Dom Casmurro: Intensifying the Classics with Gamified Graphic Graded Readers

Dom Casmurro: Potenciar os clássicos com ‘Graded Readers’ gráficos gamificados

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DOM CASMURRO: INTENSIFYING THE CLASSICS WITH GAMIFIED GRAPHIC GRADED READERS

Storytelling with mobile media has revolutionized one of the oldest callings in the world, the art of telling a story. Despite these various and exponential transformations, the art of storytelling remains a critical part of culture and language studies. This paper aims to leverage graphic novels remediated from Dom Casmurro by Machado de Assis and further revitalize the book for students of Portuguese as a foreign language via graded reader leveling techniques and gamification. Additionally, the gamified graphic graded reader hypothesis of Dom Casmurro will use an interdisciplinary approach combining both corpus-based frequencies and translation in the production of the various layers of the gamified text. The levels will be based on the Interagency Language Roundtable (ILR) scale which is the foundational pillar in the US Department of Defense language training context. The objective is to create an intensified version of Dom Casmurro to engage language professionals and students alike.

Keywords: gamified graphic graded reader; remediation; Dom Casmurro.

DOM CASMURRO: POTENCIAR OS CLÁSSICOS COM ‘GRADED READERS’ GRÁFICOS GAMIFICADOS

As narrativas digitais revolucionaram uma das mais antigas vocações do mundo, a arte de contar uma história. Apesar destas várias e exponenciais transformações, a arte de contar histórias continua a desempenhar um papel fundamental nos estudos culturais e linguísticos. Este artigo visa potenciar os romances gráficos adaptados a partir da obra Dom Casmurro, da autoria de Machado de Assis, e promover ainda mais os livros destinados a alunos de português como língua estrangeira através de ‘graded readers’ – adaptação ao nível de conhecimentos linguísticos do aluno – e de gamificação. Além disso, a hipotética versão gráfica gamificada do ‘graded reader’ adaptado a partir da obra Dom Casmurro basear-se-á uma abordagem interdisciplinar que conjuga incidências a partir do corpus da obra e a tradução a fim de produzir as várias camadas do texto gamificado. Os níveis serão baseados na escala ILR (Interagency Language Roundtable), a qual descreve níveis de proficiência num idioma e constituiu o pilar fundamental no contexto da formação linguística do Departamento de Defesa dos EUA. O estudo tem por objetivo a criação de uma versão enriquecida de Dom Casmurro para envolver tanto os profissionais linguísticos como os alunos.

Palavras-chave: graded reader gráfico gamificado; adaptação; Dom Casmurro.

DOM CASMURRO : INTENSIFIER LES CLASSIQUES AVEC DES LECTEURS GRAPHIQUES LUDIQUES

La narration avec les médias mobiles a révolutionné l’un des plus vieux métiers du monde, l’art de raconter une histoire. Malgré ces transformations diverses et exponentielles, l’art du récit demeure un élément essentiel des études culturelles et linguistiques. Cet article vise à exploiter les romans graphiques restaurés de Dom Casmurro par Machado de Assis et à revitaliser davantage le livre pour les étudiants de portugais langue étrangère grâce à des techniques de nivellement des lecteurs et de ludification. De plus, l’hypothèse graphique ludique du lecteur de Dom Casmurro utilisera une approche interdisciplinaire associant à la fois des fréquences basées sur le corpus et la traduction dans la production des différentes couches du texte ludique. Les niveaux seront basés sur l’échelle de l’Interagency Language Roundtable (ILR) qui est le pilier fondamental dans le contexte de la formation linguistique du Département de la Défense des États-Unis. L’objectif est de créer une version intensifiée de Dom Casmurro pour engager les professionnels de la langue et les étudiants.

Mots-clés: lecteurs graphiques ludiques; remédiation; Dom Casmurro.
Introduction

Teaching Portuguese classics such as *Dom Casmurro* to students learning Portuguese as a foreign language is relevant in the modern world of misinformation where students will need to understand how to read in their new language critically just as they would in their native language. Instructors must mold and adapt these classics to enhance the student’s relationship with them, preserving the opportunities to gain critical thinking skills in a foreign language. Gamifying graphic readers which have already been adapted from classics give students a fun way to interact with texts and encourage more critical thinking skills while also encouraging further study.

Storytelling with mobile media has revolutionized one of the oldest callings in the world, the art of telling a story. Despite these various and exponential transformations, the art of storytelling remains a critical part of culture and language studies. The US Military incentivizes the acquisition of foreign languages such as Brazilian and Continental Portuguese by paying up to $500 a month per language (https://www.militaryrates.com). Due to the Department of Defense treating Brazilian and Continental Portuguese as two separate languages, the service member which gains the highest grade on the Defense Language Proficiency Test (DLPT) in each language can gain an additional $1,000 a month per language. As the almighty dollar rules in the United States, arguably the most capitalist nation in the world, there is obviously a sought-after advantage of military members having professional levels of language and culture expertise. In the US Military, a 2019 study showed that 45% of the force is under the age of 25, and a staggering 66% under age 30, language instructors are well aware of this need for digital adaptations (https://www.statista.com). Therefore, one can argue that a new digital version of literature is needed to adapt to the audience of the youth which dominates the US military. In their work, Alan Galey et al. (2012), state “all we can do is create digital surrogates for artefacts and hope those surrogates measure up to expectations, even as second-order representations” in the current environment of material culture (Alan et al. 2012, p. 21). This project aims to intensify the adaptation of *Dom Casmurro em Histórias em Quadrinhos (HQ)* to encourage and strengthen the way US Armed Forces members interact with this classic text from Brazilian literature.

