100
sistema	100	0.000	-	-
sociedade	98.6	0.008	97.1	100
sol	100	0.000	-	-
solução	98.6	0.008	97.1	100
sorriso	100	0.000	-	-
sorte	100	0.000	-	-
talo	98.6	0.008	97.1	100
tamanho	100	0.000	-	-
tecnologia	97.3	0.011	95.1	99.4
tela	100	0.000	-	-
telefone	100	0.000	-	-
televisão	99.1	0.006	97.8	100
tema	100	0.000	-	-
teoria	94.6	0.015	91.6	97.6
termo	95.9	0.013	93.3	98.6
terra	100	0.000	-	-
time	98.2	0.009	96.4	100
tratamento	97.7	0.010	95.8	99.7
turma	100	0.000	-	-
unidade	99.1	0.006	97.8	100
valor	99.5	0.005	98.7	100
variedade	97.3	0.011	95.1	99.4
venda	97.7	0.010	95.8	99.7
verão	99.1	0.006	97.8	100
versão	99.1	0.006	97.8	100
viagem	100	0.000	-	-
vila	100	0.000	-	-
visão	98.6	0.008	97.1	100
vizinho	99.1	0.006	97.8	100
vontade	96.8	0.012	94.5	99.2
voz	100	0.000	-	-
xícara	99.5	0.005	98.7	100

**Appendix C.** Database of words for reading by students of Basic Education II - E-LEITURA II – low frequency words

<b>LIST OF LOW FREQUENCY WORDS E-LEITURA II</b>				
<b>Words</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>95% Confidence Interval</b>	
abacate	100	0.000	-	-
abertura	99.1	0.006	97.8	100
abotoadura	92.7	0.018	89.3	96.2
abreviação	92.7	0.018	89.3	96.2
abreviatura	96.4	0.013	93.9	98.9
aceitação	98.2	0.009	96.4	100
acessório	95.5	0.014	92.7	98.2
acionamento	93.6	0.016	90.4	96.9
acne	82.7	0.026	77.7	87.8
aço	97.7	0.010	95.7	99.7
acréscimo	79.5	0.027	74.2	84.9
acusação	89.1	0.021	84.9	93.2
adequação	86.4	0.023	81.8	90.9
administração	95	0.015	92.1	97.9
admiração	97.3	0.011	95.1	99.4
adrenalina	96.8	0.012	94.5	99.2
advertência	96.4	0.013	93.9	98.9
advocacia	90	0.020	86	94
advogado	95.9	0.013	93.3	98.5
afetividade	86.4	0.023	81.8	90.9
afirmação	99.5	0.005	98.6	100
aflição	95.5	0.014	92.7	98.2
agência	97.3	0.011	95.1	99.4
agonia	82.3	0.026	77.2	87.4
aguardente	90	0.020	86	94
água	87.3	0.023	82.8	91.7
álbum	96.8	0.012	94.5	99.2
álcool	98.2	0.009	96.4	100
alegria	96.8	0.012	94.5	99.2
aliança	99.1	0.006	97.8	100
alma	99.5	0.005	98.6	100
alternativa	98.2	0.009	96.4	100
aluguel	97.3	0.011	95.1	99.4
alumínio	98.2	0.009	96.4	100
alvo	98.6	0.008	97.1	100
âmbito	77.7	0.028	72.2	83.3
ambulatório	93.6	0.016	90.4	96.9
ameixa	98.6	0.008	97.1	100
amém	99.1	0.006	97.8	100
amenidade	96.4	0.013	93.9	98.9
anatomia	88.2	0.022	83.9	92.5
andamento	97.7	0.010	95.7	99.7
andança	92.7	0.018	89.3	96.2
anel	100	0.000	-	-
animação	97.7	0.010	95.7	99.7
aniversário	99.5	0.005	98.6	100
anjo	100	0.000	-	-
ansiedade	97.3	0.011	95.1	99.4
antropologia	86.4	0.023	81.8	90.9
anúncio	98.2	0.009	96.4	100
apagão	97.3	0.011	95.1	99.4
aparência	95.9	0.013	93.3	98.5
apartamento	98.6	0.008	97.1	100

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
aperfeiçoamento	86.8	0.023	82.3	91.3
aplicação	96.4	0.013	93.9	98.9
aprendiz	99.1	0.006	97.8	100
aprendizado	98.2	0.009	96.4	100
aprendizagem	99.1	0.006	97.8	100
apresentação	97.3	0.011	95.1	99.4
aprimoramento	91.8	0.019	88.2	95.5
aquisição	95	0.015	92.1	97.9
aragem	91.4	0.019	87.6	95.1
arame	91.4	0.019	87.6	95.1
arbitrariedade	87.3	0.023	82.8	91.7
árbitro	82.3	0.026	77.2	87.4
ardência	95	0.015	92.1	97.9
argumentação	89.5	0.021	85.5	93.6
armário	100	0.000	-	-
armazém	90.5	0.020	86.5	94.4
arraial	79.5	0.027	74.2	84.9
arroz	99.1	0.006	97.8	100
artefato	90.9	0.019	87.1	94.7
artesanato	96.8	0.012	94.5	99.2
articulação	97.7	0.010	95.7	99.7
artista	95.9	0.013	93.3	98.5
arvoredo	85.9	0.024	81.3	90.5
asa	96.8	0.012	94.5	99.2
assassinato	89.5	0.021	85.5	93.6
assimilação	94.5	0.015	91.5	97.6
assistência	97.7	0.010	95.7	99.7
associação	98.2	0.009	96.4	100
assombração	96.8	0.012	94.5	99.2
atendimento	99.1	0.006	97.8	100
aterriçagem	88.2	0.022	83.9	92.5
atleta	96.8	0.012	94.5	99.2
ator	95.9	0.013	93.3	98.5
atração	97.7	0.010	95.7	99.7
atributo	95	0.015	92.1	97.9
atuação	97.7	0.010	95.7	99.7
atualidade	97.3	0.011	95.1	99.4
ausência	95.9	0.013	93.3	98.5
autoafirmação	93.6	0.016	90.4	96.9
autodemarkação	91.8	0.019	88.2	95.5
autodomínio	91.4	0.019	87.6	95.1
autoestima	95	0.015	92.1	97.9
automóvel	97.3	0.011	95.1	99.4
autoridade	92.3	0.018	88.7	95.8
autorização	97.7	0.010	95.7	99.7
ave	100	0.000	-	-
averbação	95.5	0.014	92.7	98.2
azar	97.3	0.011	95.1	99.4
babá	95	0.015	92.1	97.9
bacharel	89.1	0.021	84.9	93.2
baga	96.8	0.012	94.5	99.2
bailarino	96.8	0.012	94.5	99.2
bala	98.2	0.009	96.4	100



## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
balada	98.6	0.008	97.1	100
balbúrdia	71.4	0.031	65.3	77.4
balconista	95.9	0.013	93.3	98.5
bandeira	95.5	0.014	92.7	98.2
bando	96.8	0.012	94.5	99.2
banqueiro	92.7	0.018	89.3	96.2
bar	100	0.000	-	-
barão	91.8	0.019	88.2	95.5
barba	96.8	0.012	94.5	99.2
barco	95.5	0.014	92.7	98.2
barraco	89.5	0.021	85.5	93.6
barreira	97.3	0.011	95.1	99.4
barriga	98.6	0.008	97.1	100
barroco	92.7	0.018	89.3	96.2
base	98.2	0.009	96.4	100
batalhão	98.2	0.009	96.4	100
batedeira	93.2	0.017	89.8	96.5
batizado	96.8	0.012	94.5	99.2
batom	99.1	0.006	97.8	100
bebê	99.5	0.005	98.6	100
bebida	98.6	0.008	97.1	100
beco	88.6	0.021	84.4	92.9
beisebol	97.3	0.011	95.1	99.4
beleza	99.5	0.005	98.6	100
beliche	95.5	0.014	92.7	98.2
beneficiamento	93.6	0.016	90.4	96.9
benefício	99.1	0.006	97.8	100
benzina	90	0.020	86	94
bibliotecário	89.1	0.021	84.9	93.2
bicho	100	0.000	-	-
bife	95.9	0.013	93.3	98.5
bilhete	95.5	0.014	92.7	98.2
bingo	98.2	0.009	96.4	100
biografia	95.9	0.013	93.3	98.5
biólogo	78.6	0.028	73.2	84.1
bioma	95.5	0.014	92.7	98.2
bloco	97.7	0.010	95.7	99.7
boca	98.6	0.008	97.1	100
bochecha	96.8	0.012	94.5	99.2
bode	99.1	0.006	97.8	100
bolha	98.2	0.009	96.4	100
bolsa	99.5	0.005	98.6	100
bolso	100	0.000	-	-
boné	99.1	0.006	97.8	100
boneca	98.6	0.008	97.1	100
bônus	96.4	0.013	93.9	98.9
borracha	97.7	0.010	95.7	99.7
boteco	95.5	0.014	92.7	98.2
braçada	93.6	0.016	90.4	96.9
braço	98.6	0.008	97.1	100
branqueamento	91.4	0.019	87.6	95.1
brasa	93.6	0.016	90.4	96.9
brigadeiro	100	0.000	-	-

