https://doi.org/10.23925/2176-2724.2022v34i4e58367

Adaptation of children's leveling formula for Brazilian Portuguese: preliminary results

Adaptação de fórmula de nivelamento de livros infantis para o português brasileiro: resultados preliminares

Adaptación de la fórmula de nivelación infantil al portugués brasileño: resultados preliminares

Helena Ferro Blasi[*]
Leia Gonçalves Gurgel[*]
Luciane Mari Deschamps[*]

Abstract

Introduction: Practices for the teaching of reading in Brazil can be represented by the adaptation and validation of a children's book leveling instrument already proven to be effective in another language and culture. **Objective**: The present study aims to adapt Hatcher's formula to level children's books for use in Brazilian Portuguese, making it available as a working tool to professionals in different areas with regard to the selection of books suitable for the age and stage in which readers are beginning their first years of literacy in Brazil. **Method**: The research will follow the following steps to adapt the leveling formula for children's books: (1) translation of the formula from the source language to the target language, that is, from English to Portuguese; (2) synthesis of the translated versions; (3) evaluation of the synthesis by expert judges; (4) evaluation of the formula by the target audience, considered here teachers from the early years of elementary school; (5) reverse translation of the instrument. **Results**: The translated formula for Children's Book Leveling presented 72% of content validity coefficient, in relation to clarity,

[*] Universidade Federal de Santa Catarina, SC, Brazil.

Authors' contributions:
HFB: Responsible for the study conception and data analysis, writing correction, critical revision, approval of the final version of the article and orientation. .
LGG: Responsible for the methodology, data analysis, writing correction, critical revision, approval of the final version and orientation.
LMD: Responsible for the article outline, elaboration of the research, literature chronogram and gathering, as for data collecting and analysis, writing of the article, submission and formalities.

Correspondence e-mail: Luciane Mari Deschamps - lucianemarideschamps@gmail.com
Received: 03/06/2022
Accepted: 03/02/2023

and 80% of practical relevance, proving to be a useful document, easy to apply and suitable for health professionals and of education that will be able to evaluate and level the books before recommending them to beginning readers. It is expected, in later studies, to apply this formula to facilitate the work in selecting titles indicated to the target audience.

Keywords: Comprehension; Reading; Writing; Child; Narration; Early Intervention Education.

Resumo

Introdução: Práticas para o ensino da leitura no Brasil podem ser representadas pela adaptação e validação de um instrumento de nivelamento de livros infantis já comprovadamente eficaz em outra língua e cultura. **Objetivo:** O presente estudo visa adaptar a fórmula de Hatcher para nivelar livros infantis para o uso no português brasileiro, disponibilizando-a como instrumento de trabalho aos profissionais de diferentes áreas no que concerne à seleção de livros adequados à idade e à etapa em que se encontram os leitores iniciantes em seus primeiros anos de alfabetização no Brasil. **Método:** A pesquisa seguirá as seguintes etapas para adaptação da fórmula de nivelamento de livros infantis: (1) tradução da fórmula do idioma de origem para o idioma-alvo, isto é, do Inglês para o português; (2) síntese das versões traduzidas; (3) avaliação da síntese por juízes experts; (4) avaliação da fórmula pelo público-alvo, considerados aqui professores dos anos iniciais do Ensino Fundamental; (5) tradução reversa do instrumento. **Resultados**: A fórmula traduzida de Nivelamento de Livros Infantis apresentou 72% de coeficiente de validade de conteúdo, em relação à clareza, e 80% de pertinência prática, demonstrando ser um documento útil, de fácil aplicação e adequado aos profissionais da área da saúde e da educação que poderão avaliar e nivelar os livros antes de indicá-los a leitores iniciantes. Espera-se, em estudos posteriores, realizar a aplicabilidade desta fórmula para facilitar o trabalho na seleção de títulos indicados ao público-alvo.

Palavras-chave: Compreensão; Leitura; Redação; Criança; Narração; Intervenção Precoce na escola.

Resumen

Introducción: Prácticas para la enseñanza de la lectura en Brasil puede ser representada por la adaptación y validación de un instrumento de nivelación de libros infantiles que ya ha demostrado su eficacia en otra lengua y cultura. **Objetivo**: Este estudio objetiva adaptar la fórmula de Hatcher para nivelar libros infantiles para uso en portugués, poniéndola a disposición como herramienta de trabajo para profesionales de diferentes áreas en lo que se refiere a la selección de libros adecuados a la edad y etapa en la que los lectores están comenzando sus primeros años de alfabetización en Brasil. **Método**: La investigación seguirá los siguientes pasos para adaptar la fórmula de nivelación para libros infantiles: (1) traducción de la fórmula del idioma de origen al idioma de destino, es decir, del inglés al portugués; (2) síntesis de las versiones traducidas; (3) evaluación de la síntesis por jueces expertos; (4) evaluación de la fórmula por parte del público objetivo, aquí considerados docentes de los primeros años de la enseñanza básica; (5) traducción inversa del instrumento. **Resultados**: Esta fórmula traducida presentó 72% de coeficiente de validez de contenido, en relación con la claridad, y 80% de pertinencia práctica, demostrando ser un documento útil, de fácil aplicación y adecuado para los profesionales de la salud y de la educación que serán capaz de evaluar y nivelar los libros antes de recomendarlos a lectores principiantes. Se espera, en estudios posteriores, aplicar esta fórmula para facilitar el trabajo en la selección de títulos al público indicado.