Justifying the Need for a New Tool

To pass the DLPT, the service member must take a two-part test. Both tests are normally around 65 to 70 questions and are separated between listening comprehension and reading comprehension. Often, the final questions of the exam distinguish between the highest levels of professional Portuguese levels. As defined by the Interagency Language Roundtable (ILR), the governing body of the levels and DLPT, the 3+ rating in reading, which is defined as General Proficiency, Plus, must be able to:

“Can comprehend a variety of styles and forms pertinent to professional needs. Rarely misinterprets such texts or rarely experiences difficulty relating ideas or making inferences. Able to comprehend many sociolinguistic and cultural references. Able to comprehend a
considerable range of intentionally complex structures, low frequency idioms, and uncommon connotative intentions, however, accuracy is not complete. The individual is typically able to read with facility, understand, and appreciate contemporary expository, technical or literary texts which do not rely heavily on slang and unusual items.” (https://www.govtir.org/Skills/ILRscale2.htm)

This describes the highest score one may mark on the DLPT test in Brazilian and Continental Portuguese. To achieve such a high level of reading comprehension skill, one must have the most demanding and innovate tools to learn from. This paper is an attempt to create one such tool that can forge the way for military language acquisition for the next wave of young service members.

Understanding the importance of cultural references, intentionally complex structures, low frequency idioms based on the definition of the 3+ Reading Comprehension definition set forth above by the ILR, someone who understands the Portuguese language easily looks to literature where the three intertwine nicely. One could argue literature plays an even deeper role of influence in Portuguese, such as when the nation’s leader referenced Os Lusíadas in a recent meeting with other European nations or when a student from Brazil mentions the common expression, “E agora José” from Carlos Drummond de Andrade’s famous poem. From the personal experiences of someone who has lived in the United States, Portugal and Brazil, one must recognize the ‘in-your-face’ presence of literature in Portuguese speaking countries. This knowledge drives the Português como Língua Estrangeira (PLE) instructor to determine the simple need for the use of literature in the classroom. However, other challenges arise from the instruction of literature in a foreign language.

Many students in the US Military have an interest in the Portuguese language but they cannot read a classic novel in Portuguese due to limited exposure to the language. Furthermore, many of them do not have the interest to read such a novel in their native tongues, much less one in a foreign language. Therefore, the intensification of such a text is needed via gamification. This paper aims to create the theoretical and tactical basis for the methods of creating a gamified text from a classic of Brazilian literature. With the scope of this project being focused on the gamification of Brazilian literature classic adapted to a graphic novel for American military students acquiring Portuguese as a foreign language, the art of storytelling was thoroughly researched. Storytelling makes up an intrinsic part of culture. According to Jason Farman, “Imagining such a meaningful location without a story is impossible; stories, spaces, and communities are intimately tied together” (Farman 2015, p. 102). Specifically, the community (young military members), and space were examined. The space must be digital and ideally available on a mobile application such as a cell phone or tablet. The adaptation of Dom Casmurro em HQ (2012) by Machado de Assis into a graphic novel, adapted by Ivan Jaf and Rodrigo Rosa, will serve as a basis for the intensification of the story Dom Casmurro (1899). In the creation of remediated texts, as defined as “refashioned or rehabilitated,” into graded readers¹, classics are often chosen as tried-and-true stories that stand the test of time (Claridge 2012, p. 111). The novel is a classic of Brazilian literature and serves as a

basis for several cultural references with the setting being in the heart of the Rio de Janeiro, Brazil. Furthermore, the artistic qualities of this graphic novel seemed superior to other more traditional comics such as the adaptation of *O Cortiço* by Azevedo adapted by Ronaldo Antonelli (Azevedo & Antonelli, 2007).

Although the graphic novel is a step towards a more intensified classic novel from Brazilian Portuguese, the intensification of such a novel to create a gamified version is even more attractive for the young American service member. Sita Popat has claimed that “extended time playing with one avatar often leads to the establishment of deeply embodied connections between player and avatar” (Popat 2016, p. 364). Therefore, one can assume skills such as foreign language learned via a gamified version of a text will be kept and stored into such a deep embodied connection perhaps even more so than that of a traditional novel.

Acquiring a foreign language often requires a healthy addiction to the tools in which one uses to acquire said language. Sherry Turkle claims that video games have “holding power” that “provoked people who saw it as a sign of addiction to become alarmed” (Turkle 2005, p. 500). A gamified version that could provide such an addictive force over a student is a foreign language instructor’s dream come true. If completed in a diversified and fun manner, the new gamified text could contain a holding power that Turkle implies would drive the student back to the text repeatedly as desired.

Beyond this holding power, the use of gamified learning media has proven to have a more positive impact on acquiring vocabulary which is a critical part of foreign language acquisition. Kusumadewi and Widyastuti (2018) showed in their analysis of Duolingo (a gamified learning Android Application) that students learning English as a foreign language had a positive effect compared to the control in their study. The control in the study were students limited to conventional methods of vocabulary acquisition. This empirical evidence pushes the foreign language instructor to provide something better, such as Duolingo in vocabulary acquisition, for the intermediate to advanced student of Portuguese as a Foreign language who is starting to read literature in Portuguese.

