



XXV Congresso de Iniciação Científica da Unicamp

October 18 to 20 Campinas | Brazil

25
anos



2017



Um estudo sobre a especificação ePUB para produção de livros acessíveis

Felipe Viglioni*, M. Cecilia C. Baranauskas

Abstract

Due to the growing popularization of digital books, the project intended to develop a web tutorial for people interested in editing e-book – acquainted or not with accessible ePUB e-book production. Therefore, we aimed at a studying about ePUB specification as well as developing a proof of concept on how to build a formatted book, including accessibility elements. A small collection of papers was selected about e-books and accessibility to support the study. Tutorials and ePUB building tools were also selected. The project was interrupted on May 2017 before the web tutorial due to author's personal matters.

Key words:

E-books, accessibility, ePUB, HCI

Introduction

Motivated by the constant growth of e-books, this Scientific Research project, started in August 2016, aiming at developing a web tutorial for book editors – acquainted or not with accessible e-book development.

“ePUB [...] is a format for representing documents in electronic form. [...] Like ‘e-book’ [electronic book], the ePUB name comes from a contraction of terms—in this case, Electronic PUblication. The choice of the more general term “publication” was deliberate, and it was selected specifically so that expectations of the format wouldn’t be pigeonholed into a single document type. [...] On a practical level, ePUB defines both the format for your content and how reading systems go about discovering it and rendering it to readers.”[30]

For the web tutorial creation, the Brazilian edital **PNLD 2018 [1]** guidelines were followed and during the process a study of accessibility elements and Human-computer interaction (HCI).

The study was organized in eight steps:

- I. Selection papers about state of art and design domain technique of e-book development
- II. The Study of e-book formats: Daisy, PDF, HTML5, ePUB, Mecdaisy
- III. Get deepen in ePUB3 specifications and accessibility elements
- IV. Gather ePUB reading and building tools
- V. Gather accessibility methodology and evaluation tools for e-books
- VI. Build a tutorial and a concept proof of e-book production
- VII. Testing the e-books created
- VIII. Organize the project's information in an accessible space in the web

Steps V and VIII were not made, due to the premature ending of the project.

Results and Discussion

Despite the usual adoption of ePUB as default e-book format it still not widely used by the general producers of e-books. One possible cause is the difficulty in the e-

book creation. Accessible creation is even more distant from the non-technical user. The paper **Creation of accessible ePUB documents by non-technical users: a long way to go [2]** did an accessibility study with common text editors' exports to e-books: *“Results indicate that these conversions are not acceptable – especially when it comes to the accessibility criteria – and that they make impossible the creation of quality ePUB documents by the non-technical user” [2].*

In order to create accessible e-book building guidelines, we used two different methods: the first was writing content directly inside the ePUB file. The second was using free software tools – Writer and Writer2ePUB[23]. The first trials resulted in an abstract text (*lorem ipsum*) using both methods. The results were satisfactory: functional index created, good word's and paragraph's spacing and selectable text.

The second trial involved an adaptation (using the second method) of a children's book called **O Ratinho Rói-Rói [3]** from a PDF file. Some problems appeared: irregular spacing between some pages; irregular text-image behavior; the images' alternative text weren't being read by the text-to-speak function. The spacing between pages was resolved in a third trial.

Conclusions

Regardless of the achievement of building a digital book, much more is still necessary to evolve it in terms of accessibility. The book we built as a proof of concept still has problems regarding some accessibility tests – e.g. text-to-speak functionality in images –, but the research so far shows that it is possible to use with free tools towards building accessible e-books. Although this project stopped before the proposed end, many lessons were learned about the complexities of producing accessible e-books.

[1] Edital de convocação para o processo de inscrição e avaliação de obras didáticas para o programa nacional do livro didático PNLD 2018 – 04/2015 – CGPLI, elaborado pelo Ministério da Educação.

[2] ROIG, J., RIBERA, M. (2015) Creation of accessible ePUB documents by non- technical users: a long way to go. Proceeding Interacción '15 Proceedings of the XVI International Conference on Human Computer Interaction Article No. 56

[3] HECK, L.A. O Ratinho Rói-rói, 1st ed., Lajeado, Editora Univates, 2010