Palabras clave: Comprensión; Leer; Redacción; Niño; Narración; Intervención Temprana en la Escuela.

Introduction

Reading and writing require formal learning processes, as they involve activities of attention to the formal aspects of language, at all levels: phonological, morphological, syntactic, semantic and pragmatic[1]. In order to learn how to read, it is necessary that, at the beginning of the process, the child knows how to decode, that is, recognize the written word so that other procedures – at more elaborate levels – take place. The actions of decoding and understanding establish, among themselves, a complementary but asymmetric relationship, that is, it is possible to decode without understanding, but the opposite does not occur[2, 3].

It is important to highlight that the action of reading mobilizes a set of capacities and processes that includes from the knowledge of lexicon, phonology, morphology, syntax, and semantics to more elaborate cognitive functions, such as: reasoning capacity, attention, working memory, long-term memory, analysis and synthesis capacity, inferences, among others.

Therefore, learning how to read with proficiency means going through several stages of a process ranging from the recognition of letters, words until the understanding of a whole text[3, 4, 5, 6].

Reading accurately means being able to perform, appropriately, grapheme-phoneme decoding. It is a slow and laborious process that requires attention and memory. Neither less skilled readers nor readers at a very early stage of this learning process recognize words automatically, using decoding most of the time to read text [7, 8]. These readers use the phonological route to access the lexicon. However, with training, as the readers' apprentice expand their repertoire of known words and memorizes them, they start using strategies for recognizing words along the lexical route, that is, by reading, it rescues the representations of thousands of familiar words that are stored in a visual input lexicon obtaining, thus, the meaning from the set of all knowledge about the meanings of familiar words and, consequently, they have more time to understand the content of text [6, 7].

The formation of a reader capable of making use of essential semantic, syntactic, and phonic cues (to obtain both the accuracy of reading and fluency in search of comprehension of what is being read) should be the main objective since the first school years[9, 10].

It is worth mentioning that the accuracy of reading is an inseparable condition of fluency because this results not only from the speed of reading but also from such accuracy. As fluency increases throughout the learning process, reading accuracy reaches a certain level of correction. During the early stages of reading acquisition, accuracy is the most trained competence, and its mastery is important so that the child is gradually able to increase the automatism of reading, that is, fluency[11].

Books suitable for readers who are beginners are means for learning and developing reading comprehension[1]. Nevertheless, pre-established lists of books indicated to this audience are not always appropriate to the time of reading and/or to the situation in which the child is[12]. According to Hatcher[9] (2000), there are few formulas that can be used to level books that will be read by children in early school years and that consider reading accuracy as a classification criterion. Generally, the criteria used are related to comprehension and fluency, often defined from research involved reading of adults, youngsters and/or older children.

The formula for leveling proposed by Hatcher[9] (2000), described in his intervention program (Sound Linkage - an integrated programme for overcoming reading difficulties)[13] considered the levels of books used and adopted the same criteria for the elaboration of a formula that could be applied for the inclusion of titles that were not yet on the list proposed by the program, allowing it to be applied to any independent title.

The books on the *Sound Linkage* program list are organized into a continuum of 20 levels that vary in complexity, that is, ranging from books with simple texts, with many images and few words to stories like those found in the first and second year of elementary school. These levels are only approximate indicators of the possible difficulties encountered by the readers classified as beginners and are intended to serve only as a guide.

By having an instrument validated and adapted to Brazilian Portuguese (henceforth BP), which levels books for readers considered beginners, making the use of a formula that considers the predictors necessary for accurate and competent reading[1], professionals, both in health sciences (speech-language and hearing scientists, psychologists and psychotherapists, for example), as well as education (teachers, educators, pedagogical coordinators, among others) can count on an adequate

supply that will enhance the development of the skills involved in the acquisition of reading and writing. Consequently, the possibility of expanding horizons in search of best practices for teaching how to read in Brazil can be represented by the adaptation and validation of an instrument already proven effective in another language and culture[4,9].

It is important that these professionals, in aiming to make the child a competent reader, be aware of the need to develop skills aimed at this purpose, such as phonological awareness (ability to reflect on oral language and its components: words, syllables and phonemes), fluency in reading (ability to read a text with adequate precision, speed and expressiveness), vocabulary and comprehension. Ergo, the work requires effective and efficient strategies. The appropriate selection of written texts and/or literature books can collaborate significantly in this regard[7, 8, 11].