**Creating a Gamified Graded Reader from a Graphic Novel**

To achieve gamification of a graphic novel, the graded reader approach was determined to be the best way to provide difficulty levels much like a video game. The process of creating a graded reader was thoroughly researched. As a former instructor of Portuguese as a foreign language at the US Air Force Academy, I understand most of our advanced students cannot understand a text such as *Dom Casmurro em HQ* adapted to a graphic novel in its entirety. Therefore, a graded reader approach will be taken and created into a game. There will be different levels of the text to include level 1+ and 2+ in the intensified and digitalized version of the graphic novel. Once the student passes a chapter of the 1+ level of the novel, the student will be granted access to the 2+ level. Once the student passes the 2+ level of the novel, the student will be granted access to the original which is designed for native speakers of Brazilian Portuguese. A simplified example of B1 level from the Common European Framework of Reference (CEFR) or ILR Level 2, the original and a translated version is shown in appendix 1 along with the program
The framework of the gamified text requires the text to go under several processes for grading. For the purpose of this paper, grading is defined as the simplification of the source text to specified language levels of students to aid in their comprehension of the text. The Portuguese corpus from Sketchengine.eu, a tool which allows academics to retrieve frequencies of words, keywords and N-grams in a given corpus, which was “crawled by Heritrix in 2011” and “Cleaned, deduplicated, tagged using Freeling pipeline v4 with orthography normalization” will serve as the basis of Portuguese written and produced for native speakers (sketchengine.eu). The cleaning, deduplicated, tagged and normalization process this corpus contains minimizes errors in the data that is presented in the corpus which allows the user to leverage its output of frequencies as a form of empirical data. For example, deduplication removes redundant texts in the same corpus that would otherwise influence the data in a negative way when it came to gathering the frequency of words. From this corpus, a frequency list was formed of the highest 1,000 words families, or lemma as defined by sketchengine.eu, to determine the most frequent word families in Portuguese in 2011. This list can be found in Attachment 1. These word family frequencies will allow for a comparison against other bodies of corpus such as an individual graphic novel like Dom Casmurro em HQ. The script of Dom Casmurro em HQ will then be analyzed to determine which words fall outside of the most frequent Portuguese word families (lemma) to discover which words may prove troublesome for level X.

Each word within the top 1,000 most frequent word families in Portuguese will be given a score based on the frequency ranking of the word family it belongs too. For the purposes of this paper, the definition of word family will be adopted from Watzinger-Tharp et al. (2018) where it “includes the base/root form (e.g., work), its inflections (works, worked, working), and transparent derivations (worker)” (Watzinger-Tharp et al., 2018, p. 59). Not only have word families been used before to create grades, also known as levels in foreign language acquisition, for graded readers, they also facilitate the codification of words for a game. By assigning word families point values instead of individual words, the computation is simplified to include a more general and broad point value for each term encountered in the text.

In this project, the first two pages of the graphic novel adaptation of Dom Casmurro em HQ are approached to re-textualize for a ILR Level 2 reader from the US Military. An ILR Level 2 is roughly equivalent to B1 in CEFR standards. First, a filter was applied manually by scanning each of the 261 words on the first two pages of the book and testing their presence on the frequency headword list created specifically for this project using an internet-based corpus available on sketchengine.eu leveraging contemporary Portuguese up to the year 2011.

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2 This graphic novel version of Dom Casmurro has been translated by this same author.
These lemmas include the word families of the first 1,000 most frequent words found in Portuguese at this time. At B1, it is safe to assume the reader will understand the 1,000 most frequent word families found in the language based on studies conducted in other languages such as Spanish and English that state publishing houses of graded readers assume 1,000 headwords, defined as lemma in this project, in English for B1 learners and others such as Cambridge Readers note the ability to recognize 1,300 headwords, and Macmillan Guided Readers declaring the ability to understand 1,400 headwords. This project selected the conservative number of 1,000 recognizable headword (lemma) words for its tactical list, but even Oxford Bookworms state that some B1 learners may only understand 700 headwords.

Once the 1,000 headword list was formed, gamification is already in reach. Each word will be gamified in the intensified version of *Dom Casmurro em HQ* by the associating point values to word families. For example, the preposition *de* (of, from) will be given the lowest score of 1 point. However, the term *juiz* (judge), with the ranking of 999th most frequent word family will get a score of 999 points. This will facilitate the gamification process. When making fill-in-the-blank time games such as those found already on language learning applications, the word that will fill-in-the-blank in this game will have different weights which will be used to achieve different steps in the storyline of the gamified classic from Brazilian literature. Once the reader, or user, reaches a predetermined number of points, the next level of the graded reader is unlocked.

However, the computational method does still need a human touch. After filtered through the 1,000 most frequent words, the words that did not exist were highlighted for further personal consideration. This process is show in Appendix 2. Leveraging several years of teaching Portuguese as a foreign language in the classroom to Air Force members, and common practices of the trade of the creation of graded readers, the project looks for synonyms, substitutes and ways to paraphrase challenging terms. Furthermore, the project searched for anglophone friendly cognates that existed on the list terms found challenging to see if an English speaker would easily recognize them. The challenges were put into a few basic categories listed as shown in Appendix 2. To provide greater detail to the most frequent tactic in creating the grade, Appendix 3 highlights the tactics of substitution. Examples of structural adjustments are displayed in Appendix 4.

The third challenge that can be dealt with via gamification is the issue of idiomatic expressions. These challenges were sought after as opportunities in the exercise of this experimental graded reader. In the example below, we can see how the combination of the fill-in-the blank game along with the illustration was gamified to help the B1 reader understand an expression that he or she probably wouldn't have understood without assistance. These additional apparatus, sometimes just additional information in a footnote or parenthesis, are essential parts of these texts and in some cultures highly preferred. See an example of the gamification opportunity leveraged in the idiomatic expression in Appendix 5.

Kress (2010) demonstrates how people have different preferences and orientations for images and speech. Thus, graphic novels reach more readers in different modes, which helps their utilization as a material representative of culture especially when teaching a foreign language. Kress (2005) investigates the differences among signs that
come from images and texts also. In his work, he differentiates among two modes like one that tell “what happened, it informs about the events,” while “image is used to show what there is or was” (Kress, 2005, p. 69). He adds to this idea with an example of students telling the reader about a fundamental problem of specialization, which favors a single mode of delivery, is not able of communicating everything in a sufficient way. Other modes usually take away some of the communicative load from the so called primary mode. Something additional is needed, such as an image, a social context, a particular knowledge, to understand in sufficient way.

