

EDUCATION WEEK

E-Curriculum Builders Seek a Personalized Approach

Flexibility to address students' varying abilities seen as key feature of high-quality content.

By [Michelle R. Davis](#)

With a wealth of online courses for school districts to choose from, plus an abundance of interactive activities, videos, and digital information to sift through to design such courses, school leaders are embracing a variety of approaches to build online curricula.

Districts are buying online classes from nonprofit and for-profit providers, making their own from scratch, accessing open-source options, or combining all three approaches. Despite often being considered a “new” avenue of education, online-course providers say they’re tapping years of experience to determine the leading methods of appealing to students and getting them to interact with online material.

“We’re always learning what is most effective and what’s not,” said Cheryl Vedoe, the president and chief executive officer of the virtual-course provider Apex Learning, based in Seattle. “We’re developing a significant body of knowledge from our experience.”

Some research has already given schools and course providers a few guidelines on the hallmarks of a good online curriculum, said Cathy Cavanaugh, an associate professor of educational technology at the University of Florida, in Gainesville. One of the most important aspects of an online course, she said, is a direct connection between strategies and activities in the course and outcomes or goals.

“Some districts apply an evaluation process to look at whether a course is designed in a way that aligns it toward leading students to accomplish standards,” she said. “That must be a fundamental aspect of the course.”

When it comes to instruction, Ms. Cavanaugh doesn’t consider an online offering that is solely computer-based, with no teacher support, a true course. “It may be interactive and provide digital assessments, but for K-12 students a course must be moderated and mediated by an online teacher,” she said. “The instructor is a key element.”

Within an online course, the teacher should play a central role, assessing students, facilitating their engagement and the learning experience, and providing feedback, Ms. Cavanaugh said. There should be a number of ways for students to interact with teachers—everything from e-mail to Skype and instant messaging.

With both teacher- and computer-based assessments, high-quality online courses should be able to provide more differentiated instruction than a student might get in a face-to-face class, Ms. Cavanaugh said.

Apex is thinking hard about how to meet students on those different levels. Nearly all the company's core courses are offered in three versions: advanced, proficient, and a level for students who are struggling to achieve basic literacy.

"We have really found that the most significant benefit of online learning in a digital curriculum is that it can more easily and effectively address the needs of individual students," Ms. Vedoe said.

Focus on the Individual

To customize the company's curriculum, each version of the same Apex course employs different techniques to reach students, Ms. Vedoe said. In the advanced version, there are more opportunities for students to apply and extend what they're learning, and those courses may contain more graded work. The courses aimed at proficient students may have more study sheets, worksheets, and graphic organizers; the literacy-focused courses, while containing much of the same material, may provide more audio of instructional texts, while students read along.

E-Curriculum Do's and Dont's

Building online curricula that engage students and work for Web-based classes takes more than just digitizing the coursework used in a face-to-face classroom. To connect with students and keep their interest in the online world, experts have developed a list of do's and don'ts for crafting online curricula

DO:

- Make sure online courses meet state standards.
- Provide multiple points of entry for the material, including text, video, and audio.

- Use games and simulations to engage students.
- Use wikis, blogs, message boards, and chat rooms to encourage students to interact with one another and the teacher.
- Seek feedback from students about the features they like or don't like in online courses.
- Review established courses annually to update them with new features or make sure links are still current.

DON'T:

- Include large blocks of uninterrupted text for students to read on their own.
- Distract students with too many multimedia bells and whistles for a particular lesson.
- Use fancy graphics or animation just because they're the latest digital fads. (Make sure new features advance the curriculum.)
- Include critical information likely to be tested in optional parts of the course.

Some philosophies Apex has developed may seem counterintuitive, Ms. Vedoe said. For example, Apex plays down the use of video in some courses aimed at struggling readers, she said.

"The natural assumption is that if you're dealing with at-risk students who have struggled in school, that you want to use more media, video and such, but researchers have found that can be extremely distracting to poor learners," she said. "You want to get them more focused with fewer distractions."

Joy Smith, the chief development officer at the Florida Virtual School, or FLVS, based in Orlando, said the state-sponsored school's courses offer a variety of paths for students in accessing material contained in an online course.

For instance, a middle school critical-thinking course, designed to enhance students' analytical skills and to impart academic and life skills, allows students to enter as a "reader, writer, thinker, or learner," she said. Though students ultimately must complete each course path—the thinker path, for example, teaches goal-setting and looking at how to learn from failure—students are permitted to choose the way they go through the online course.

Allowing them to choose makes students feel as if "they have ownership" over their learning, Ms. Smith said. "We don't tell them what to do. We give them opportunities to pick what they're interested in."