It is known that there are several aspects involved in the selection of a book, in addition to linguistic aspects, such as social, individual, and cultural aspects. Despite that, the present study focuses on the linguistic aspects considered for the accuracy of reading a previously chosen book and leveled according to the child's needs. Thus, the objective was to adapt and validate Hatcher's formula[9] for the leveling of children's books to PB, making it available, when completed all stages, as an instrument to professionals who want to offer and challenge beginners, aiming at the development of reading skills.

Methodology

This study is part of a larger research project, entitled EVIDENCE OF VALIDITY OF THE INTERVENTION PROGRAM "READING AND LANGUAGE TOGETHER – A REPORT - APPLIED IN BRAZIL, under number 15912919.2.0000.0121, in the Ethics Committee of the Federal University of Santa Catarina. The Free and Informed Consent Form, as well as the approval form were not necessary at this stage because it was the translation and adequacy of the document to the Brazilian reality, and it is, for that reason, in accordance with Resolution 466/2012.

It is known that the adaptation of an instrument must follow six essential steps: (1) translation of the instrument from the source language to the target language; (2) synthesis of translated versions; (3) evaluation of the synthesis by expert judges; (4) evaluation of the instrument by the target audience; (5) reverse translation of the instrument (back translation), and (6) pilot study [14, 15]. The authors of the present study considered the validation of Hatcher's formula content to begin the first stages of the process: (1) translation of the instrument from the source language to the target language; (2) synthesis of translated versions and (3) evaluation of synthesis by expert judges[14, 15]. Due to the pandemic by Coronavirus, access to the target audience was compromised, so the steps not performed will happen in an opportune time.

Validating the content of a given instrument means putting it to the judgment of different examiners about an instrument, which should analyze the items in relation to the content and relevance of the objectives to be evaluated, as well as make suggestions to remove, add or modify items[16]. Some authors perform content validation only by qualitative analysis from the evaluation of a committee of experts, while other authors consider quantitative analysis to be of great relevance. The authors of this study considered the qualitative analysis of the content of the items of Hatcher's leveling formula[9].

The first stage of this study was the translation of the instrument formula made by two bilingual professionals (English/Portuguese), with experience in translation and knowledgeable of the original document. In the second stage, we obtained the synthesis of the translations performed by the two bilingual translators. And, to make up the third stage of the validation process, a committee of expert judges, composed of five professionals, with experience in the area of speech language therapy and education, was chosen for convenience to analyze the formula translated to PB and that will be used for the leveling of children's books. The judges were sent the following documents: an invitation letter to participate in the study and, after acceptance, an explanatory letter to clarify the objective and purpose of the study. The team of experts was also guided on how they should complete the tables after the analysis of the translated instrument.

The judges received two tables to be filled with their opinions after full reading of the translated instrument so that they could analyze it, compar-

ing it to the original, if necessary. Each judge was instructed to comment and suggest questions that could be included and/or excluded and/or altered from the instrument. To this end, they used a scale of one (1) to five (5) points to evaluate the content validity coefficient (CVC) of language clarity (= CVCcl) and content validity coefficient (CVC) of practical pertinence (= CVCpp) in the five items, starting from "very little relevance/clarity" (answer 1) to "a lot of pertinence/clarity" (answer 5). In a second table, they should answer "yes", "partially" or "no" to aspects related to understanding, content, and clarity of the instrument as a whole.

The cut-off point adopted to determine satisfactory levels of CVCcl and CVCpp was 80% for each of the items, as well as for the CVCt (coefficient of validity of content of language clarity and general practical pertinence) of the entire instrument in relation to these criteria. This percentage was adopted due to the reduced number of evaluators, since, in the literature, studies suggest a minimum of five evaluators for a rate of 90%[17].

Results

The specialists in the field of speech language therapy and education performed the evaluation, judging each item on a scale of five questions. The evaluation of the instrument was considered positive by the pairs of the area, reaching close to the maximum score in all items. Based on the average of the evaluation regarding language clarity and practical relevance, the content validity coefficient (CVC) was calculated to make up the results of the present study.

Concerning the clarity of language, it was observed that the instrument presented CVCcl = 72%, a value below expected, according to Alexandre and Coluci[17] (2011). In practical pertinence (CVCpp), the coefficient was 90.4%. The expected average for these aspects, according to this author, is 80%. Chart 1 below compiles the answers of the four judges in relation to questions 2, 3, 4 (items a, b, e) with respect to the clarity and relevance of the instrument.

Chart 1. Answers from the judges' analysis in relation to the clarity and pertinence of the translated formula.