Due to the unique presence of illustrations in graphic novels, the graded readers must take this into account when making the grade. When discussing Graded Readers, Claridge (2012) mentions how “Illustrations also play a part.” (Claridge 2012, p. 115). For example, the term padre (priest) may not be understandable by many English speakers attempting to learn Portuguese due to the lack of catholic dominance in North America as in many Portuguese speaking nations. The term also does not appear on the list of 1,000 lemmas produced for the B1 grading system produced in this paper. However, as a teacher with experience using these materials in the classroom, I know that the majority of my students can leverage the term padre and the illustration together to determine the meaning of the word. Furthermore, the repetition of the term padre throughout Dom Casmurro em HQ (2012) pushes the creator of the graded reader to want to keep the term. In the military instruction of foreign languages, instructors are often encouraged to push the students outside of their comfort zone to acquire what we describe as above-level vocabulary.

Due to the multimodal delivery of graphic novels, the illustrations will also be gamified by using Adobe Dreamweaver or JQuery. The user interface of the intensified e-book will allow the user to inquire about images with cultural weight. Cultural weight is designed as images in which a native Brazilian Portuguese speaker would leverage meaning while the foreign language learner may miss the intended meaning. To exemplify this, the image in Appendix 6 demonstrates the common scene of young men calling on Capitu from the window of her father’s home. This is an idealized image from Brazilian culture in towns such as Goiás. The illustration below demonstrates how the author and illustrator leave much information on the page that may not necessarily be interpreted adequately from the non-native reader.

As a former instructor of Brazilian Portuguese Literature, I understand the complexities of teaching the details of literature in a language that students still do not adequately understand at the comprehension level. Reading in between the lines, as they would be demanded to do in their native English Literature courses is not necessarily possible in their foreign language. However, one can leverage the illustrations of graphic novels to still ensure a basic comprehension of literary devices and literary genres. For example, in the image in Appendix 6 from Dom Casmurro em HQ (2012), the e-book will be intensified to enable the reader to click on the devil-like image of Bento. Then the reader will be directed to another webpage via hyperlink that will instruct him or her about some of the realism that is present in the novel and how realist novels tend to highlight the imperfections of mankind such as jealousy.
Translation Challenges for Gamified Texts

Public information available to anyone in the world such as the information provided on the Department of Defense’s Global Language Online Support System (dliflc.edu) or the National Foreign Language Center housed at the University of Maryland demonstrates one clear requirement when dealing with language acquisition sources for the United States Department of Defense. That requirement is a translation of the language present in a text, video, or audio source. These translations ensure the decision makers in the Department of Defense understand what exactly is being taught to their students while helping them standardize procedures across the various languages they teach. On the Global Language Online Support System, Brazilian and European Portuguese is listed along with 39 other languages. These translations are vital and often mandatory in Department of Defense contracts for the production of language resources.

Therefore, a translated version of the graphic novel version of *Dom Casmurro em HQ* (2012) is necessary for the development of a new resource with the aim of use in the Department of Defense. Translation from Portuguese to English already comes with various challenges from differing structures, connotational meanings in words and idiomatic expressions that cannot be cleanly recreated in the English language without additional explanation. However, the translation of a graphic novel provides an additional challenge to the various interpretations that can be made on the same graphic from culture to culture. Bell-Santos et al. (2011) highlight the challenge of bringing words that may have cultural references into another culture where those cultural references may be lost (Bell-Santos, 2011, p. 74). Clifford Landers (2001) also declared these cultural references to people, objects and even institutions are challenging to recreate in the target culture. The people, objects and institutions drawn in a graphic novel are no different.

Translating from Portuguese to English inserts itself largely into cultural differences in the materialities of each culture. Bell-Santos (2011) emphasizes this overall challenge by exemplifying the challenges in culinary translations. Specifically, she mentions the lack of completeness in terms of the process when given a Brazilian dish’s recipe from a Brazilian speaker. She declares the recipe often is not what she expects and more complete and accurate information is needed to replicate the dish (Bell-Santos 2011, p. 91). Although this challenge may seem unique to culinary translations, this is a cultural difference of clarity that is often discussed when studying the specific challenges between Portuguese and English. This need for more complete and accurate information will be fulfilled through an intensification of *Dom Casmurro em HQ* by means of additional apparatuses such as hyperlinks to grammatical explanations as shown in Appendix 7, cultural references such as *Engenho Novo*, written on the train in Appendix 1 as shown in the hyperlink to a Wikipedia page on *Engenho Novo* in Appendix 8.

Baker (1992) addresses some of the most difficult challenges in the translation of idiomatic expressions through the lens of context which she gives critical. She claims the contexts and frequencies in which these expressions are used vary language to language. Leveraging the theoretical base of what Kress (2005) expresses about the different influences of images and text help justify the reason for using the graphic novel due to its more present context in a more international language, the interpretation of images.
In her analysis of translation, May (1994) demonstrates how translators often increase the texts they recreate by using footnotes and other similar tools available to writers (May 1994, p. 4). Despite demonstrating the need for intensified texts in general in search for deeper understanding, May also demonstrates the importance that the images in the graphic novels will play in this gamified text. Furthermore, she demonstrates the natural presence of such additional tools, such as footnotes, prefaces, glossaries, graphics and others in the reading of translated novels. This justifies the intensification of *Dom Casmurro em HQ* while combatting the idea that the intensification will be overwhelming for the reader. With the plan of delivering the text in a digital format, one may imagine a text that can be viewed through various lenses that can hide specific notes or glossaries, keeping them out of sight for the unwanted or unnecessary needs of specific readers.

