

Potential of EPUB3 for Digital Textbooks in Higher Education

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Abstract. The e-book market is currently in a strong upswing. This research study deals with the question which practical uses the e-book format EPUB3 offers for (higher) education. By means of a didactic content analysis, a range of interactive exercise types were developed as a result of conversations with teachers. For this purpose, a didactic and technical concept has been developed. Different kinds of exercises were prototypically implemented in an e-book. In summary, it can be remarked that EPUB3 is suitable for a variety of different exercises and that it is able to serve as a basic format for forthcoming digital textbooks. Furthermore the openness of EPUB3 will assist Open Learning and Teaching in a meaningful way.

Keywords: epub, e-book, interactive, enhanced, e-learning.

1 Introduction

In our publication we are strongly interested in the open standard format EPUB (electronic publication). Due to the fact that Open Learning and Teaching are strongly based upon Open Educational Resources (OER) our research concentrates on open standards such as EPUB3. The International Digital Publishing Forum (IDPF) published the EPUB3 standard in 2011 [1]. This new format opens up numerous opportunities for teaching by utilizing state-of-the-art technology.

This research addresses the question of what content is suitable in the field of (higher) education [3] and how the didactic and technical creation process should look like. For this purpose, a field study is carried out and a prototype of a French textbook is developed. Thereby, common work sheets and exercises have to be implemented into the e-book to point out the strengths and weaknesses of the format in a technical and a content-related sense.

2 The EPUB3 Prototype

Talking to language teachers, we conducted a didactical content analysis of the teaching contents, which should take into consideration the different learning styles and types, the different levels of knowledge and the four communicative language competences stated by the Common European Framework of Reference for Languages (CEFR). The exercises should not be only drill and practice exercises in a behavioristic way [2], but should be varied, appealing, interactive, motivating and multimedia-based. Last but not least, the exercises should be auto corrective in order to assure immediate feedback.

JavaScript was employed as the programming language to implement interactive exercises and contributes to interactivity in e-books. In addition, it is of high importance for both creating and changing content. The core of the system is patterned according to the Model-View-Controller concept.

Considering the didactical concept as well as technical possibilities different exercises have been created. These can be divided into four main categories: *Drag&Drop*, *Text Assignments*, *Quizzes* and *Selection Tasks*.

After presenting the prototype to a wider audience (of language learners, teachers and non-language learners) they were at first sight impressed by the high level of interactivity and multimedia implementation. At the second sight the teachers were delighted by the appealing layout and the fact that the exercises covered the different language competences and proficiency levels as stated by the CEFR.

3 Conclusions

This research shows that a wide range of content can be implemented in EPUB3 format. It can be pointed out that the strength is a high level of interactivity with the user. This results in a high level of motivation, which could be demonstrated by implementing a prototype. Since EPUB3 is an open format, this has a positive impact on its spread. Even now it is supported by platforms and devices from different manufacturers, although not yet fully. According to the current state, extensive knowledge in the areas of HTML5, CSS3 and JavaScript, as well as EPUB specifications are necessary for the creation of EPUB3 publications.

References

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