	Clarity	Clarity	Clarity	Clarity	Clarity	
Questions	**Scores Judge 1**	**Scores Judge 2**	**Scores Judge 3**	**Scores Judge 4**	**Scores Judge 5**	**Partial Percentage**
2	4	5	4	4	2	76%
3	4	5	3	3	2	68%
4a	4	3	3	4	2	64%
4b	4	3	3	3	4	68%
4e	4	2	5	5	5	84%
Total CVC – Clarity = 72%						
	Pertinence	**Pertinence**	**Pertinence**	**Pertinence**	**Pertinence**	
Questions	**Scores Judge 1**	**Scores Judge 2**	**Scores Judge 3**	**Scores Judge 4**	**Scores Judge 5**	**Partial Percentage**
2	5	5	5	5	4	92%
3	5	5	3	5	4	88%
4a	5	5	3	5	3	84%
4b	5	5	3	5	5	92%
4e	5	4	5	5	5	96%
Total CVC – Practical pertinence = 90.4%						

It is observed that questions 3, 4 (items a, b) were those that received scores between 4 and 2 points, with percentage values of 68%, 64% and 68%, respectively, demonstrating that the clarity of the content of each item, after translation to BP, could present difficulties with reference to comprehension for those using the formula. On that account, the results, because they were below the expected average of 80%, required adjustments to make the item clearer. Questions 3 and 4 (item a) also presented values below 80% in connection with pertinence, requiring, thus, adjustments.

In the next chart, we can find the percentage values of the experts' perceptual evaluation on the subject of the instrument content. At this stage, the clarity of the language and the practical relevance were evaluated, so the judges should signal their opinions with "yes", "partially" or "no". Some considerations were made and will be commented later, but not all were accepted by the authors of this study at the time of defining the changes. Among the accepted suggestions, questions 3 and 4 (item e) were the most criticized and the ones that received most of the adjustments.

Chart 2. Experts' assessment of the form, structure, and language of the instrument.

	YES	PARTIALLY	NO
1. In your perception, are the contents of the instrument clear and relevant to the proposed objective?	25%	75%	0%
2. In your opinion, are the examples clear and represent the contents covered?	25%	75%	0%
3. In your opinion, is the header proposed for the questionnaire adequate?	25%	75%	0%

The original formula proposed by Hatcher[9], in Chart 3 below, in English, considered variables that represent semantic, syntactic, and phonic aspects that are recognized as important for reading accurately in English. The scope of reading accuracy, according to this author and to the reality of that country, is limited to the initial period of literacy that is equivalent to the first two years in school.

Chart 3. Hatcher's formula[13]

Form for use in calculating a book's level of difficulty.

1. Book title: _____
Publisher: _____
Book series and number (or Author): _____
School: _____ Rater: _____

2. Number of pages (including text and pictures relating to the story in the book. The title-page is included only if the title immediately precedes the story, is printed in setence-case format and has a picture that is part of the story. If a story finishes on page 30 and starts on page 5 the "number of pages in the book" is 26 (30 – 4 = 26) because four pages aree not being counted. [ ]

3. Starting from the centre of the counted pages, lightly bracket a passage of 100 words, including 50 words in each direction. Include words in speech-bubbles if they are part of the story-sequence but not words prindet in CAPITAL letters. If the book contains several stories, select the passage of 100 words from the longest story that is near the centre of the book. If there are < 50 words to the left of the centre of the book, make up the balance of the 100 words to the right. Otherwise, count all of the words in the book. Number of words in the book (0 to 100). Write 101 if the number exceds 100. [ ]

4. Using the sample passage of 100 words, complete the following sections. If the book contains fewer than 100 words, use all of the words that are in the book.

4a. Maximum number of lines of print on one of the pages containing the passage of 100 words. The line count may extend outside the range of 100 words provided that the page contains some of the words in the sample passage. A column, or sloping-line, of single words (e.g., down/ down/ down) should be counted as a single line. [ ]

4b. Write down each word with five or more letters (e.g., Billy (five letters), Billy's (six-letters) and goodbye (seven-letters). Hyphenated words count as two or more words (e.g., good-bye counts as two words of four and three letters. Repeated words count once only (e.g., Billy, Billy's and Billy-goat, count as just Billy (five) and Billy's (six-letters).

8 + letters words	7 - letters words	6 - letters words	5 - letters words

4c. Totals letter words

4d. Number of words in the longest sentence within the passage of 100 words. The sentence should not consist of a list, a series of phrases with conjunctions or extend over more than two pages. [ ]

4e. Record a 1 in each box if the sample passage of 100 words contains an example of:
i) A contraction [ ] (e.g., *it's*, *I'm*, *didn't*). Possessives (e.g., Jo's bike) do not count.
ii) A negative word [ ] (e.g., *no*, *didn't*)
iii) An auxiliary plus a main verb [ ] (essentially two or more words, e.g., *are going, has seen, do go, can hop, may sing, will fall, shall come, must run, could come, might eat, whould swin, should write*). States (e.g., *was cold, is cross*) do not count.
iv) A change of verb tense [ ] (e.g., *I will go. …. They are big. / "It's is here!" she said*).