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
brincadeira	98.2	0.009	96.4	100
brinquedo	99.5	0.005	98.6	100
brisa	99.5	0.005	98.6	100
bronca	95.9	0.013	93.3	98.5
bronze	98.2	0.009	96.4	100
bruxa	98.2	0.009	96.4	100
bule	97.3	0.011	95.1	99.4
burro	97.3	0.011	95.1	99.4
buzo	94.5	0.015	91.5	97.6
cabra	98.6	0.008	97.1	100
cacetada	94.5	0.015	91.5	97.6
cachopa	89.5	0.021	85.5	93.6
cadastramento	92.7	0.018	89.3	96.2
café	100	0.000	-	-
caixa	99.1	0.006	97.8	100
calçamento	94.5	0.015	91.5	97.6
cálculo	95	0.015	92.1	97.9
caldeirão	98.2	0.009	96.4	100
caligrafia	98.2	0.009	96.4	100
calor	99.1	0.006	97.8	100
cama	95.5	0.014	92.7	98.2
camelo	97.7	0.010	95.7	99.7
câmera	96.4	0.013	93.9	98.9
campina	94.5	0.015	91.5	97.6
canalização	98.2	0.009	96.4	100
canção	97.3	0.011	95.1	99.4
candidato	98.2	0.009	96.4	100
candidatura	96.8	0.012	94.5	99.2
candomblé	83.2	0.025	78.2	88.2
canela	83.2	0.025	78.2	88.2
cano	98.6	0.008	97.1	100
canoa	99.1	0.006	97.8	100
cansaço	92.3	0.018	88.7	95.8
cão	95.9	0.013	93.3	98.5
capa	97.3	0.011	95.1	99.4
capacidade	98.6	0.008	97.1	100
capacitação	92.3	0.018	88.7	95.8
capítulo	98.2	0.009	96.4	100
caracterização	93.6	0.016	90.4	96.9
caráter	95.5	0.014	92.7	98.2
caravana	95	0.015	92.1	97.9
carinho	90.5	0.020	86.5	94.4
carne	100	0.000	-	-
carreira	97.3	0.011	95.1	99.4
carreta	93.6	0.016	90.4	96.9
carretel	95.5	0.014	92.7	98.2
cartão	99.1	0.006	97.8	100
cartaz	96.8	0.012	94.5	99.2
carteira	97.3	0.011	95.1	99.4
cartolina	98.6	0.008	97.1	100
casaco	96.4	0.013	93.9	98.9
casamento	99.1	0.006	97.8	100
castelo	100	0.000	-	-

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
castidade	92.7	0.018	89.3	96.2
catástrofe	59.1	0.033	52.5	65.6
categoria	95.5	0.014	92.7	98.2
cavalete	91.8	0.019	88.2	95.5
cavalheiro	96.8	0.012	94.5	99.2
cavalo	100	0.000	-	-
caveira	96.4	0.013	93.9	98.9
caverna	99.5	0.005	98.6	100
celeuma	70.9	0.031	64.9	77
célula	93.6	0.016	90.4	96.9
cemitério	94.1	0.016	91	97.2
cenografia	94.1	0.016	91	97.2
censo	95	0.015	92.1	97.9
cera	82.7	0.026	77.7	87.8
cerimônia	94.1	0.016	91	97.2
cessão	95.9	0.013	93.3	98.5
cesta	95.5	0.014	92.7	98.2
chá	98.6	0.008	97.1	100
chapéu	100	0.000	-	-
chave	100	0.000	-	-
cheque	94.1	0.016	91	97.2
chinelo	99.5	0.005	98.6	100
chocolate	100	0.000	-	-
chofer	76.4	0.029	70.7	82
chupeta	99.1	0.006	97.8	100
chuva	99.5	0.005	98.6	100
ciclo	95.9	0.013	93.3	98.5
cientista	98.6	0.008	97.1	100
cilindro	98.2	0.009	96.4	100
cinema	99.5	0.005	98.6	100
cintura	99.1	0.006	97.8	100
cinzeiro	97.3	0.011	95.1	99.4
circuito	96.4	0.013	93.9	98.9
circunstância	93.2	0.017	89.8	96.5
ciúme	98.2	0.009	96.4	100
civilização	97.7	0.010	95.7	99.7
clareza	95.9	0.013	93.3	98.5
classificação	97.3	0.011	95.1	99.4
clima	97.3	0.011	95.1	99.4
clínica	95.9	0.013	93.3	98.5
cobrança	95.9	0.013	93.3	98.5
código	99.5	0.005	98.6	100
coelho	100	0.000	-	-
coerência	91.8	0.019	88.2	95.5
coincidência	89.5	0.021	85.5	93.6
colaboração	98.2	0.009	96.4	100
colarinho	95.5	0.014	92.7	98.2
coleccionador	97.3	0.011	95.1	99.4
colégio	99.5	0.005	98.6	100
coletânea	91.8	0.019	88.2	95.5
coletividade	96.8	0.012	94.5	99.2
colheita	95.9	0.013	93.3	98.5
coluna	100	0.000	-	-

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
comandante	91.8	0.019	88.2	95.5
comemoração	96.8	0.012	94.5	99.2
comentário	99.1	0.006	97.8	100
comerciante	97.7	0.010	95.7	99.7
comércio	98.2	0.009	96.4	100
comida	98.6	0.008	97.1	100
cômodo	91.4	0.019	87.6	95.1
compaixão	100	0.000	-	-
companhia	91.4	0.019	87.6	95.1
competição	98.2	0.009	96.4	100
complemento	88.2	0.022	83.9	92.5
complexidade	91.8	0.019	88.2	95.5
componente	96.4	0.013	93.9	98.9
composição	100	0.000	-	-
compreensão	96.4	0.013	93.9	98.9
compromisso	96.4	0.013	93.9	98.9
conceituação	93.2	0.017	89.8	96.5
concentração	98.6	0.008	97.1	100
concepção	93.6	0.016	90.4	96.9
concerto	92.3	0.018	88.7	95.8
concha	96.4	0.013	93.9	98.9
conclusão	95.9	0.013	93.3	98.5
concorrência	94.5	0.015	91.5	97.6
condicionamento	95.9	0.013	93.3	98.5
condução	94.5	0.015	91.5	97.6
confeção	89.5	0.021	85.5	93.6
confiabilidade	94.5	0.015	91.5	97.6
confiança	97.7	0.010	95.7	99.7
confusão	93.6	0.016	90.4	96.9
congresso	97.7	0.010	95.7	99.7
conhaque	96.8	0.012	94.5	99.2
conjunção	87.3	0.023	82.8	91.7
consenso	90.5	0.020	86.5	94.4
consideração	97.7	0.010	95.7	99.7
constatação	85	0.024	80.2	89.8
construção	95	0.015	92.1	97.9
consultor	92.7	0.018	89.3	96.2
consumismo	91.4	0.019	87.6	95.1
conteúdo	95.9	0.013	93.3	98.5
continente	96.4	0.013	93.9	98.9
contratação	83.2	0.025	78.2	88.2
contribuição	95.5	0.014	92.7	98.2
convenção	91.8	0.019	88.2	95.5
convés	86.8	0.023	82.3	91.3
convite	97.7	0.010	95.7	99.7
convivência	95	0.015	92.1	97.9
convívio	96.4	0.013	93.9	98.9
coordenação	96.4	0.013	93.9	98.9
cópia	93.6	0.016	90.4	96.9
coragem	99.1	0.006	97.8	100
cordeiro	97.7	0.010	95.7	99.7
correção	98.6	0.008	97.1	100
corredor	95	0.015	92.1	97.9



## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
correio	98.2	0.009	96.4	100
corrida	99.1	0.006	97.8	100
cortina	97.7	0.010	95.7	99.7
costume	98.6	0.008	97.1	100
cotidiano	94.1	0.016	91	97.2
couve	99.1	0.006	97.8	100
covardia	93.2	0.017	89.8	96.5
coveiro	98.6	0.008	97.1	100
cozinha	93.2	0.017	89.8	96.5
crachá	94.5	0.015	91.5	97.6
crânio	95	0.015	92.1	97.9
crédito	97.7	0.010	95.7	99.7
creme	99.1	0.006	97.8	100
crença	96.4	0.013	93.9	98.9
crecimento	99.5	0.005	98.6	100
criatividade	98.6	0.008	97.1	100
crime	98.6	0.008	97.1	100
criminalização	86.8	0.023	82.3	91.3
crise	98.2	0.009	96.4	100
critério	95	0.015	92.1	97.9
cruzamento	100	0.000	-	-
cueca	97.7	0.010	95.7	99.7
cumprimento	97.3	0.011	95.1	99.4
curral	80.9	0.027	75.7	86.1
currículo	95.5	0.014	92.7	98.2
dama	96.8	0.012	94.5	99.2
declaração	97.7	0.010	95.7	99.7
dedicação	95.5	0.014	92.7	98.2
dedo	99.1	0.006	97.8	100
deficiência	93.6	0.016	90.4	96.9
degeneração	93.2	0.017	89.8	96.5
degrau	98.6	0.008	97.1	100
delicadeza	97.3	0.011	95.1	99.4
demarcação	96.4	0.013	93.9	98.9
democracia	95.5	0.014	92.7	98.2
democratização	96.8	0.012	94.5	99.2
dente	98.6	0.008	97.1	100
departamento	98.2	0.009	96.4	100
depoimento	96.4	0.013	93.9	98.9
depositante	90	0.020	86	94
depredação	94.5	0.015	91.5	97.6
depressão	94.5	0.015	91.5	97.6
descendência	91.4	0.019	87.6	95.1
desconfiança	93.2	0.017	89.8	96.5
descrença	90.5	0.020	86.5	94.4
desfile	96.8	0.012	94.5	99.2
desígnio	79.5	0.027	74.2	84.9
desigualdade	92.7	0.018	89.3	96.2
deslumbramento	88.6	0.021	84.4	92.9
desmatamento	99.1	0.006	97.8	100
desperdício	98.6	0.008	97.1	100
despertador	93.2	0.017	89.8	96.5
deteção	79.1	0.027	73.7	84.5

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
detector	89.1	0.021	84.9	93.2
detenção	91.8	0.019	88.2	95.5
detento	92.7	0.018	89.3	96.2
determinação	95.5	0.014	92.7	98.2
detetive	94.5	0.015	91.5	97.6
detrimento	92.7	0.018	89.3	96.2
devastador	91.4	0.019	87.6	95.1
dezena	97.7	0.010	95.7	99.7
diabolô	73.6	0.030	67.8	79.5
diálogo	94.1	0.016	91	97.2
diário	96.8	0.012	94.5	99.2
dica	98.6	0.008	97.1	100
dicionário	98.6	0.008	97.1	100
difusão	87.7	0.022	83.4	92.1
digestão	90.5	0.020	86.5	94.4
dimensão	95	0.015	92.1	97.9
diminuição	98.2	0.009	96.4	100
diploma	99.1	0.006	97.8	100
direção	97.7	0.010	95.7	99.7
diretriz	95	0.015	92.1	97.9
discriminação	91.8	0.019	88.2	95.5
disquete	91.8	0.019	88.2	95.5
disseminação	90.9	0.019	87.1	94.7
distância	97.7	0.010	95.7	99.7
distinção	94.1	0.016	91	97.2
distração	98.6	0.008	97.1	100
distribuição	96.4	0.013	93.9	98.9
diversão	95	0.015	92.1	97.9
diversidade	98.2	0.009	96.4	100
dívida	83.6	0.025	78.7	88.6
divisão	98.2	0.009	96.4	100
divulgação	97.3	0.011	95.1	99.4
dó	95.5	0.014	92.7	98.2
doação	98.6	0.008	97.1	100
documentário	90	0.020	86	94
doença	99.5	0.005	98.6	100
dom	97.3	0.011	95.1	99.4
domicílio	89.5	0.021	85.5	93.6
domínio	96.8	0.012	94.5	99.2
doutorado	92.7	0.018	89.3	96.2
dupla	98.2	0.009	96.4	100
duração	99.5	0.005	98.6	100
economia	96.8	0.012	94.5	99.2
edição	97.7	0.010	95.7	99.7
edifício	99.1	0.006	97.8	100
editor	99.1	0.006	97.8	100
editora	97.7	0.010	95.7	99.7
eficiência	93.2	0.017	89.8	96.5
elaboração	99.1	0.006	97.8	100
elemento	98.6	0.008	97.1	100
elevação	98.6	0.008	97.1	100
elevador	99.1	0.006	97.8	100
elite	97.7	0.010	95.7	99.7

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
embalagem	98.6	0.008	97.1	100
emergência	96.4	0.013	93.9	98.9
empreendimento	95	0.015	92.1	97.9
empreitada	87.7	0.022	83.4	92.1
empréstimo	91.8	0.019	88.2	95.5
encantamento	93.6	0.016	90.4	96.9
enchente	90.5	0.020	86.5	94.4
endereço	99.1	0.006	97.8	100
enfermaria	92.7	0.018	89.3	96.2
engenheiro	96.8	0.012	94.5	99.2
engrenagem	91.8	0.019	88.2	95.5
enigma	87.7	0.022	83.4	92.1
ensinamento	97.3	0.011	95.1	99.4
entendimento	94.5	0.015	91.5	97.6
entidade	94.5	0.015	91.5	97.6
entonação	98.2	0.009	96.4	100
entrada	99.1	0.006	97.8	100
entretenimento	82.3	0.026	77.2	87.4
enunciado	92.7	0.018	89.3	96.2
envelope	95.9	0.013	93.3	98.5
envolvimento	95.5	0.014	92.7	98.2
epicentro	90.9	0.019	87.1	94.7
equivoco	57.3	0.033	50.7	63.9
escada	98.6	0.008	97.1	100
escolaridade	96.4	0.013	93.9	98.9
esconderijo	96.8	0.012	94.5	99.2
escravagismo	82.3	0.026	77.2	87.4
escravidão	99.1	0.006	97.8	100
escritório	97.3	0.011	95.1	99.4
escultura	97.7	0.010	95.7	99.7
especialização	90.5	0.020	86.5	94.4
espécie	97.7	0.010	95.7	99.7
esperança	98.6	0.008	97.1	100
espiga	94.1	0.016	91	97.2
esposo	92.3	0.018	88.7	95.8
esquecimento	93.6	0.016	90.4	96.9
esquema	98.6	0.008	97.1	100
esquina	98.6	0.008	97.1	100
essência	90.5	0.020	86.5	94.4
estabelecimento	96.8	0.012	94.5	99.2
estação	99.1	0.006	97.8	100
estágio	95.5	0.014	92.7	98.2
estante	98.2	0.009	96.4	100
estardalhaço	85	0.024	80.2	89.8
estatística	89.1	0.021	84.9	93.2
estatuto	87.7	0.022	83.4	92.1
estilo	98.2	0.009	96.4	100
estimativa	97.7	0.010	95.7	99.7
estômago	96.4	0.013	93.9	98.9
estopa	94.5	0.015	91.5	97.6
estrada	97.3	0.011	95.1	99.4
estratégia	96.4	0.013	93.9	98.9
estreiteza	88.2	0.022	83.9	92.5