Translation for the means of a gamified text is even more challenging due to the ease of computation of points and codes. This forces the translator to use an often-ineffective word-for-word approach in their translations as shown in the coding for the tool tip hovering for the samples pages shown in Appendix 9. These word-for-word translations are necessary for the gamification of a fill in the blank style game. The use of individual words also makes the codification of points and value of each part of the fill in the blank game easier. However, any professional in the translation field understands that the accountant approach often fails. In their work translating Machado de Assis, Caldwell (1953) and Scott-Buccleuch (1992) both struggle with terms like *mucamas* and *moleques* (Bell-Santos et al., 2011, p. 82). Beyond finding a somewhat equivalent word is the even more challenging occurrence in translation where one word often results in two or more words in the target language. Bell-Santos et al. (2011) shows this by using the term *pitangueira* which is equivalent to the two term expression ‘pitanga tree’ in English. Baker (1992) demonstrates how some idiomatic expressions are best translated by simply paraphrasing. All three examples above display challenges for the gamification of terms. Such examples are rich in Portuguese to English translations and demonstrate how the challenge for word-to-word recreations and the challenge to put words into a codified text where words are given value.

**How to get there? Findings and Ideas for the Future**

The most important findings in this project were the innovative practices for using the different grades of a graded reader to gamify a classic of Brazilian literature and the grading process itself. Furthermore, the specification of aiming these graded readers towards US Military personnel has never been accomplished to date in the Portuguese language in this manner. The combination of both computation and personal experiences during the tactical level of the production of the graded reader is also innovative.

Furthermore, the intensified version of *Dom Casmurro em HQ* will entail further links to grammar explanations for each level. The grammar explanations and glossaries of terms will use ILR training guidance for grammar instruction as shown in Appendix 10. Questions, quizzes, audio, interactive fill-in-the blank gaming forms such as those found on Duolingo can also easily be incorporated. However, as demonstrated by the
presentation of this project, there is both a time and money reality to the intensification of these texts.

Due to the goal of intensifying classics, there is also a limitation to publication rights. When Editora Ática was reached after many attempts, there was only a short and quick denial in their response shown in Appendix 11. This is the harsh reality when trying to obtain publishing rights when dealing with extremely popular works such as *Dom Casmurro em HQ* (2012).

Limits with word-to-word translation will be overcome by providing a hyperlink to the complete and accurate translation (see Appendix 12). Providing the full translation will give further insight to the student on more complex sentence structures and it will also make this text and its themes and history available to the commanders of the US Military who may not read Portuguese.

For future versions of this project, the Portuguese teacher could easily find usefulness out of an additional button at the top page of a native Brazilian Portuguese speaker reading the lines. Although this may stray from the accuracy of the way people talked in the 1899 original of *Dom Casmurro*, it will still provide a focus on contemporary Portuguese. Ideally, the gender and regional accent from Rio de Janeiro would be sought after for each character. However, due to the cost of narration fees, this may be limited to a single native narrator to ensure the students know how to pronounce the new vocabulary they are acquiring.

Due to time restrictions posted in this project, adequate instructions will be needed in order for the reader to have the intended experience. These instructions will have to show the reader how the point system works and when the student may proceed to the next level of the story. Ideally, this would become computerized in the interface. As the link to the video that accompanies this project currently demonstrates in Appendix 13, the coding for the beta version shown in Appendix 14 is substantial. At the bottom of Appendix 14, the Hover Tool Tip Function’s coding and cascading style sheet (css) are also attached. It took a little over one month to complete this level of completion on just the first two pages of the novel.

However, one may assume that this process will be streamlined and must also consider the innovative thoughts, such as the creation of the 1,000 most frequent lemma list, the translation, the editing of the graphic novel pages via Adobe Photoshop, the tactics for creating the grade for the military student, and the creation of a point system shown in Appendix 16, all can be substantially streamlined for efficiency now that the foundation of the project is established. Additional instructions would also include tips and more complete information on how to best use the intensified graphic novel for foreign language acquisition. Teacher guides will also be needed to assist Portuguese teachers in the use of the interface in the classroom along with the answers to various fill-in-the-blank answers.

With the completion of this intensification sample of two pages of *Dom Casmurro em HQ*, one can imagine the endless horizon in the adapting classics of literature and the way we instructors deliver them to our students. This intensification demonstrates how me must continue to find new and innovative ways to engage our youth. These innovations may encourage even more students to be hooked into foreign language learning. In an expeditionary Armed Forces such as the United States, where our troops are
stationed more often overseas than at home, a deeper understanding of the cultures and languages they will work in is critical to the success of the United States Armed Forces abroad and allies’ perspectives of us as a global leader. As nations such as the People’s Republic of China are quickly closing the gap on the United States place as world leader, our allies will become even more important in the future. This project demonstrates how computational coding, translation and the study of the materialities of literature and media in an intensification of a classic text such as *Dom Casmurro* can lead to changed perspectives and understanding that have a global impact.

**Works Cited**

**Top of Form**


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https://www.militaryrates.com/military-pay-incentives-flpp


**Top of Form**


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Machado de Assis. (1899). *Dom Casmurro*.


