Dynamic Mathematics Software and Interactive E-Books

Carsten Miller, University of Bayreuth, Germany

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Dynamic mathematics software is a valuable tool for visualisation of mathematical content at school and at university. In many situations students are asked to explore dynamic geometrical constructions or interactive graphs.

In the last years electronic books became best sellers. The increasing success of e-book readers and tablets (like Apple's iPad) are an ideal starting position to use these devices at school. With their huge touch displays they are lightweight, they offer nearly unlimited space and they are easy to handle. In addition to light fiction, publishing houses begin to offer first electronic school textbooks.

The educational benefits are numerous: less weight compared to traditional textbooks, being up-to-date, permanent availability and - most important - interactive content.

(Notebook) computers are not (any longer) required. Technology becomes (nearly) invisible. Content is instantly available at a fingertip. Normally the preparation of these interactive materials required expertise in web technologies.

In the meantime authoring tools (e. g. Apple's iBookAuhor) enable teachers to create their own interactive e-books. With the dynamic mathematics software JSXGraph interactive constructions can be easily integrated into e-books based on the standardised file format epub3.

Electronic textbooks are the basis for real interactive and experimental mathematics. The students can "touch" their constructions. The tablet becomes their laboratory. Instructional activities focus on essentials, the content. Inquiry based learning and teaching can be realised at a higher level.

The talk demonstrates scenarios how to use tablet based interactive textbooks at school. It shows how to easily integrate dynamic mathematics software and what changes are necessary in the way of teaching by using these electronic textbooks.