Return this form to (name and adddress) for the book-level to be calculated. Reading scheme books may be graded with the minimun of effort if teachers (witchin & between schools) share the task. The levels will be kept on a date-base and distributed to schools as a graded-book list.

In his study, Hatcher[9] proved that predictor variables can be used for reading children's books, defining twenty levels for book classification, according to reading recovery program guidelines that selected a series of books for teaching reading to young children. The author, when elaborating the formula, considered five variables to represent the syntactic, semantic, and phonic aspects of the text: (1) the number of words in the longest sentence of the selected passage; (2) the number of words with six or more letters; (3) syntactic resources; (4) the number of pages in the book and (5) the number of words in the book. These same factors, as well as the variables considered by Hatcher[9], were maintained in the adaptation of the formula proposed in this study.

The variables defined by Hatcher[9] showed a high degree of statistical reliability for the leveling of children's books. With that, it was found that the formula for the classification of books to be read by children in the first two years of reading development, considering such predictor variables, becomes valuable.

Although four of the five variables selected by the author for the leveling of the books remained the same in this study, the variable "Syntactic Resources" had to be adapted to the characteristics of BP. The authors of the present study consider the type and quantity of some sentences in PB as complicating factors for accurate reading by children who are beginning the literacy process.

The characteristic syntactic variables of English were: sentences with contractions (e.g.: I'm; didn't), with negative word (e.g., no or didn't), with verbal locution (auxiliary verb and main verb - essentially with two or more words, for example: are going; has seen; do; go; can hop; my sing; will fall; shall come; must run; could come; might eat; would swim; should write); with verbs indicating state (e.g.: was cold; is cross) or with sentence sequences with verb tense change (e.g.: I will go. They are big. / "It is here!" she said).

There was yet the need for adaptations, since the syntactic questions that can bring difficulties to readers who are considered beginners in the English language are not the same when referring to the PB.

The authors of the present study considered predictor variables that can be used to level children's books some types and structures of sentences expressed in the written text. When translating the formula into PB, the syntactic resources considered were sentences in passive voice; sentences in reverse order; sentences with auxiliary verbs (have, to be and there to be) + main verb; and sentences with subject predicate.

In this same item, according to the analysis of the expert judges, in addition to the terminology of the types of sentences, examples would be necessary since the formula can be used by several professionals and not only by those who have specific knowledge in the field of Languages and Literature.

It is appropriate to point out that the translated version of the formula will, indeed, be applied to the books proposed in the future moment with the public to which it is intended in a pilot study, according to the methodology of this type of study. Chart 4 hereinafter compiles such information.

Chart 4. Variables proposed by Hatcher and judges' considerations.

Variable	Judges' considerations
Number of words in the longest sentence.	The number of words in the longest complete sentence was considered in the selected excerpt. When a book consisted only of a list or a series of sentences, the number of words in the longest sentence (for a list) or in the longer pair of sentences (for a series of sentences) was counted.
The number of words that contains six or more letters.	The number of words with six or more letters in the text sample was counted. The words in speech balloons were included only in cases where they belonged to the story sequence and were not printed in capital letters. Hyphen words in PB were counted as two or more words (e.g.: "rainbow", "umbrella", "Monday", were counted as two words); repeated words were counted only once.
Syntactic resources	The counting process of syntactic resources in the sample of the text to be considered is: number of sentences with the use of passive voice; number of sentences in reverse order (predicate + subject); number of sentences using the auxiliary verb + main verb; number of sentences with subject predicate. The maximum score for this variable is four.
The number of pages in the book.	This is a counting process for the number of pages in the book, including text and images related to the story. The title page was included only where the title immediately preceded it and was printed using uppercase letters. To include the cover page, it was also necessary to include an image that was part of the story and did not contain another writing or symbol.
The number of words in the book.	It's a counting process of the number of words in the book, up to a maximum of 100. To facilitate the use by teachers, the longer books were coded with 101 words.

According to the judges, in addition to the items present in the leveling formula, it is important to consider, when selecting children's books indicated to beginners, issues such as: textual genre (wonderful tales, fairy tales, fables, legends, science fiction narratives, jokes, comic books, news, among others); the typography used in books (capital, script, cursive, bold, italics, etc.); the size of the letters; the type of illustrations (painting, collage, manual drawing, photography, etc.); the color of the illustrations; the material from which the books are made (cardboard, plastic, fabric, etc.). The item "clarity" (CVCcl) presented a total of 72%, below the expected, which, according to Alexandre and Coluci[17], should be 80%. Several questions, comments, and suggestions for rewriting the questions were considered, in part, in the final adaptation of the content of the instrument for leveling children's books.

