Research project: Digital Education Material - CdC Inclusion

Duration: 04/12/2023 - 03/12/2025

Team: Macchia, Vanessa; Facoltà di Scienze della Formazione (Libera Università di Bolzano), Ricercatore a tempo indeterminato (Attivo); Centro di Competenza per l'Inclusione Scolastica (Libera Università di Bolzano), (Attivo); Facoltà di Scienze della Formazione (Libera Università di Bolzano), Dottorando (Concluso)

Partner: Politecnico di Graz, Università di Amburgo, Università di Vechta, Università Wilhelms Westfalen di Münster

Call for proposals

Erasmus+ KA2 - Collaborative partnerships in the fields of education, training and youth Istituto Nazionale di Documentazione, Innovazione e Ricerca Educativa

Abstract

"The book is like the spoon, the hammer, the wheel or the scissors: Once invented, it cannot be bettered. You cannot make a spoon that is better than a spoon."
(Eco & Carrière 2011, p. 14f)
Twelve years after this statement, it can be said that the author was arguably not 100 percent right. Besides nonfiction and fiction, this also applies to textbooks used in schools: digital educational media have long since entered the European school systems and are steadily gaining ground.
Thanks in part to the rapid "forced digitisation" in many places as a result of the pandemic, the digital textbook has once again come to the fore. Ease of access, interactivity, multimedia, accessibility, environmental friendliness, modernity, collaboration and personalised learning are the key benefits of digital textbooks in terms of modern and inclusive education.
However, the final step towards the full use of digital learning content, with all its advantages, has not yet been taken at European level in an international context. There are already several new concepts for digital textbook production and local implementation, but there is still a lack of concrete, centralised guidelines and practical information that on the one hand demonstrate the practical advantages of digital textbooks regardless of their format and, on the other hand, explain all

their application and development possibilities. In addition to the pedagogical requirements for the design of digital textbooks, some of which are different from those of traditional print media, the user experience and interface also play a key role: visual design, usability, accessibility, ease of use, stability, reliability and availability are just some of the aspects that contribute to the success of a digital textbook for all stakeholders. Furthermore, there is also a lack of a central point of reference to which educators, designers, computer scientists, technicians, schools, publishers and all other stakeholders in the development of digital textbooks can turn in order to find both concrete theoretical expertise and practical examples of digital textbook development at European, national and local levels.

The DEM project aims to address precisely these issues and to promote the introduction of digital textbooks in primary schools by providing concrete support so that as many pupils as possible can benefit from the advantages described above.

Aims and results

The aim of the DEM project is to provide concrete and practical support for the development of digital textbooks via a multidisciplinary team of experts:

In detail:

1. State of the art

The aim is to produce a state of the art review of the current state of research and technology. The aim is to show the current state of development of digital textbooks in Europe. By providing an overview of the latest methods, technologies, research results and recent developments, this state of the art will serve as a reference point, a source of expert information and a guide for teachers, parents, publishers, pupils, researchers and students. With a special focus on accessibility, the state of the art will also be of concrete benefit to inclusion specialists, as existing products will be tested and evaluated from an accessibility perspective by specialised partners. Teachers and educational professionals will be able to use this state of the art to access a source of information that has been professionally validated by the participants.

2. Pedagogical and technical guidelines

The pedagogical and technical guidelines for the development of digital textbooks for primary schools specify the didactic characteristics that a digital textbook must

have, as well as its design-specific and technical principles. It summarizes the different forms and types of subject-specific exercises and tasks in paper textbooks and shows how these can be implemented and presented in an accessible way in digital textbooks, taking into account all didactic aspects, including the full range of different operational and extension options designed for the student. Detailed technical information on how and in which formats an accessible textbook can be created completes the content of the guidelines.

The creation of these guidelines will provide future textbook developers, designers and technicians with concrete interdisciplinary knowledge about digital textbook development. Teachers can use the guidelines to understand and even implement the transformation of their traditional paper-based tasks into digital tasks.

3. Prototypes

Concrete prototypes will serve as practical partial examples of existing textbooks to show how the guidelines can be applied and implemented. These prototypes, in an illustrative form, will serve as practical examples for authors, publishers, teachers, researchers, students and all other interested parties, thanks to their accessibility and the explanatory texts accompanying each implementation, and will thus demonstrate the feasibility of the transition from the conventional printed textbook to the digital textbook, as well as its full potential.