

THINGS YOU SHOULD KNOW ABOUT...™
THE EVOLUTION OF
THE TEXTBOOK

Scenario

Vivian, an art instructor at a large state college, teaches three drawing courses for non-majors, one each for students in archaeology, zoology, and botany. About a quarter of the students in these classes have never had any formal art instruction. For these students, who often struggle, Vivian recommends supplementary texts. But she thinks a new course text with animation might be more helpful. With that in mind, she has signed up to be part of a pilot program building interactive multimedia textbooks.

At the campus Center for Learning Technologies, Vivian explains to the technologist, Brad, that she would like to create animated sequences that demonstrate how to draw the half-dozen items students are most likely to draw in their disciplines. Students without much drawing experience could watch these step-by-step animations and copy the lines of the sketch as the drawing develops. Brad says they can build a textbook by using an application that creates animated, interactive objects. They can then aggregate those objects with text and other media into an attractive, magazine-like format that can be viewed with either iPads or Android tablets.

Brad introduces Vivian to Jenna, who will handle the animation. She recommends the sketches be relatively simple. This will limit excessive coding that could create huge files and bog down presentation speed. At the end of the meeting, Jenna makes a video of Vivian drawing a sample of stratigraphy, the layers of earth that reveal chronology in an archeological dig.

By the next meeting, Jenna has animated the drawing so it takes shape line-by-line. A voiceover, with content provided by Vivian, explains how sketches can be more effective than photography at revealing the fine points of line and soil texture that are important for specifying timelines. Jenna has even made the animation interactive so that students can “take over” sketches at any stage of the process by drawing on the tablet with a stylus to complete the image.

The following spring, Vivian opens the first class of Drawing for Archeology with her new, interactive content. By mid-term, responses to the interactive questionnaires embedded in the “textbook” indicate that students are more confident in their ability to draw than students in previous years and that enjoyment is higher as well, with the greatest gains among students with no art background.

1 What is it?

Traditionally, the processes of composition and publishing resulted in books or similar resources, which were typically printed. Early days of electronic resources tended simply to produce online versions of those same products. Today, **a new breed of rich-media publishing tools for tablet devices offers an evolving set of opportunities both for the creation process and for the kinds of resources that can be produced.** Although these resources can often “do” much more than what we typically think of as a book, the label of “book,” if not also the idea, tends to persist—Apple calls them “multi-touch books,” InKling refers to them as “smart books,” and others describe them as “interactive books.” The services and apps that create these resources offer the ability to generate content and publish it in a form not available with traditional textbooks—a form that could include 3D charts and tables, interactive maps, continual updates, and quizzes with instant feedback. For the instructor, these tools offer more options for presenting course materials, including making them interactive. As a result, students have more ways to immerse themselves in the content and to interact with others around that content.

2 How does it work?

The tools that create these media-rich, interactive products are so new that **models, standards, and approaches are still forming for the kinds of resources they produce and the process behind that production.** Some tools are applications, while others are more accurately described as services. 3D Issue, for example, is an application that creates an elegant magazine-style format for both iOS and Android devices; educators are using it to create textbook-style course content. The companies that provide these tools and services are aiming them at customers all over the academic map. InKling's Habitat service is offered to traditional publishing houses. Vook and other applications target business and enterprise customers. AcademicPub markets to instructors and groups of academics who want to create original texts or aggregate content into digital course packs. The company even offers copyright clearance services. Apple's iBooks Author targets users at all levels, though the company has designed its interface to appeal to the individual writer looking to self-publish to the iPad.

3 Who's doing it?

Many schools are exploring the use of iBooks Author, though most do not yet have completed publications. Boston College is sponsoring an iBooks Author pilot program for faculty who want to publish via this environment; a prototype text in neurosystems engineering is under construction using iBooks Author at the University of New Mexico; and at Montclair State University, students studying to teach English in secondary school will use iBooks Author to build their semester projects.

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Inkling is working with McGraw-Hill, Pearson, and other publishing houses to provide iPad users with rich-media, textbook-style course content. At Chatham University, instructional technologists have been working with the Vook platform, while those at Michigan State University are exploring the open-source Baker, an HTML5 framework for designers and developers who want to make books and magazines for the iPad.

4 Why is it significant?

Tablet devices and the publishing they enable are leading us to reconsider what constitutes a textbook, and they certainly change the landscape of what it has traditionally meant to write and publish one. With new tools, instructors who have struggled with texts that are a poor fit for the courses they teach can aggregate the exact course content they would like students to explore. Those experimenting with the best way to present information can explore audio, video, and interactive communication that is impossible with standard text and difficult within the traditional publishing model. Some tools, notably iBooks Author, are suitable for student use and could be employed for class projects or e-portfolios. The publication tools that target business and enterprise customers offer new opportunities for the departmental press where faculty may be interested in creating their own interactive textbooks.

5 What are the downsides?

Because this is an emerging technology, many of the current downsides might be resolved in the coming years as developers of these new tools find the right balance of flexibility and control for different users and contexts. **Developing effective interactions for these resources is a new competency, and only through experimentation will best practices emerge.** Publications created with tools such as iBooks Author and Baker E-book Framework might work only on an iPad or iPhone, meaning those who do not own the specified hardware will not be able to access those resources. As with any digital content, the inclusion of certain media can also present obstacles for users with disabilities. These apps can produce large files that may cause bandwidth concerns and storage issues for some users.

It is unclear how these new resources can be cited and how authors will make and distribute corrections. Content that is not subject to a traditional publishing process might not benefit from rigorous editing, which could compromise quality. Loss of the oversight provided by traditional publishing can also lead to copyright complications, particularly where many types of media are integrated into a single publication. When these “texts” are published (and in some cases printed), distribution must be addressed and might be limited by the tools that were used to design them—the license agreement for iBooks Author, for example, specifies that publications created in the app can only be sold through the iBookstore.

6 Where is it going?

Because no single product provides low-cost, easy-to-use solutions for rich-media publishing to all tablets and smartphones, **new tools are likely to emerge that will accommodate Android and other devices.** As smartphones evolve to take on more of the characteristics of tablets, they may become increasingly popular devices for consumption of these resources, allowing students to read, investigate, and interact with content from a pocket-size device. Students might interact in group activities from any location, facilitating group projects that require library research and field work. New tools and the resources they create could be part of efforts at the secondary and postsecondary levels to move entirely to digital textbooks. The tools to create these resources might eventually provide administrative interfaces that may allow instructors to see, for example, which students in a course have accessed a text or engaged with its multimedia features.

7 What are the implications for teaching and learning?

New kinds of texts and other resources can feature a variety of media, social networking, and immediate updates—as well as the carry-anywhere convenience of highly mobile devices—to provide a richer learning experience. Students might come to see “textbooks” less as discrete chunks of text and more as resources to explore and build upon. This new generation of books can take advantage of numerous aspects of digital media: Content can be easily resized and searched, links can facilitate different means of navigating a text and can provide access to related resources online, and images and charts can be manipulated by users with different sets of data. When these capabilities are combined with e-text reader software that allows users to annotate, bookmark, link, and cross-reference content, these resources become individualized course or content curation platforms. **This integration of text with various kinds of media, coupled with broad access to new creation tools, could result in these resources becoming valuable parts of students’ digital learning landscapes.**

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