“Sketch Engine.” https://www.sketchengine.eu


**Appendix 1:**
Appendix 2:

<table>
<thead>
<tr>
<th>Grading Challenge Category</th>
<th>Terms</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Friendly Cognates</td>
<td>poeta, recitando, poema, dicionários, atribuir-me, reminscências, reconstruir, exatamente, evidentemente, recompor, penetra, geologia, passado</td>
<td>13</td>
</tr>
<tr>
<td>Substitute (term in parenthesis is the chosen term to substitute for the graded reader version)</td>
<td>bonitos (perfeitos), calado (silêncioso), metido (introvertido), fidalgo (senhor), apelidou (nomeou), cochilo (dormir), teimoso (inflexível), implicante (insidioso), cabeçudo (egoísta), moro (viver), desejo (prazer), atar (ligar), tintura (cor), remoça (atualiza), alma (coração)</td>
<td>15</td>
</tr>
<tr>
<td>Frequency in US Military Classroom</td>
<td>cansado, jantar, duas, durmo</td>
<td>4</td>
</tr>
<tr>
<td>Proper Name</td>
<td>Engenho Novo, Dom Casmurro, Dom, Matacavalos, Matacavalos</td>
<td>5</td>
</tr>
<tr>
<td>Paraphrase</td>
<td>desaparecer (não os vejo mais)</td>
<td>1</td>
</tr>
<tr>
<td>Additional Apparatus</td>
<td>Engenho Novo, ares de fidalgo, Foram estudar a geologia dos campos santos.</td>
<td>3</td>
</tr>
</tbody>
</table>

Appendix 3:

Types of Substitutes

<table>
<thead>
<tr>
<th>Substituted by Synonyms that are English Friendly Cognates</th>
<th>Substituted by words in the expected B1 understood word family list of 1,000 most frequent used words in contemporary Portuguese</th>
</tr>
</thead>
<tbody>
<tr>
<td>bonitos (perfeitos), calado (silêncioso), metido (introvertido), apelidou (nomeou), teimoso (inflexível), implicante (insidioso), cabeçudo (egoísta)</td>
<td>fidalgo (senhor), moro (viver), tintura (cor), remoça (atualiza), atar (ligar), alma (coração)</td>
</tr>
<tr>
<td>Frequency: 7</td>
<td>Frequency: 6</td>
</tr>
<tr>
<td></td>
<td>cochilo (dormir*), desejo (prazer*)</td>
</tr>
</tbody>
</table>

* Terms with asterisk are not on word family list but are high frequency terms in US Military classes for Portuguese as a foreign language.
Appendix 4:

Structural adjustments = examples = simplicity B1 structure okay

<table>
<thead>
<tr>
<th>Added</th>
<th>Substituted</th>
<th>Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ares de fidalgo (de um senhor)</td>
<td>Tudo por causa de um cochilo... (Tudo por que eu dormi...)</td>
<td></td>
</tr>
<tr>
<td>Esta casa em que moro mandei construir levado por um desejo que até me envergonha explicar... (Esta casa em que vivo mandei construir levado por um prazer que é até difícil explicar...)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Não consegui recompor o que foi nem o que fui. Esta casa é como tintura para cabelo: remoça, mas não penetra na alma. (Não consegui recompor o que foi nem o que fui. Esta casa é como cor para cabelo: atualiza, mas não penetra no coração.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assim como a casa de Matacavalos, os amigos antigos também desapareceram. (Assim como a casa de Matacavalos, os amigos antigos também não os vejo mais.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appendix 5:

ASSIM COMO A CASA DE MATACAVALOS, OS AMIGOS ANTIGOS TAMBÉM DESAPARECERAM. FORAM ESTUDAR A GEOLOGIA DOS CAMPOS SANTOS.

campos santos é um ______ cemitério ou igreja
Appendix 6:
Appendix 7:

**GERÚNDIO**

5/1/2021

The gerúndio is formed with all verbs by replacing the final -r of the infinitive with -ndo.

For example:
- comunicar > comunicando
- escrever > escrevendo
- assistir > assistindo
- pôr > pondo

This verb form is similar to the -ing form of English but sometimes the infinitive in Portuguese is used instead of the gerúndio when representing what would be an -ing form of the verb.

---

Appendix 8:

![Engenho Novo](https://en.wikipedia.org/wiki/Engenho_Novo)

**Engenho Novo**

Engenho Novo is a neighborhood of middle class and lower middle of the North Zone of Rio de Janeiro, Brazil. It neighbors the neighborhoods of Vila Isabel, Vila Isabel, Leme, Vila Isabel, Gávea, and the federal districts of the city. The neighborhood has a large number of residential and commercial buildings. It is part of the region called the Grande Rio, encompassing the neighborhoods of the Jardim, Nova, Vila Isabel, Cidade, Vila Isabel, Engenho de Dentro, and others. It has 254,448 residents. It is the fifth largest district population group.

It is bordered by the Vila Isabel, Sambodrome, and the regions of the city. It has 2,544,488 residents. It is the fifth largest district population group.

The neighborhood is located in the Engenho Novo Station on the Central Line of the BRT network.

**History**

The occupation of the region known today as Grande Rio began when Egidio da Silva founded the Estação do Engenho, which is still a popular gathering place.

---

Appendix 9:

**Tool Tip for Hover Text**

```html
<map class="tooltip" name="UMA">
  <span class="tooltiptext">One</span>
</map>
```

**CSS Style Sheet for Tool Tip Hover Text:**

```css
/* Tooltip container */
.tooltip {
  position: relative;
}
```
Appendix 10:

Grammar and Glossary Examples:

1. Que ou aquele que faz versos.
2. Que ou quem é idealista.

Feminino: poetisa.

**DEFINITE ARTICLES**
5/2/2021
0 Comments

Definite articles in Portuguese have both masculine and feminine forms along singular and plural forms. These terms are similar to the English term *the*.

Masculine  o (singular)  os (plural)
Feminine  a (singular)  as (plural)

**JOVEM**
5/2/2021
0 Comments

Adjective
Que está na idade juvenil, moço.
That of young age, young man.

Definition from Dicionário Prático Ilustrado. 1964. Lello & Irmão – Editores 144, Rua das Cermelitas – Porto.

**ENCONTREI**
5/2/2021
0 Comments

Ir de encontro; junção de pessoas ou coisas que se movem em sentido oposto ou se dirigem para o mesmo ponto.
Translation
To go encounter; a junction of people or things that move in the opposite direction or drive towards the same point.

