This is the age of digital access, when books, music, videos, games, and a wide variety of apps can be downloaded to tablets and smartphones in seconds and enjoyed over and over again.

Higher education institutions entered this age by embracing e-books, digital versions of traditional texts that were soon enhanced with embedded videos and interactive features. Later, robust online courses gave students access to more downloadable learning content, such as PowerPoint presentations, articles, and web resources. Massive Open Online Courses (MOOCs) significantly expanded that reach.

Now, University of Texas at Austin, faculty and staff have partnered with Adobe to create a unique “course app” that supports e-books, videos, interactive apps, and MOOCs. They are building the app using Adobe Digital Publishing Suite.

“I loved the concept behind it,” says Garcia, “and I thought this might make a fantastic show.” He approached Webber with the idea of pitching the program to PBS. Webber agreed. “We didn’t dream it would turn into something so big,” Garcia says. But it did, first airing on Austin affiliate KLRU, then going into national syndication across 43 million homes, and eventually winning a Telly Award.

The success of the program got Webber and Garcia thinking about other ways they could present course content to large numbers of people in an accessible and inviting way. Webber says, “I’d been teaching energy courses since 2007 and I’d been unsatisfied with all of the energy textbooks. They didn’t quite cover the range of topics I wanted to cover, so one of the motivating issues for me was getting the content I wanted.”
At the same time, Webber had been working with multimedia, trying to make the teaching and learning experiences better. Webber’s desire was to have his energy courses reach as many people as possible, like the PBS special. He says, “Energy is a central part of society, but I feel as a society we make a lot of dumb energy decisions. I thought if we all knew a little bit about energy we could become more sensible.”

What emerged was a robust MOOC, a multimedia experience built on the framework of Webber’s Energy Technology and Policy course. Included in the MOOC were 10 hours of video content, with lectures shot before a live audience, all high broadcast quality. Also included were 75 interactive widgets and four complex energy calculators.

The MOOC was launched in September 2013 on the edX platform. Garcia says, “We initially had over 44,000 students signed up. In late November when we finished the course after ten weeks, our completion rate was 15 percent.” That’s an astonishing number for a 10-week MOOC, which according to some sources have completion rates as low, on average, as 8 percent.

“We knew we had something very special at that moment,” says Garcia, “and we heard from students in the MOOC saying, ‘We’d like to own this course.’” So Webber, Garcia, and Webber’s digital media team began thinking about how to deliver the MOOC to students in a way that would give them a sense of ownership, and that would bring access to the various media and materials together in a cohesive, mobile manner.

The plan to repurpose the material was in line with development practices being promoted at UT Austin. Says Harrison Keller, Vice Provost for Higher Education Policy and Research and Executive Director of the university’s Center for Teaching and Learning, “We need to develop learning experiences and content in a way that facilitates reuse in multiple modes of delivery. We need to talk less about developing MOOCs and think more in terms of developing a toolbox of high-quality learning experiences that can be deployed in different ways for different audiences.”

Garcia and the UT Austin team began exploring options and avenues for transforming the MOOC into a tablet-accessible course.

They chose a software solution from Adobe called Digital Publishing Suite (DPS).

Magazine publishers were using DPS to track readers’ interactions with publications, and understand consumer behavior. Garcia realized he could flip the model, and instead of using the data for advertising, it could be used for assessment, giving professors the opportunity to see how their students were performing in a course.

Within six months, the team had developed and deployed their Energy 101 course app, launching it on August 28, 2014. It was the first use of DPS in higher education as a course platform.

“We need to develop learning experiences and content in a way that facilitates reuse in multiple modes of delivery.”
In essence, the Energy 101 course app presents three layers: the original MOOC, with its 10 hours of video; 75 interactive widgets; four calculators; along with a 350-page textbook written by Webber; and an analytics component. Still in development, the analytics component embeds milestones and markers into all media assets to allow instructors to track who’s looking—or not looking—at what, which students have completed chapters; and where they’ve left off. The DPS technology allows educators to edit content based on learning patterns and outcomes.

Educators can adapt content on the fly and the technology automatically pushes updates into the hands of students. Also, the DPS curriculum enables the instructor to keep the material current. This is used in a course like Energy 101, where energy production numbers change year to year.

Webber says, “As a professor, I want to know: Are they using the material and have they mastered it?” DPS analytics allows educators to track how students are engaging with the content, including whether or not they are watching the video, how long are they watching it, and how long they stay on each page. This kind of data is not possible with a traditional textbook.

Built for tablets running either Android or iOS, the Energy 101 course app is now available on Google Plus and iTunes at the cost of $49.99. Traditional textbooks, can cost up to $150. For students who don’t own tablets, a desktop version is also available. Duke and Stanford Universities have adopted it for use in their courses, making it required reading for about 200 students.

“We have to think about infrastructure for these initiatives in the same way we think about classroom space or meeting space and program space,” Keller says. “We want to be able to support more faculty who are innovators, pushing back the frontier of how we can deploy these technologies for students around the world.”

The energy 101 course app is distributed by University of Texas Press. To order, visit: http://energy101.com/adobe.

Adobe and the Adobe logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.