Discussion

The original instrument of this study was developed in a specific environment, culturally and socially different from other countries, which is why its use in the Brazilian population still needs cultural adaptation. According to Borsa, Damasio and Bandeira[19], these differences are not solved only with a simple literal translation, and it is necessary to consider the procedure of cultural adaptation and the application of the formula in the target audience.

The purpose of this study was to validate the content of a book leveling formula for readers who are considered beginners proposed by Hatcher[9], since there are few valid and reliable legibility formulas aimed at children who are in their early years of literacy. Hatcher[9] draws attention to the formulas they use, for leveling books, the fluency criterion when the goal is to offer the beginners the development of the ability for reading accuracy.

Notwithstanding, there are skills involved in the act of reading that need to be considered before the final result of reading: understanding what has been read. It is emphasized that the ability to decode is important, if not essential for understanding. The beginners may have problems understanding the text due to the effort expended in decoding words, so to read fluently and understand what is read, all previous steps need to happen.

According to Hatcher[9], legibility formulas generally do not consider the properties of the text, such as the number of necessary inferences, text layout, quality of illustrations, book size, relationship between images and text, or factors related to the reader, such as vocabulary, life experience, language pre-dependence, reading purpose, prior

knowledge, and level of interest. The author defends the idea that, for children who are learning to read accurately, a formula that has this skill as a criterion becomes more appropriate than those linked only to fluency.

It is reinforced that there are three actions in reading that are connected to each other and that should be considered: precision, fluency, and comprehension. If the reader gives more attention to decoding, for example, the reader will present a non-fluent reading, preventing him from advancing and understanding the meaning of what is written. To that end, recognizing words is the engine that commands the reading process, that is, reading is the product of the interaction between decoding processes and linguistic comprehension.

Decoding can be understood as converting graphic symbols into sounds, whether in reading aloud or silently. Decoding, therefore, consists of a process of recognition and continued grouping of linguistic units, leading to the text and, when this skill is mastered, it is possible to reach the comprehension of reading, since decoding and comprehension complement each other[20]. Howbeit, it should be noted that reading should not be understood as a process of mere decoding of printed code, because it aims at something greater: the understanding of a continuous text.

Reading requires high-level processing, and understanding is impaired if the reader is focused only on low-level processing – as is the case with the identification of words alone. It is a complex process whose learning requires teaching because there are many conditions for success[7].

In consideration of that, it is suggested that the evaluation of reading includes word recognition, linguistic comprehension, and fluency. This approach to evaluation allows a comprehensive explanation of the individual's difficulty in addition to offering useful information to an intervention program.

As far as the evaluation of these processes, research[3, 5, 8, 11, 12, 21, 22, 23] in the Brazilian context has considered accuracy in the act of reading as one of the necessary characteristics for the development of strategies for word recognition and reading comprehension throughout the progression of elementary school.

Even though the main goal of reading is comprehension, it is observed that several instruments for evaluating reading comprehension and fluency are also based on the evaluation of accurate reading of words and pseudowords to reach the comprehension of the text itself.

A question to be considered in PB refers, in addition to the concern with the establishment of the grapheme/phoneme relationship, to the morphological elements encoded in the writing process[24], because these factors can hinder the accuracy of reading and, consequently, fluency and comprehension. Among the five variables proposed by the formula[9] author are the number of syllables that make up the words and the amount and type of sentences that make up the sample of the text of the books that will be leveled.

PB is an alphabetical language, as well as other languages (French, Spanish, Finnish, English, German, etc.), i.e., it uses the alphabet as a minimum unit of representation of its writing. But still, these languages are quite distinct from each other regarding the grapheme/phoneme relationship since there are languages whose relationship may be – to a limited extent – consistent. In view of this, the learning of reading in alphabetic languages implies, firstly, that the beginner learns to transform graphemes into phonemes, making use of the phonological route. Both grapheme and phoneme are abstract entities, so this relationship can vary greatly, so these individuals may present comparatively reading/writing learning difficulties in certain alphabetical languages[24].

In the matter of language transparency, there are systems considered puzzling (as is the case in English, for example), whose relationship does not always correspond a phoneme for a grapheme. In systems where this relationship is more consistent, learning often flows more easily because they are more transparent systems (such as Portuguese). But in spite of that, this does not imply a reading learning process without difficulties to the beginners. Flôres[24], citing the study by Veloso[25] whose study surveyed the theme opacity/transparency of alphabetic languages, comparing them - concluded that the most significant differences between alphabetic systems are the syllabic complexity and spelling. From this finding about reading in particular, the syllabic structures would affect decoding, while the orthographic depth would affect the reading of unknown words and pseudowords.

It is paramount to emphasize that the formula proposed by Hatcher[9] does not aim to evaluate the reading itself, but aims to contribute with a formula

that selects, by the criterion of reading accuracy, the material to be read, that is, the text written in books indicated to readers who are in the first three school years.