Definition from Dicionário Prático Ilustrado. 1964. Lello & Irmão – Editores 144, Rua das Cermelitas – Porto

This term is a verb which comes from *encontrar*.

The verb is a regular *-ar* ending verb.

The verb is conjugated in the past preterit indicative form below.

Pretérito perfeito
**eu encontrei**
tu encontraste
ele, ela, você encontrou
nós encontramos
vós encontrastes
eles, elas, vocês encontraram
The preterit past is used when an event took place in the past and ended in the past. For example,

O João jantou e voltou para casa.
(John had dinner and returned home.)

The preterit past is also used to say how long ago something happened:
For example,

Eles lançaram o film há 2 meses.
(They released the film two months ago.)

It can also be used to talk about long-lasting events from the past.
Ele ficou três horas esperando o avião.
(He was there for three hours waiting for the plane.)

The past preterit may also be used to discuss past events related to the present.
Ela bebeu demais.
She is drunk too much.

It can also be used to refer to something in the immediate past or referring to something in the past that is still in progress.

The term *casa* can represent the English meaning for house and home.

Definition from Dicionário Prático Ilustrado. 1964. Lello & Irmão – Editores 144, Rua das Cermelitas – Porto.

*Para* is a preposition used as a near equivalent for “for” when referencing to beneficiary, purpose, time limit and frame of reference as shown in some of the examples below:

Preciso comprar uma bicicleta para o meu filho.
(I need to buy a bicycle for my son.)

Esse trabalho escrito é para sexta-feira.
(This written assignment is for Friday.)
It can also mean “to” when talking about a final or permanent destination:
Mudaram para Coimbra.
(They moved to Coimbra.)

It can also mean “to” when referring to a temporary destination or introducing an indirect object

Elas foram para a loja.
(They went ot the shop.)

GERÚNDIO
5/1/2021
0 Comments

The gerúndio is formed with all verbs by replacing the final -r of the infinitive with -ndo.

For example:
comunicar > comunicando
escrever > escrevendo
assistir > assistindo
pôr > pondo

This verb form is similar to the -ing form of English but sometimes the infinitive in Portuguese is used instead of the gerúndio when representing what would be an -ing form of the verb.

DESSA
5/1/2021
0 Comments

A contraction of the preposition de and the pronoun esse in the feminine form.
de + essa = dessa
of;from this;that

NOITE
5/1/2021
0 Comments

espaço de tempo, durante o qual o Sol está abaixo do nosso horizonte: no equador as noites são iguais aos dias durante todo o ano.
space of time, during which the Sun is below the horizon: on the equator the nights are like the days all year.

Definition from Dicionário Prático Ilustrado. 1964. Lello & Irmão – Editores 144, Rua das Cermelitas – Porto.
Indefinite articles in Portuguese are the following:

um (masculine) a (an)
uma (feminine) a (an)
uns (masc. plural) some
umas (fem. plural) some

Just like English the indefinite articles are used to express what a (an) or some might express. However, there are some critical differences.

For example, in Portuguese they would say the following:

He is a lawyer.
Ele é advogado.
(He is a lawyer.) The word (a) does not exist in Portuguese.

Ela é brasileira.
(She is a Brazilian.) The word (a) does not exist in Portuguese.

Eu sou cristão.
(I am a Christian.) The word (a) does not exist in Portuguese.

After the words tornar-se or virar-se which means (to become)

For example:
Um advogado que se tornou médico.
(A lawyer who became a doctor.)

After the word como (as)

For example:
Ela trabalha como garçonete num restaurante.
(She works as a waiter in a restaurant.

Occurring before a noun used as a direct object in a general way:
Elas já compraram passagem?
Have they already purchased the ticket?

After prepositions such as de or sem when they are used to specify an individual’s characteristics:
Um homem de cachimbo.
A man with a pipe.

When an indefinite noun can be used as a apposition, usually in a name.
Leticia, antiga corretora de imóveis.
Leticia, a former real estate agent.
The indefinite article also is present in Portuguese in the below examples where it is not in English:
O livro é de uma beleza arrebatadora.
The book is breathtakingly beautiful.
Also the indefinite article is normally used with many abstract nouns to mean one time.
Falei uma besteira.
I said something stupid.
The plurals of indefinite articles can sometimes represent the English meaning of ‘a few’ or ‘a number of’:
Passaram uns dias em Búzios.
They spent a few days in Búzios.
They can also mean “about” or “around” in English in the following cases:
Recebeu umas mensagens de voz.

Appendix 11:
Response from Editor:

Atendimento Somos Educação <atendimento@somoseducacao.com.br>
to me ▾

Português ▾  →  English ▾  Translate message

Agradecemos seu interesse em publicar sua obra conosco.
No momento, suspendemos o recebimento de originais, não há previsão de retorno.
Pedimos desculpas.
Desejamos boa sorte e sucesso!

Atenciosamente,

SOMOS Educação
Central de Relacionamento
Tel.: 4003-3061 | 0800 772 0028
atendimento@somoseducacao.com.br
Appendix 12:

Translation Dom Casmurro em HQ
Sample Translation by the author

Page 1
Box 1
On one of those nights, going home, I came across a young poet.
Engenho Novo (on train)
He had just recited.
The poems that I made you without writing them. The loving words that I did not say…

Box 2
I was tired. Zzz

Box 3
Wait! Continue. It is so beautiful.
I’ve already finished!

Box 4
(Written on the letters)
Dom Casmurro, Sunday I am going to have dinner with you. Signed M.
Leave this cave of the Engenho Novo, Dom Casmurro.
Meu caro Dom Casmurro, Come sleep at home.

That poet started speaking badly of me, and gave me the nickname of Dom Casmurro*.
The nickname stuck. Everything happened because of a little nap…
My Casmurro, wasn’t one from the dictionaries, and yes it is popular. “The quiet man
and had messed with you really.” Dom had given me a noble air.