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
estúdio	96.4	0.013	93.9	98.9
estupor	92.7	0.018	89.3	96.2
etnocentrismo	70	0.031	63.9	76.1
euforia	90	0.020	86	94
evangelho	93.6	0.016	90.4	96.9
evidência	96.8	0.012	94.5	99.2
evolução	98.6	0.008	97.1	100
exceção	88.6	0.021	84.4	92.9
exclamação	95.9	0.013	93.3	98.5
exclusão	90.9	0.019	87.1	94.7
excursão	89.5	0.021	85.5	93.6
execução	88.6	0.021	84.4	92.9
exercício	95.5	0.014	92.7	98.2
existência	95.9	0.013	93.3	98.5
êxodo	66.8	0.032	60.5	73.1
expansão	95	0.015	92.1	97.9
explicação	98.2	0.009	96.4	100
exploração	96.4	0.013	93.9	98.9
extração	95.9	0.013	93.3	98.5
extremidade	95.5	0.014	92.7	98.2
fã	98.2	0.009	96.4	100
fabricante	95.9	0.013	93.3	98.5
faca	96.4	0.013	93.9	98.9
fação	89.1	0.021	84.9	93.2
fachada	89.5	0.021	85.5	93.6
faculdade	98.6	0.008	97.1	100
faixa	98.6	0.008	97.1	100
falsificação	91.4	0.019	87.6	95.1
familiaridade	91.8	0.019	88.2	95.5
fantasma	99.5	0.005	98.6	100
farmácia	99.1	0.006	97.8	100
farol	98.2	0.009	96.4	100
farrapo	91.4	0.019	87.6	95.1
fase	95.9	0.013	93.3	98.5
fator	98.6	0.008	97.1	100
fé	100	0.000	-	-
feijão	99.5	0.005	98.6	100
feira	98.6	0.008	97.1	100
feminilidade	87.7	0.022	83.4	92.1
fenômeno	97.3	0.011	95.1	99.4
feriado	98.2	0.009	96.4	100
férias	98.2	0.009	96.4	100
ficção	93.6	0.016	90.4	96.9
fidelidade	94.5	0.015	91.5	97.6
fila	98.6	0.008	97.1	100
filão	99.1	0.006	97.8	100
filhote	99.5	0.005	98.6	100
filmadora	96.4	0.013	93.9	98.9
finalização	95	0.015	92.1	97.9
financeiro	98.6	0.008	97.1	100
fio	99.5	0.005	98.6	100
firmeza	98.6	0.008	97.1	100
fiscalização	95	0.015	92.1	97.9



## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
fisiologia	84.5	0.024	79.7	89.4
flerte	84.1	0.025	79.2	89
fluxo	86.4	0.023	81.8	90.9
fogão	98.6	0.008	97.1	100
fogo	98.6	0.008	97.1	100
fogueira	98.2	0.009	96.4	100
folheto	92.3	0.018	88.7	95.8
fone	99.5	0.005	98.6	100
fonte	99.5	0.005	98.6	100
formalidade	97.3	0.011	95.1	99.4
fórmula	97.7	0.010	95.7	99.7
forró	85.5	0.024	80.8	90.1
fortuna	95.9	0.013	93.3	98.5
fórum	87.3	0.023	82.8	91.7
foto	100	0.000	-	-
fotografia	99.5	0.005	98.6	100
fração	97.7	0.010	95.7	99.7
fragilidade	94.5	0.015	91.5	97.6
frango	99.5	0.005	98.6	100
fraqueza	91.8	0.019	88.2	95.5
frase	97.7	0.010	95.7	99.7
frequência	96.8	0.012	94.5	99.2
frigorífico	81.8	0.026	76.7	87
fritura	97.7	0.010	95.7	99.7
fronte	91.8	0.019	88.2	95.5
fronteira	98.6	0.008	97.1	100
frustração	89.1	0.021	84.9	93.2
fruta	97.7	0.010	95.7	99.7
fruto	97.7	0.010	95.7	99.7
fumaça	94.5	0.015	91.5	97.6
funcionalidade	96.8	0.012	94.5	99.2
funcionamento	97.7	0.010	95.7	99.7
fundação	97.7	0.010	95.7	99.7
fundador	99.5	0.005	98.6	100
futebol	100	0.000	-	-
futuro	99.5	0.005	98.6	100
gabão	92.7	0.018	89.3	96.2
gado	98.2	0.009	96.4	100
gaivota	96.8	0.012	94.5	99.2
galeão	97.7	0.010	95.7	99.7
garagem	98.6	0.008	97.1	100
garantia	97.3	0.011	95.1	99.4
garganta	96.4	0.013	93.9	98.9
garrafa	100	0.000	-	-
gatilho	89.1	0.021	84.9	93.2
gel	99.1	0.006	97.8	100
geladeira	99.1	0.006	97.8	100
gene	93.6	0.016	90.4	96.9
gênero	92.7	0.018	89.3	96.2
genética	96.4	0.013	93.9	98.9
gênio	99.1	0.006	97.8	100
genoma	89.1	0.021	84.9	93.2
genro	88.6	0.021	84.4	92.9

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
geração	97.7	0.010	95.7	99.7
gerenciamento	93.2	0.017	89.8	96.5
gestante	95	0.015	92.1	97.9
gestão	97.3	0.011	95.1	99.4
gesto	95.5	0.014	92.7	98.2
gestor	97.7	0.010	95.7	99.7
gibi	93.2	0.017	89.8	96.5
gigolô	52.3	0.034	45.6	58.9
gilete	95.5	0.014	92.7	98.2
ginástica	96.8	0.012	94.5	99.2
gíria	87.7	0.022	83.4	92.1
giz	99.5	0.005	98.6	100
glicose	89.5	0.021	85.5	93.6
goiabada	81.8	0.026	76.7	87
gordura	99.5	0.005	98.6	100
gorjeta	96.8	0.012	94.5	99.2
governanta	93.6	0.016	90.4	96.9
governante	97.7	0.010	95.7	99.7
graça	98.2	0.009	96.4	100
grade	85	0.024	80.2	89.8
graduação	91.8	0.019	88.2	95.5
grafia	87.3	0.023	82.8	91.7
grafiteiro	95.5	0.014	92.7	98.2
grandeza	98.2	0.009	96.4	100
grão	98.6	0.008	97.1	100
grau	99.1	0.006	97.8	100
gravação	99.5	0.005	98.6	100
gravata	93.2	0.017	89.8	96.5
greve	94.1	0.016	91	97.2
grevista	96.8	0.012	94.5	99.2
guardanapo	97.3	0.011	95.1	99.4
guerra	98.2	0.009	96.4	100
gueto	82.7	0.026	77.7	87.8
guitarra	93.6	0.016	90.4	96.9
habilidade	97.3	0.011	95.1	99.4
habitante	94.1	0.016	91	97.2
herança	96.8	0.012	94.5	99.2
hesitação	89.1	0.021	84.9	93.2
heterogeneidade	80.9	0.027	75.7	86.1
hierarquia	79.1	0.027	73.7	84.5
hierarquização	80.5	0.027	75.2	85.7
historiador	95.9	0.013	93.3	98.5
homem	100	0.000	-	-
horário	98.2	0.009	96.4	100
horror	97.7	0.010	95.7	99.7
hospedaria	85.9	0.024	81.3	90.5
hóspede	79.1	0.027	73.7	84.5
hospital	100	0.000	-	-
hotel	99.5	0.005	98.6	100
humanidade	98.6	0.008	97.1	100
humildade	85.5	0.024	80.8	90.1
humor	99.5	0.005	98.6	100
identidade	95.9	0.013	93.3	98.5

