

Connexions Takes Open Source Approach to Education Content

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The Rice University open publishing project Connexions has scored an on-demand printing deal with Qoop, a content delivery company, aimed at making the educational site's materials more accessible and printable for educators and students.

Inspired by the open source software movement, where software code is open and shared among developers around the world, Connexions' goal echoes that of Internet search and software giant Google (Nasdaq: GOOG) -- "to offer all of the world's knowledge for free in all of the world's languages," Connexions founder and Rice Electrical and Computer Engineering Professor Richard Baraniuk told LinuxInsider.

"Beyond textbooks, I think we are going to see an explosion in open access content across all scholarly publication forms, from textbooks to research monographs to journals, as more authors and scholars realize that their work will have far greater impact [as open access documents] and as more institutions and organizations realize the efficiencies to be gained," Baraniuk said.

Content Like Code

He explained how Connexions -- supported by Rice and the William and Flora Hewlett Foundation with US\$2.25 million -- makes all of its materials, including courses and modules of "small knowledge chunks," available under the Creative Commons attribution license, a copyright alternative that allows greater access to licensed information.

"This enables [Connexions' materials] to be used, reused, and improved by anyone worldwide, as long as they attribute the author," Baraniuk said. He went on to liken Connexions to the [open source software](#) movement in both its ethos and its technical approach.

"First, the goals of sharing ideas and building on the shoulders of your peers are shared by programmers and scholars alike," he said. "Second, similar to modular software, Connexions takes a modular approach to educational materials."

Textbooks On Demand

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Baraniuk said the entire Connexions toolset, called Rhaptos, is [open source](#) software, and it includes other open source software, such as Zope/Plone content management, OpenOffice (to convert documents to XML), and a free, open source XML document editor, Etna, that is now in development and beta.

Traveling in Vietnam to announce that government's nationwide open-access education platform based on Connexions, Baraniuk added that response to Connexions has been positive, with use seen in college and K-12 classrooms, distance learning, and other settings.

"Demand is surging," he said. "Each month, the Connexions servers are handling over 16 million hits representing over 500,000 unique visitors from 157 countries, and growing by about 12 percent per month."

Cutting Quality?

While the Connexions approach -- which includes successful volunteer translation projects in Spanish, Chinese, Japanese, and other languages -- may help address the issues of textbook price, availability and relevance, the project faces a significant challenge in providing both quantity and quality of content, said Portland State University Associate Professor Bart Massey, a leading educator on open source software and artificial intelligence .

"A big concern with the Connexions model, shared by many open content and vanity press type arrangements, is that the lack of editing and validation may be a big problem," Massey told LinuxInsider.

He said the Connexions model, while interesting, did not provide enough content in his discipline, and some of the most relevant and current material

was contributed by an undergraduate student -- "and it shows," Massey added.

Next Open Wave

Nevertheless, Massey said open content was the "next open-process wave," after open source software, and with Connexions and other efforts -- including MIT's Open Courseware Initiative, Wikipedia, and academic journals such as those under the Public Library of Science -- the trend toward more open, shared content is increasing.

"If the Connexions folks can solve the content problem, providing a large enough repository of up-to-date, well-edited, well fact-checked information to serve for useful customization, this will be huge," Massey said. "If they don't, someone else will." 