Ms. Smith said FLVS is also doing more project-based learning within courses, using projects that build on each other. For example, a FLVS health course requires students to either create a Web site, commercial, or article that teaches teens about community wellness. Whichever project a student chooses, each activity takes them step by step through the process of creating, say, an article, by coming up with a topic and creating an outline.

Emphasizing project-based learning helps address the issue of academic integrity, so students can't copy and paste from Internet sites or look up yes-or-no answers, Ms. Smith said. Though it's impossible to completely prevent students from plagiarizing, using project-based learning makes it more difficult than using a multiple-choice assessment that could allow students to search easily for answers, she said.

Designers of FLVS courses also make sure that whether the course is biology or a foreign language, there are certain cohesive components so students consistently feel comfortable with the way material is presented. Tabs run across the top of each course for easy navigation, and most are laid out in a way that Ms. Smith describes as learn, practice, and assess.

The Florida Virtual School emphasizes a "mixed" approach to building the courses. The course designers use videos, for example, from the Silver Spring, Md.-based Discovery Education or try to find other high-quality applications already created and then add their own material.

"Our first attempt is to find something that we can wrap our instructional strategies around," Ms. Smith said.

The interactivity of the FLVS courses is also a high priority. Students might be asked to research a topic together and present viewpoints, or they might debate an issue or contribute to group discussions. An Advanced Placement course about the environment, for example, has students plan a "green" vacation together, Ms. Smith said.

To better understand what is working or not working in its online courses, Ms. Smith said FLVS makes it a point to survey students regularly. Students are clamoring for ways to use their mobile phones, for instance, so the Florida school is working on embedding opportunities to use smartphones into some courses.

Custom-Built Courses

Though schools often have their students take courses from online schools such as FLVS or purchase courses from companies like Apex, some decide to build their own.

Mary T. Schlegelmilch, the e-learning supervisor for the 46,000-student Omaha, Neb., public schools, said she often focuses on looking for multimedia applications that will pique students' interest. "We're looking for new creative technology that will engage students in the learning process," she said.

Ms. Schlegelmilch said the district learned quickly that "you can't just put worksheets and a textbook online," particularly when an online course is being developed for students seeking credit recovery to make up for courses they've failed.

"If a student fails in a regular classroom and you give them the same thing again but just online, you're not going to get anywhere," she said.

Elements of a course need to be kept to short, manageable nuggets—no 50-minute videos, she said.

To build their own courses, district curriculum supervisors in Omaha first look at open-source options, such as the National Repository of Online Courses, a nonprofit group based in Marina, Calif., that provides free, high-quality online courses. Next, they might turn to other organizations—such as the National Geographic Society— that offer high-quality materials even though they aren't free.

The Omaha district often buys what Ms. Schlegelmilch calls "learning objects"—a video, simulation, animation, or podcast—and builds a lesson around those objects.

She said many of the textbooks the district already owns have online versions, which also have supplemental materials that can be incorporated into an online course.

Chris Rapp, the former curriculum director at the Boise-based Idaho Digital Learning Academy who now works for the Evergreen Education Group, said curriculum specialists at the academy build their courses in a similar manner, looking for learning objects that work within the lessons they're trying to create.

"We try to cherry-pick the best stuff," he said.

He cited a simulation the state-sponsored online school bought from ExploreLearning, a Charlottesville, Va., company that sells simulations aimed at grades 3-12. That simulation mimics a common live lab experiment in which students study the effect of a sprig of seaweed placed into a vial with a snail, compared with a vial containing just a snail. The students put vials in the light and the dark and measure the effect that the oxygen produced by the seaweed has in keeping the snail alive. With the simulation, students can try all the scenarios, but don't have to wait days or weeks to see the outcome, Mr. Rapp said.

Much of online-course creation is based on boosting interaction with students, Mr. Rapp said. "Whenever we build a course, we think about how the student is interacting with the content, with the teacher, and with other students," he said. "Everything is designed around making those things occur."

Themistocles Sparangis, the chief technology director for the 680,000-student Los Angeles Unified School District, said his district gets courses from local universities and from Apex Learning, but also creates its own.

The first step in evaluating courses is to make sure they meet the academic standards for California, he said. Mr. Sparangis said he, too, puts an emphasis on feedback and cooperation in online classes. He said online courses can capture a detailed picture of students' participation by examining how often they log in to a course, how much time they spend online, how they progress through the course material, and the extent of their participation in chats, blogs, and wikis.

"In a traditional classroom, the teacher has to engage in many techniques to monitor engagement: moving around the room, checking student body language, listening to their group conversations," Mr. Sparangis said. "In the online world, I can monitor electronically in much more detail. It's a powerful tool."