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
identificação	95.5	0.014	92.7	98.2
idioma	97.7	0.010	95.7	99.7
ídolo	95	0.015	92.1	97.9
ilha	99.1	0.006	97.8	100
imaginação	99.1	0.006	97.8	100
imaginário	99.1	0.006	97.8	100
imigração	98.6	0.008	97.1	100
imigrante	98.6	0.008	97.1	100
impacto	93.6	0.016	90.4	96.9
imperialismo	96.8	0.012	94.5	99.2
império	98.6	0.008	97.1	100
ímpeto	42.7	0.033	36.1	49.3
implantação	97.3	0.011	95.1	99.4
inauguração	98.2	0.009	96.4	100
incêndio	96.4	0.013	93.9	98.9
inchaço	92.7	0.018	89.3	96.2
incidência	91.4	0.019	87.6	95.1
inclusão	95	0.015	92.1	97.9
incontinência	89.1	0.021	84.9	93.2
incorporação	96.8	0.012	94.5	99.2
incursão	84.5	0.024	79.7	89.4
independência	96.4	0.013	93.9	98.9
indicação	96.8	0.012	94.5	99.2
indicador	99.5	0.005	98.6	100
índice	89.5	0.021	85.5	93.6
indiferença	97.7	0.010	95.7	99.7
indignação	95	0.015	92.1	97.9
indivíduo	94.5	0.015	91.5	97.6
indústria	97.7	0.010	95.7	99.7
inexistência	82.7	0.026	77.7	87.8
inexorabilidade	60.5	0.033	53.9	67
infância	99.1	0.006	97.8	100
inferência	96.4	0.013	93.9	98.9
inferioridade	95.5	0.014	92.7	98.2
infinito	97.3	0.011	95.1	99.4
informática	98.2	0.009	96.4	100
infortúnio	92.7	0.018	89.3	96.2
infraestrutura	89.5	0.021	85.5	93.6
ingestão	93.6	0.016	90.4	96.9
ingrediente	96.8	0.012	94.5	99.2
início	99.1	0.006	97.8	100
inscrição	95	0.015	92.1	97.9
inseto	95.5	0.014	92.7	98.2
inspeção	92.7	0.018	89.3	96.2
instalação	98.6	0.008	97.1	100
instituição	95.9	0.013	93.3	98.5
instituto	95.9	0.013	93.3	98.5
instrução	92.3	0.018	88.7	95.8
instrumento	96.4	0.013	93.9	98.9
integrante	95	0.015	92.1	97.9
intelecto	94.5	0.015	91.5	97.6
interlocutor	92.7	0.018	89.3	96.2
internauta	94.5	0.015	91.5	97.6

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
interpretação	97.7	0.010	95.7	99.7
intérprete	58.2	0.033	51.6	64.8
interrogação	97.3	0.011	95.1	99.4
intestino	90	0.020	86	94
intolerância	93.2	0.017	89.8	96.5
intoxicação	89.1	0.021	84.9	93.2
introdução	96.4	0.013	93.9	98.9
intuito	77.3	0.028	71.7	82.9
invasão	96.8	0.012	94.5	99.2
invencionece	87.7	0.022	83.4	92.1
investigação	97.7	0.010	95.7	99.7
investimento	97.7	0.010	95.7	99.7
irregular	93.2	0.017	89.8	96.5
irritação	94.5	0.015	91.5	97.6
isopor	96.8	0.012	94.5	99.2
item	98.6	0.008	97.1	100
jangada	95.5	0.014	92.7	98.2
jaqueira	90	0.020	86	94
jardim	99.5	0.005	98.6	100
jogador	98.6	0.008	97.1	100
juízo	95.9	0.013	93.3	98.5
júri	86.8	0.023	82.3	91.3
justiça	99.5	0.005	98.6	100
justificativa	95.5	0.014	92.7	98.2
juventude	98.2	0.009	96.4	100
labirintite	90	0.020	86	94
laboratório	99.1	0.006	97.8	100
ladrão	99.1	0.006	97.8	100
lagarta	77.7	0.028	72.2	83.3
lago	98.2	0.009	96.4	100
lagoa	99.1	0.006	97.8	100
lâmpada	99.1	0.006	97.8	100
lampião	98.2	0.009	96.4	100
lampioneiro	97.7	0.010	95.7	99.7
lançamento	98.6	0.008	97.1	100
lance	95	0.015	92.1	97.9
lanchonete	99.1	0.006	97.8	100
lápiz	100	0.000	-	-
lar	100	0.000	-	-
lata	99.5	0.005	98.6	100
lavagem	98.6	0.008	97.1	100
lazer	98.2	0.009	96.4	100
leão	100	0.000	-	-
lebre	98.2	0.009	96.4	100
legião	97.3	0.011	95.1	99.4
legislação	95	0.015	92.1	97.9
légua	97.3	0.011	95.1	99.4
lei	99.1	0.006	97.8	100
leito	93.2	0.017	89.8	96.5
lembrança	98.6	0.008	97.1	100
lenço	99.1	0.006	97.8	100
lenda	98.2	0.009	96.4	100

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
lenha	98.6	0.008	97.1	100
lenhador	99.5	0.005	98.6	100
leque	90	0.020	86	94
levantamento	97.3	0.011	95.1	99.4
libelo	74.5	0.029	68.7	80.3
liberdade	99.1	0.006	97.8	100
lição	99.1	0.006	97.8	100
licença	98.6	0.008	97.1	100
licenciatura	94.5	0.015	91.5	97.6
líder	99.1	0.006	97.8	100
liderança	92.3	0.018	88.7	95.8
ligação	99.5	0.005	98.6	100
limite	98.6	0.008	97.1	100
linguística	81.8	0.026	76.7	87
linhagem	86.8	0.023	82.3	91.3
líquido	98.2	0.009	96.4	100
lombada	96.8	0.012	94.5	99.2
loucura	97.3	0.011	95.1	99.4
loureiro	93.2	0.017	89.8	96.5
lousa	96.4	0.013	93.9	98.9
lua	100	0.000	-	-
maçã	98.2	0.009	96.4	100
macaco	99.5	0.005	98.6	100
macarrão	99.5	0.005	98.6	100
madeira	99.5	0.005	98.6	100
madrinha	99.1	0.006	97.8	100
madrugada	96.8	0.012	94.5	99.2
magia	97.3	0.011	95.1	99.4
mala	100	0.000	-	-
maldade	99.1	0.006	97.8	100
malícia	98.6	0.008	97.1	100
mandato	90	0.020	86	94
mangueira	98.6	0.008	97.1	100
mania	97.7	0.010	95.7	99.7
manifestação	98.6	0.008	97.1	100
manipulação	99.5	0.005	98.6	100
manta	95.5	0.014	92.7	98.2
maquinaria	85	0.024	80.2	89.8
maratona	99.5	0.005	98.6	100
marceneiro	92.7	0.018	89.3	96.2
margarida	97.3	0.011	95.1	99.4
margem	98.6	0.008	97.1	100
marido	99.5	0.005	98.6	100
mármore	84.1	0.025	79.2	89
marreta	94.5	0.015	91.5	97.6
marujo	95.9	0.013	93.3	98.5
máscara	97.7	0.010	95.7	99.7
mascate	92.7	0.018	89.3	96.2
massa	99.5	0.005	98.6	100
matemática	99.5	0.005	98.6	100
matéria	99.1	0.006	97.8	100
material	99.5	0.005	98.6	100