Under box 4
I also did not find a better title for these reminiscences and if there was not another until
the end of the book, it will be this title really.
Dom Casmurro
* In dictionaires, casmurro also means “shy,” “teaser” and “big-headed"

Page 2
Box 1
This house that I live in has been made for a desire that I am embarrassed to explain…

Box 2
I wanted to reconstruct, exactly the same, the house where I was raised, on Matacavalos
Street, and that already no longer existed.
To the left of Box 3
What I wanted, evidently, was to tie the knots of two points of life.
Box 3
I couldn’t recompose what was nor what I was. This house is like a dying of the hair, it
moves, but it does not penetrate the soul.
To the right of Box 3
This is how the house was on Matacavalos, the old friends also disappeared. They went to study geology in the Graveyard Campos Santos.

At the bottom of the page:
I leave after a little bit, I eat well, and I don’t sleep badly, but as everything makes me tired, I decided to write a book about the past. In this way, I will live what I have lived.

We start …

Appendix 13:

Video Link:
A VETERAN OWNED BUSINESS – Dom Casmurro Intensification (easyimmersionllc.com)
Password: MATLIT21

Appendix 14:

Sample Coding of Page 1 of the Original Slide
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8" />
<meta http-equiv="X-UA-Compatible" content="IE=edge" />
<meta name="viewport" content="width=device-width, initial-scale=1.0" />
<link rel="stylesheet" href="styleP1.css">
<link rel="stylesheet" href="hoverP1.css">
<title>Dom Casmurro</title>
</head>
<body>
<style>
center span {
    color: white;
    font-size: 5vh;
}
.english-link {
    padding: 6px;
    background: rgb(14, 14, 14);
}
.original-link {
    padding: 6px;
    background: rgb(90, 90, 90);
}
.b1-link {

Dom Casmurro

uma one

noite night

dessas these

vindo coming

to
<div class="home_div">
  <span class="home">casa,</span>
  <span class="home_span">home</span>
</div>

<div class="ifound_div">
  <span class="ifound_span">i found</span>
</div>

<div class="one1_div">
  <span class="one1"><a href="http://www.easyimmersionllc.com/401/login.php?redirect=/dom-casmurro-intensification/indefinite-articles" target="_blank">um</a></span>
  <span class="one1_span">one</span>
</div>

<div class="young_div">
  <span class="young"><a href="http://www.easyimmersionllc.com/401/login.php?redirect=/dom-casmurro-intensification/jovem" target="_blank">jovem</a></span>
  <span class="young_span">young</span>
</div>

<div class="poet_div">
  <span class="poet_span">poet</span>
</div>

<div class="he_div">
  <span class="he">Ele</span>
  <span class="he_span">he</span>
</div>

<div class="just_div">
  <span class="just">acabou</span>
  <span class="just_span">just</span>
</div>
<div class="reciting_div">
  <span class="reciting_span">reciting</span>
</div>

<div class="txt_div02">
  <div class="the1_div">
    <span class="the1"><a href="http://www.easyimmersionllc.com/401/login.php?redirect=/dom-casmurro-intensification/definite-articles" target="_blank">Os</a></span>
    <span class="the1_span">the</span>
  </div>
  <div class="poems_div">
    <span class="poems">poemas</span>
    <span class="poems_span">poems</span>
  </div>
  <div class="that1_div">
    <span class="that1">que</span>
    <span class="that1_span">that</span>
  </div>
  <div class="thee1_div">
    <span class="thee1">te</span>
    <span class="thee1_span">thee</span>
  </div>
  <div class="made_div">
    <span class="made">fiz</span>
    <span class="made_span">made</span>
  </div>
  <div class="without_div">
    <span class="without">sem</span>
    <span class="without_span">without</span>
  </div>
  <div class="write_them_div">
    <span class="write_them">escrevê-los,</span>
    <span class="write_them_span">write them</span>
  </div>
</div>

<div class="the3_div">
</div>
palavras

de
amor
de
that
não
tee
disse
Engenho

ingenuity

novo

new
Eu estava cansado.

Espere continue são tão bonitos.

i've already já
já
acabei!

domingo
sunday

vou
i am going to have

dinner
jantar
com
with
você
you

saia
leave


dessa
Sample of HOVER Code

/* HOVER */
.ive_walready:hover + .ive_walready_span{display: block;border: 0.1px solid;}
.one:hover + .one_span{display: block;border: 0.1px solid;}
.night:hover + .night_span{display: block;border: 0.1px solid;}
.these:hover + .these_span{display: block;border: 0.1px solid;}
.coming:hover + .coming_span{display: block;border: 0.1px solid;}
.to:hover + .to_span{display: block;border: 0.1px solid;}
.home:hover + .home_span{display: block;border: 0.1px solid;}
.ifound:hover + .ifound_span{display: block;border: 0.1px solid;}
.one1:hover + .one1_span{display: block;border: 0.1px solid;}
.young:hover + .young_span{display: block;border: 0.1px solid;}
.poet:hover + .poet_span{display: block;border: 0.1px solid;}
.he:hover + .he_span{display: block;border: 0.1px solid;}

Appendix 15:

Map an Image with no success in Adobe Dreamweaver:

<map name="image">
  <area shape="rect" coords="29,39,59,54" href="http://www.easyimmersionllc.com/dom-casmurro-intensification/indefinite-articles" alt="One">
  <area shape="circle" coords="77,46,12" href="http://www.easyimmersionllc.com/dom-casmurro-intensification/noite" alt="night">
</map>


Appendix 16:

Dom Casmurro em HQ

Point Assignment Based on 1,000 Most Frequent Lemma

* Bolded words have a special value of 1,500 points.


Engenho Novo


Já [40] acabei [293].


Dom Casmurro