Thus, elements of the text were considered, which, if present, could impair the accuracy of reading. How easy or difficult the book will be for beginners will depend, therefore, on factors that predict reading, such as the number of syllables, words in the sentence and morphosyntactic complexity[9].

Based on the results obtained, it was observed that the Children's Book Leveling Formula presented 72% of CVC clarity and 90.4% of CVC practical relevance of content validity that are acceptable, which denotes that it is a formula that can be used by health-related and education professionals.

Because it is standardized and easy to apply, the formula may allow better leveling of books, especially if you consider the proposed variables, as well as its adaptation to the public intended, in this case, children in the first two years of the literacy process.

A common observation of the board of evaluators of the instrument was the number of items to be analyzed. For this reason, each judge was given tables to be filled to facilitate the analysis and recording of the answers.

It should also be recalled that some limitations observed in the present study, especially involving the small number of evaluators, which made it difficult to compare with the parameters used in other findings in the literature, in addition to a more robust evaluation of the proposed document. It should be noted, however, that although the number of judges was only four, all were careful to evaluate each item of the formula, making comments when necessary.

Although the evaluation of content validity is a fundamental step when trying to adapt a new instrument to a new culture, it may present limitations when it comes to the subjectivity involved in the evaluation process by the experts, because it ends up considering aspects such as the appearance of the book until the language used in the narrated story.

This study has considerable advantages in terms of the leveling of books aimed at the accuracy of reading by readers who are in the process of literacy. The professional, when using the instrument already adapted to the Brazilian reality, can level several children's books according to the child's skills with whom he is working, without the necessity of catalogs and ready lists, made by the publishing market that may present different objectives and intentions.

Conclusions

It was found that there is a gap in the literature about instruments that use formulas to level books for children who are in the process of literacy. Hatcher's formula proved to be efficient for the leveling of children's books because it considers the variables of the language in question as important for the accuracy of reading, besides being this essential criterion for understanding the text - the final objective of reading itself.

As the results related to pertinence and practice were acceptable, it is denoted that it is a formula that can be used by health-related and education professionals who wish to level books according to the child and stage in which he/she is in the learning process of reading. Keeping that in mind, Hatcher's formula[9] for BP contributes to the selection, by the criterion of reading accuracy, of materials to be read, that is, of the texts written in books indicated to readers who are in the first three school years.

Because this study has fulfilled the first stages of translation of the formula, it is possible to follow up the work, considering the other steps: the evaluation of the formula by the target audience - in this case, teachers of the early years of elementary school - the reverse translation and validation of the formula. Only with all the steps completed, it is possible to conclude whether it fulfills its function of properly leveling the children's books that will be read by readers of BP who are at the beginning of the reading learning process.

References

1. Almeida GR et al. Consciência fonológica no processo de aquisição da leitura e da escrita (dissertação de mestrado). Universidade Federal de Uberlândia. Uberlândia, MG; 2018. http://dx.doi.org/10.14393/ufu.di.2018.596

2. Amorim MCB, Farago AC. As práticas de leitura na educação infantil. Cadernos de Educação: Ensino e Sociedade. Bebedouro, SP, 2(1): 134-54; 2015.

3. Peruzzo A. A importância da literatura infantil na formação de leitores. Cadernos do CNLF, XV (5): 95-104; 2011. Disponível em: http://www.filologia.org.br/xv_cnlf/tex_completos/a_importancia_da_literatura_infantil_na_ADREANA.pdf.

4. Basso FP, Salles JF. Instrumento de identificação das práticas de ensino da leitura e da escrita. Ciências & Cognição, 21(2); 255-73; 2016. Disponível em: https://www.cienciasecognicao.org/revista/index.php/cec/article/view/1267

5. Peroza OT. Ensinar e aprender a ler: projetos de leitura na escola. (dissertação de Mestrado). Universidade Federal da Fronteira Sul. Programa de Pós-Graduação em Estudos Linguísticos. Chapecó, SC; 2019. Disponível em: https://rd.uffs.edu.br/handle/prefix/3245

6. Freitag RMK, Sá JJS. Leitura em voz alta, variação linguística e o sucesso na aprendizagem inicial da leitura. Ilha Desterro, Florianópolis, 72(3): 41-62;2019. https://doi.org/10.5007/2175-8026.2019v72n3p41

7. Pereira VW, Viana FL, Morais J. Processamento da leitura: decodificação e compreensão. Letras de Hoje, 54(2): 108-11; 2019. https://doi.org/10.15448/1984-7726.2019.2.34946

8. Basso FP, Piccolo LR, Miná CS, de Salles JF. Instrumento de Avaliação da Fluência de Leitura Textual: da decodificação à compreensão de leitura. Letras De Hoje, 54(2): 146-153; 2019. https://doi.org/10.15448/1984-7726.2019.2.32519.