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
materialização	95.5	0.014	92.7	98.2
matraca	96.8	0.012	94.5	99.2
maturação	95.9	0.013	93.3	98.5
maturidade	95.5	0.014	92.7	98.2
mecanismo	95	0.015	92.1	97.9
médico	95.9	0.013	93.3	98.5
meditação	96.8	0.012	94.5	99.2
melhoria	97.3	0.011	95.1	99.4
melodia	96.8	0.012	94.5	99.2
membro	98.6	0.008	97.1	100
memorando	90.5	0.020	86.5	94.4
memória	98.2	0.009	96.4	100
menopausa	97.3	0.011	95.1	99.4
mentalidade	92.3	0.018	88.7	95.8
mentira	99.1	0.006	97.8	100
mercadoria	97.7	0.010	95.7	99.7
mérito	90	0.020	86	94
mesada	97.3	0.011	95.1	99.4
mestiçagem	85.9	0.024	81.3	90.5
mestre	99.5	0.005	98.6	100
meta	97.7	0.010	95.7	99.7
metabolismo	97.3	0.011	95.1	99.4
metade	99.1	0.006	97.8	100
metal	98.6	0.008	97.1	100
método	87.3	0.023	82.8	91.7
metrô	69.1	0.031	62.9	75.2
mexerica	94.5	0.015	91.5	97.6
mico	98.6	0.008	97.1	100
microlitro	97.3	0.011	95.1	99.4
mictório	82.3	0.026	77.2	87.4
migração	98.6	0.008	97.1	100
migrante	96.8	0.012	94.5	99.2
milênio	95.9	0.013	93.3	98.5
minicrônica	90.5	0.020	86.5	94.4
minidicionário	95.9	0.013	93.3	98.5
ministro	95.9	0.013	93.3	98.5
miocardiopatia	77.7	0.028	72.2	83.3
miscigenação	90	0.020	86	94
miséria	89.5	0.021	85.5	93.6
mistério	96.8	0.012	94.5	99.2
mistura	99.1	0.006	97.8	100
mitomania	87.7	0.022	83.4	92.1
mobilidade	93.6	0.016	90.4	96.9
mobilização	94.5	0.015	91.5	97.6
moda	98.2	0.009	96.4	100
modernização	92.7	0.018	89.3	96.2
moeda	99.5	0.005	98.6	100
moleque	98.2	0.009	96.4	100
moléstia	72.7	0.030	66.8	78.7
monografia	95.5	0.014	92.7	98.2
montanhismo	89.5	0.021	85.5	93.6
morada	95.5	0.014	92.7	98.2

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
moral	99.5	0.005	98.6	100
morcego	99.5	0.005	98.6	100
morte	96.8	0.012	94.5	99.2
mosca	99.1	0.006	97.8	100
motim	90.5	0.020	86.5	94.4
motocicleta	98.6	0.008	97.1	100
motor	99.1	0.006	97.8	100
motorista	99.5	0.005	98.6	100
multiplicação	95.9	0.013	93.3	98.5
mural	99.1	0.006	97.8	100
muralha	97.7	0.010	95.7	99.7
murmúrio	82.7	0.026	77.7	87.8
murundu	85	0.024	80.2	89.8
musaranho	82.3	0.026	77.2	87.4
músculo	97.7	0.010	95.7	99.7
museu	99.5	0.005	98.6	100
nação	97.3	0.011	95.1	99.4
nambu	90.9	0.019	87.1	94.7
namorado	98.6	0.008	97.1	100
nariz	98.6	0.008	97.1	100
nascimento	99.1	0.006	97.8	100
natação	98.6	0.008	97.1	100
naturalidade	94.1	0.016	91	97.2
naufrágio	90.9	0.019	87.1	94.7
necessidade	99.1	0.006	97.8	100
néctar	91.8	0.019	88.2	95.5
negação	96.4	0.013	93.9	98.9
negociação	96.4	0.013	93.9	98.9
neném	98.6	0.008	97.1	100
neto	99.5	0.005	98.6	100
ninho	99.5	0.005	98.6	100
níquel	63.6	0.033	57.2	70
noção	98.6	0.008	97.1	100
nojo	98.6	0.008	97.1	100
norma	93.2	0.017	89.8	96.5
noticiário	94.5	0.015	91.5	97.6
novela	100	0.000	-	-
nuca	82.7	0.026	77.7	87.8
nuvem	99.1	0.006	97.8	100
objetividade	95	0.015	92.1	97.9
objetivo	100	0.000	-	-
objeto	99.5	0.005	98.6	100
observação	99.1	0.006	97.8	100
observatório	98.2	0.009	96.4	100
obstáculo	97.7	0.010	95.7	99.7
obtenção	87.7	0.022	83.4	92.1
ocasião	96.4	0.013	93.9	98.9
óculos	98.6	0.008	97.1	100
odor	96.4	0.013	93.9	98.9
ofício	93.6	0.016	90.4	96.9
óleo	95.9	0.013	93.3	98.5
olimpíada	83.6	0.025	78.7	88.6



## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
ombro	99.1	0.006	97.8	100
omissão	98.6	0.008	97.1	100
onça	100	0.000	-	-
onda	98.6	0.008	97.1	100
opção	98.2	0.009	96.4	100
oposição	94.1	0.016	91	97.2
oração	99.1	0.006	97.8	100
órfão	92.3	0.018	88.7	95.8
organização	99.5	0.005	98.6	100
organograma	92.7	0.018	89.3	96.2
origem	99.5	0.005	98.6	100
orixá	53.6	0.034	47	60.3
ortopedia	75	0.029	69.2	80.8
osso	96.4	0.013	93.9	98.9
ouro	97.7	0.010	95.7	99.7
ovelha	97.3	0.011	95.1	99.4
ovo	97.7	0.010	95.7	99.7
oxigênio	85.5	0.024	80.8	90.1
padeiro	96.8	0.012	94.5	99.2
página	99.5	0.005	98.6	100
painel	98.6	0.008	97.1	100
paisagem	90.5	0.020	86.5	94.4
paixão	100	0.000	-	-
palacete	85.5	0.024	80.8	90.1
palco	98.6	0.008	97.1	100
paleontólogo	70.9	0.031	64.9	77
paletó	71.4	0.031	65.3	77.4
palha	96.8	0.012	94.5	99.2
palhaço	98.6	0.008	97.1	100
palmada	96.4	0.013	93.9	98.9
pálpebra	70.5	0.031	64.4	76.5
panela	97.3	0.011	95.1	99.4
pano	99.5	0.005	98.6	100
panorama	95.9	0.013	93.3	98.5
pão	100	0.000	-	-
papo	99.5	0.005	98.6	100
par	99.5	0.005	98.6	100
parabéns	100	0.000	-	-
paradigma	88.6	0.021	84.4	92.9
paraíso	98.2	0.009	96.4	100
paralama	96.4	0.013	93.9	98.9
paralelepípedo	94.1	0.016	91	97.2
parâmetro	62.3	0.033	55.8	68.7
parceria	86.8	0.023	82.3	91.3
parede	97.7	0.010	95.7	99.7
parente	99.1	0.006	97.8	100
paróquia	93.2	0.017	89.8	96.5
parque	96.4	0.013	93.9	98.9
passagem	98.2	0.009	96.4	100
passarela	97.3	0.011	95.1	99.4
pata	99.5	0.005	98.6	100
pátio	95.5	0.014	92.7	98.2
pato	99.5	0.005	98.6	100

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
patrimônio	99.1	0.006	97.8	100
patroa	99.1	0.006	97.8	100
pavão	98.6	0.008	97.1	100
pecado	98.2	0.009	96.4	100
pecador	95.9	0.013	93.3	98.5
pedaço	97.3	0.011	95.1	99.4
pedra	98.6	0.008	97.1	100
peixaria	94.5	0.015	91.5	97.6
peixe	99.5	0.005	98.6	100
pente	98.2	0.009	96.4	100
percepção	95.5	0.014	92.7	98.2
percevejo	96.4	0.013	93.9	98.9
percurso	92.7	0.018	89.3	96.2
perdão	97.7	0.010	95.7	99.7
performance	79.5	0.027	74.2	84.9
periferia	93.2	0.017	89.8	96.5
perímetro	83.2	0.025	78.2	88.2
período	91.8	0.019	88.2	95.5
permanganato	82.7	0.026	77.7	87.7
permeabilidade	95.9	0.013	93.3	98.5
permissão	99.5	0.005	98.6	100
personalidade	95.9	0.013	93.3	98.5
perspectiva	80.9	0.027	75.7	86.1
perturbação	96.8	0.012	94.5	99.2
pescaria	95.9	0.013	93.3	98.5
pescoço	97.3	0.011	95.1	99.4
pétala	81.8	0.026	76.7	87
pijama	98.2	0.009	96.4	100
pinacoteca	88.2	0.022	83.9	92.5
pincel	99.1	0.006	97.8	100
pingente	93.2	0.017	89.8	96.5
pintura	99.5	0.005	98.6	100
pique	95	0.015	92.1	97.9
pires	99.5	0.005	98.6	100
piscina	98.6	0.008	97.1	100
planalto	96.4	0.013	93.9	98.9
planeta	96.4	0.013	93.9	98.9
planilha	94.1	0.016	91	97.2
plantação	98.6	0.008	97.1	100
plantão	97.3	0.011	95.1	99.4
plenitude	90	0.020	86	94
pó	100	0.000	-	-
poesia	98.6	0.008	97.1	100
polícia	95.9	0.013	93.3	98.5
poluição	99.1	0.006	97.8	100
ponte	97.7	0.010	95.7	99.7
pontuação	97.3	0.011	95.1	99.4
porão	96.4	0.013	93.9	98.9
porção	97.7	0.010	95.7	99.7
posição	97.3	0.011	95.1	99.4
posse	90.5	0.020	86.5	94.4
potássio	89.1	0.021	84.9	93.2
potência	98.6	0.008	97.1	100

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
povoado	98.2	0.009	96.4	100
praga	97.7	0.010	95.7	99.7
prática	94.1	0.016	91	97.2
prato	98.6	0.008	97.1	100
prazer	100	0.000	-	-
prazo	99.5	0.005	98.6	100
preceito	94.1	0.016	91	97.2
preço	95	0.015	92.1	97.9
preconceito	95.9	0.013	93.3	98.5
prefeito	94.1	0.016	91	97.2
preguiça	97.7	0.010	95.7	99.7
prejuízo	96.8	0.012	94.5	99.2
prêmio	96.8	0.012	94.5	99.2
premonição	92.3	0.018	88.7	95.8
preocupação	97.7	0.010	95.7	99.7
preparação	97.7	0.010	95.7	99.7
preposição	97.3	0.011	95.1	99.4
preservação	95	0.015	92.1	97.9
presídio	97.3	0.011	95.1	99.4
prestação	96.8	0.012	94.5	99.2
prestígio	94.1	0.016	91	97.2
pretensão	84.5	0.024	79.7	89.4
pretexto	91.8	0.019	88.2	95.5
primo	99.5	0.005	98.6	100
princesa	100	0.000	-	-
princípio	90	0.020	86	94
prisão	99.1	0.006	97.8	100
privilégio	98.6	0.008	97.1	100
proa	95.5	0.014	92.7	98.2
procedimento	95.9	0.013	93.3	98.5
processamento	96.8	0.012	94.5	99.2
profissão	98.6	0.008	97.1	100
proibição	95	0.015	92.1	97.9
projeto	92.7	0.018	89.3	96.2
prolongamento	97.7	0.010	95.7	99.7
promessa	98.2	0.009	96.4	100
propaganda	96.4	0.013	93.9	98.9
proporção	97.3	0.011	95.1	99.4
propriedade	95	0.015	92.1	97.9
protagonista	95.9	0.013	93.3	98.5
proteção	98.2	0.009	96.4	100
provedor	93.2	0.017	89.8	96.5
providência	96.8	0.012	94.5	99.2
província	88.6	0.021	84.4	92.9
prudência	92.3	0.018	88.7	95.8
psicologia	94.1	0.016	91	97.2
psicoterapeuta	89.5	0.021	85.5	93.6
puberdade	91.8	0.019	88.2	95.5
publicidade	95.5	0.014	92.7	98.2
pudor	95	0.015	92.1	97.9
pulmão	98.6	0.008	97.1	100
pulseira	97.7	0.010	95.7	99.7
punho	99.1	0.006	97.8	100

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
punição	94.5	0.015	91.5	97.6
pupila	90.5	0.020	86.5	94.4
pureza	100	0.000	-	-
quadra	98.6	0.008	97.1	100
quadrímotor	95	0.015	92.1	97.9
quantidade	98.2	0.009	96.4	100
quarto	93.2	0.017	89.8	96.5
queimadura	97.7	0.010	95.7	99.7
quilocaloria	90.5	0.020	86.5	94.4
quilombola	77.3	0.028	71.7	82.9
quilômetro	85	0.024	80.2	89.8
quimera	67.7	0.032	61.5	74
quintal	98.2	0.009	96.4	100
quiosque	96.4	0.013	93.9	98.9
quociente	84.1	0.025	79.2	89
rabó	99.1	0.006	97.8	100
raciocínio	87.3	0.023	82.8	91.7
rádio	98.6	0.008	97.1	100
rainha	100	0.000	-	-
raio	98.6	0.008	97.1	100
raiva	98.2	0.009	96.4	100
raiz	98.6	0.008	97.1	100
ramo	99.1	0.006	97.8	100
rapel	87.3	0.023	82.8	91.7
rapidez	94.1	0.016	91	97.2
raspão	96.4	0.013	93.9	98.9
realismo	94.5	0.015	91.5	97.6
realização	98.2	0.009	96.4	100
recebimento	95	0.015	92.1	97.9
receita	99.1	0.006	97.8	100
reclamação	98.6	0.008	97.1	100
reconhecimento	98.2	0.009	96.4	100
reconstrução	96.4	0.013	93.9	98.9
recreação	98.2	0.009	96.4	100
redação	99.1	0.006	97.8	100
rede	99.1	0.006	97.8	100
redoma	94.5	0.015	91.5	97.6
redor	94.5	0.015	91.5	97.6
redução	100	0.000	-	-
referência	97.7	0.010	95.7	99.7
reflexão	92.7	0.018	89.3	96.2
reflexo	95.5	0.014	92.7	98.2
refrigerante	96.8	0.012	94.5	99.2
regência	91.4	0.019	87.6	95.1
regime	99.1	0.006	97.8	100
regulamento	92.7	0.018	89.3	96.2
rei	100	0.000	-	-
reivindicação	85	0.024	80.2	89.8
relatividade	97.3	0.011	95.1	99.4
religião	97.7	0.010	95.7	99.7
remédio	99.5	0.005	98.6	100
remetente	83.6	0.025	78.7	88.6
remuneração	95.5	0.014	92.7	98.2

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
renda	95	0.015	92.1	97.9
rendimento	96.4	0.013	93.9	98.9
repercussão	89.5	0.021	85.5	93.6
repórter	92.7	0.018	89.3	96.2
representação	97.7	0.010	95.7	99.7
república	98.6	0.008	97.1	100
reputação	98.2	0.009	96.4	100
resignação	89.5	0.021	85.5	93.6
resolução	96.8	0.012	94.5	99.2
respiração	99.5	0.005	98.6	100
responsabilidade	98.2	0.009	96.4	100
retenção	92.7	0.018	89.3	96.2
reticência	89.5	0.021	85.5	93.6
retórica	90.9	0.019	87.1	94.7
retratação	85.9	0.024	81.3	90.5
reunião	98.2	0.009	96.4	100
reverência	90	0.020	86	94
revisão	98.6	0.008	97.1	100
revistaria	81.8	0.026	76.7	87
revitalização	83.6	0.025	78.7	88.6
revolução	98.2	0.009	96.4	100
riacho	99.5	0.005	98.6	100
ribeirão	94.1	0.016	91	97.2
rim	99.1	0.006	97.8	100
riqueza	98.6	0.008	97.1	100
risoto	94.1	0.016	91	97.2
rito	97.3	0.011	95.1	99.4
roça	93.6	0.016	90.4	96.9
romance	98.6	0.008	97.1	100
rosto	99.1	0.006	97.8	100
roteiro	95.5	0.014	92.7	98.2
rotina	100	0.000	-	-
rótula	86.8	0.023	82.3	91.3
ruído	98.2	0.009	96.4	100
sabedoria	100	0.000	-	-
sabonete	99.1	0.006	97.8	100
sabor	99.5	0.005	98.6	100
sacanagem	97.7	0.010	95.7	99.7
saco	99.5	0.005	98.6	100
sacola	99.5	0.005	98.6	100
sacrilégio	95.9	0.013	93.3	98.5
saguão	89.5	0.021	85.5	93.6
salário	97.7	0.010	95.7	99.7
salsicha	97.3	0.011	95.1	99.4
sangue	99.5	0.005	98.6	100
sapato	100	0.000	-	-
sapo	99.5	0.005	98.6	100
sarau	90.9	0.019	87.1	94.7
sargento	95	0.015	92.1	97.9
satélite	92.7	0.018	89.3	96.2
saudade	90.5	0.020	86.5	94.4
seção	93.6	0.016	90.4	96.9