9. Hatcher PJ. Predictors of Reading Recovery book levels. Journal of Research in Reading, 23(1): 67-77; 2000. Department of Psychology, University of York, UK. https://doi.org/10.1111/1467-9817.00103.

10. Pazeto TCB, León CBR, Seabra AG. Avaliação de habilidades preliminares de leitura e escrita no início da alfabetização. Rev. Psicopedagogia, 34(104): 137-47; 2017. Disponível em: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S0103-84862017000200004&lng=pt&nrm=iso.

11. Mousinho R et al. Compreensão, velocidade, fluência e precisão de leitura no segundo ano do ensino fundamental. Rev. Psicopedagogia, 26(79): 48-54; 2009. Disponível em: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S0103-84862009000100007&lng=pt&tlng=pt.

12. Costa YA. Consciência fonológica: um estudo acerca da formação de professores por meio do pacto nacional pela alfabetização na idade certa (PNAIC). Ministério da Educação. Fundação Universidade Federal de Rondônia. Departamento de Ciências da Educação – DECED. Campus de Ariquemes. Ariquemes, RO; 2019. http://ri.unir.br/jspui/handle/123456789/2927.

13. Hatcher P. Sound LinkageSound Linkage: Integrated Programme for Overcoming Reading Difficulties. 2ª ed. Chichester: Wiley-Blackwell; 2001.

14. Hambleton RK. Issues, Designs, and Technical Guidelines for Adapting Tests Into Multiple Languages and Cultures. In: Hambleton RK, Merenda PF, Spielberger CD (orgs.). Adapting Educational and Psychological Tests for Cross-Cultural Assessment. Lawrence Erlbaum Associate, 3-38; 2005.

15. Sireci SG, Yang Y, Harter J, Ehrlich EJ. Evaluating guidelines for test adaptations: A methodological analysis of translation quality. Journal of Cross-Cultural Psychology, 37(5): 557-56; 2006. https://doi.org/10.1177/0022022106290478

16. Raymundo VP. Construção e validação de instrumentos: um desafio para a psicolinguística. Let Hoje; 44(3): 86-93; 2009. Disponível em: https://revistaseletronicas.pucrs.br/index.php/fale/article/view/5768

17. Alexandre NMC, Coluci MZO. Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. Ciência Saúde, Rio de Janeiro, 16(7): 3061-68; 2011. https://doi.org/10.1590/S1413-81232011000800006.

18. Simpson MM. Suggestions for teaching reading infants classes. Wellington: Department of Education; 1962.

19. Borsa JC, Damasio BF, Bandeira DR. Adaptação e Validação de Instrumentos Psicológicos entre Culturas: Algumas Considerações. Paidéia, v. 22, n. 53, p. 423-432; 2012. https://doi.org/10.1590/S0103-863X2012000300014.

20. Landim MRM. Compreensão leitora: possibilidades de avaliação ao término do ciclo de alfabetização; 2017. Disponível em: http://hdl.handle.net/11624/1507.

21. Capovilla AGS, Gutschow CRD, Capovilla FC. Habilidades cognitivas que predizem competência de leitura e escrita. Psicologia: teoria e prática, 6(2):13-26; 2004. Disponível em: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1516-36872004000200002&lng=pt&tlng=pt.

22. Capovilla FC, Negrão VD, Damázio M. Teste de vocabulário por figuras USP-TVfusp. São Paulo, Memnon; 2011. Disponível em: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1677-04712006000200009&lng=pt

23. Machado APG, Freitag RMK. Pistas dos processos de decodificação que levam à compreensão da leitura. Letras de hoje, 54(2): 132-45; 2019. https://doi.org/10.15448/1984-7726.2019.2.32509.

24. Flôres OC. Leitura e consciência linguística. Letras de Hoje, 53(1): 149-57; 2018. https://doi.org/10.15448/1984-7726.2018.1.28535. Disponível em: https://www.scielo.br/j/lh/a/8bXQHRM4kSLrvyNyPdgdPnd/?format=pdf&lang=pt.

25. Veloso J. A língua na escrita e a escrita da língua. Algumas considerações gerais sobre transparência e opacidade fonêmicas na escrita do português e outras questões. Da Investigação às Práticas. Estudos de Natureza Educacional, 6(1): 49-69; 2005. Disponível em: https://www.researchgate.net/profile/Joao-Veloso-5/publication/259892028_A_lingua_na_escrita_e_a_escrita_da_lingua_Algumas_consideracoes_gerais_sobre_transparencia_e_opacidade_fonemicas_na_escrita_do_portugues_e_outras_questoes/links/00b4952e6d8cd1d859000000/A-lingua-na-escrita-e-a-escrita-da-lingua-Algumas-consideracoes-gerais-sobre-transparencia-e-opacidade-fonemicas-na-escrita-do-portugues-e-outras-questoes.pdf.