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
secretaria	85	0.024	80.2	89.8
sedução	91.8	0.019	88.2	95.5
seio	98.2	0.009	96.4	100
selva	97.3	0.011	95.1	99.4
semáforo	94.5	0.015	91.5	97.6
sensação	92.3	0.018	88.7	95.8
sensibilidade	95.5	0.014	92.7	98.2
sentença	92.3	0.018	88.7	95.8
sentimento	99.1	0.006	97.8	100
sequência	97.7	0.010	95.7	99.7
setor	100	0.000	-	-
sexualidade	90.5	0.020	86.5	94.4
shopping	99.1	0.006	97.8	100
sílaba	90	0.020	86	94
símbolo	96.4	0.013	93.9	98.9
simulação	97.7	0.010	95.7	99.7
sinal	100	0.000	-	-
sindicato	95.5	0.014	92.7	98.2
sino	99.5	0.005	98.6	100
sinônimo	92.3	0.018	88.7	95.8
sinopse	82.7	0.026	77.7	87.8
sintaxe	60.9	0.033	54.4	67.4
síntese	62.3	0.033	55.8	68.7
sintoma	96.4	0.013	93.9	98.9
sisal	70.5	0.031	64.4	76.5
sismologia	84.1	0.025	79.2	89
sobremesa	98.6	0.008	97.1	100
sobrevivência	96.8	0.012	94.5	99.2
sócio	97.3	0.011	95.1	99.4
sociologia	93.2	0.017	89.8	96.5
sociólogo	75	0.029	69.2	80.8
soda	97.7	0.010	95.7	99.7
solicitude	89.1	0.021	84.9	93.2
solidão	98.2	0.009	96.4	100
solidariedade	93.2	0.017	89.8	96.5
solo	99.5	0.005	98.6	100
som	100	0.000	-	-
sono	99.1	0.006	97.8	100
sopa	98.2	0.009	96.4	100
sotaque	97.3	0.011	95.1	99.4
submissão	87.3	0.023	82.8	91.7
subordinação	90.9	0.019	87.1	94.7
substância	94.1	0.016	91	97.2
sucesso	97.3	0.011	95.1	99.4
sugestão	96.4	0.013	93.9	98.9
suicídio	96.4	0.013	93.9	98.9
sujeito	95.9	0.013	93.3	98.5
suor	98.6	0.008	97.1	100
superioridade	92.3	0.018	88.7	95.8
suporte	99.1	0.006	97.8	100
suspeição	85.9	0.024	81.3	90.5
sutiã	91.8	0.019	88.2	95.5

## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
talão	96.8	0.012	94.5	99.2
talento	97.7	0.010	95.7	99.7
talher	94.5	0.015	91.5	97.6
taverna	96.4	0.013	93.9	98.9
táxi	96.8	0.012	94.5	99.2
teatro	99.1	0.006	97.8	100
tecido	98.2	0.009	96.4	100
telecomunicação	95	0.015	92.1	97.9
telefonema	95.9	0.013	93.3	98.5
televisor	97.3	0.011	95.1	99.4
telhado	98.2	0.009	96.4	100
temperatura	99.1	0.006	97.8	100
tempestade	98.2	0.009	96.4	100
tendência	96.8	0.012	94.5	99.2
tensão	95.5	0.014	92.7	98.2
tentativa	98.2	0.009	96.4	100
término	74.1	0.030	68.3	79.9
terreno	97.3	0.011	95.1	99.4
terror	98.2	0.009	96.4	100
tese	83.6	0.025	78.7	88.6
tesoura	98.2	0.009	96.4	100
teste	98.2	0.009	96.4	100
tigela	99.1	0.006	97.8	100
tigre	99.1	0.006	97.8	100
timidez	95.5	0.014	92.7	98.2
tímpano	75.9	0.029	70.2	81.6
tinta	98.6	0.008	97.1	100
tiragem	98.6	0.008	97.1	100
tiroteio	96.8	0.012	94.5	99.2
título	98.6	0.008	97.1	100
toalha	99.5	0.005	98.6	100
tolice	96.4	0.013	93.9	98.9
tom	99.5	0.005	98.6	100
torneira	98.2	0.009	96.4	100
torpor	90.5	0.020	86.5	94.4
torre	97.3	0.011	95.1	99.4
tostão	95.5	0.014	92.7	98.2
totalidade	92.7	0.018	89.3	96.2
tradutor	96.8	0.012	94.5	99.2
transferência	98.2	0.009	96.4	100
transmissão	97.7	0.010	95.7	99.7
transplante	97.7	0.010	95.7	99.7
transporte	99.5	0.005	98.6	100
trapézio	94.5	0.015	91.5	97.6
travesseiro	96.8	0.012	94.5	99.2
travessura	97.7	0.010	95.7	99.7
trecho	99.5	0.005	98.6	100
treinamento	98.6	0.008	97.1	100
trem	100	0.000	-	-
tremor	95.9	0.013	93.3	98.5
tribo	99.1	0.006	97.8	100
tronco	96.4	0.013	93.9	98.9
trono	98.2	0.009	96.4	100



## Appendix C. Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
truque	96.4	0.013	93.9	98.9
tubo	97.3	0.011	95.1	99.4
túmulo	93.6	0.016	90.4	96.9
túnel	85.9	0.024	81.3	90.5
turismo	98.6	0.008	97.1	100
turista	99.1	0.006	97.8	100
tutor	98.6	0.008	97.1	100
união	99.5	0.005	98.6	100
uniformidade	92.3	0.018	88.7	95.8
universo	99.1	0.006	97.8	100
urgência	98.2	0.009	96.4	100
urubu	97.3	0.011	95.1	99.4
vaca	99.1	0.006	97.8	100
valorização	98.6	0.008	97.1	100
vantagem	98.6	0.008	97.1	100
vapor	99.1	0.006	97.8	100
varanda	97.7	0.010	95.7	99.7
vaso	98.2	0.009	96.4	100
vazante	87.7	0.022	83.4	92.1
vegetação	97.7	0.010	95.7	99.7
veia	95	0.015	92.1	97.9
veículo	98.2	0.009	96.4	100
velocidade	98.6	0.008	97.1	100
vendedor	93.2	0.017	89.8	96.5
veneno	97.3	0.011	95.1	99.4
verbo	98.2	0.009	96.4	100
verdura	97.7	0.010	95.7	99.7
veredicto	77.7	0.028	72.2	83.3
verme	98.6	0.008	97.1	100
veterinária	94.5	0.015	91.5	97.6
vídeo	98.2	0.009	96.4	100
vidro	99.5	0.005	98.6	100
viela	97.7	0.010	95.7	99.7
vigilância	96.4	0.013	93.9	98.9
vigor	96.4	0.013	93.9	98.9
viola	100	0.000	-	-
violação	95.5	0.014	92.7	98.2
violeiro	96.8	0.012	94.5	99.2
violência	98.6	0.008	97.1	100
violino	99.1	0.006	97.8	100
vírgula	94.5	0.015	91.5	97.6
virilidade	95	0.015	92.1	97.9
virtude	97.3	0.011	95.1	99.4
vírus	97.7	0.010	95.7	99.7
visitante	95.5	0.014	92.7	98.2
vítima	97.7	0.010	95.7	99.7
viveiro	97.3	0.011	95.1	99.4
vivência	98.6	0.008	97.1	100
vizinhança	96.4	0.013	93.9	98.9
volume	99.5	0.005	98.6	100
vômito	87.3	0.023	82.8	91.7
vulto	95.9	0.013	93.3	98.5

**Appendix C.** Continued...

LIST OF LOW FREQUENCY WORDS E-LEITURA II				
Words	Mean	Standard Deviation	95% Confidence Interval	
xale	88.6	0.021	84.4	92.9
zoneamento	91.4	0.019	87.6	95.1
zoonose	88.6	0.021	84.4	92.9