

Interviewer: Dave Mosher.

Interviewees: Ed Wilson and Neil Patterson

Place: Palo Alto

Date: October 20, 2010.

The following is a direct quote of Ed Wilson's comments filmed for Wired Magazine:

“Two years ago Neil Patterson and I began to talk about the idea of having a course designed with digital modules to replace the standard textbook.

I had taught elementary biology for 42 years, and I didn't need a lot of explanation to see immediately what a big difference this would make.

This in my opinion is an authentically revolutionary advance in science and technology education.

I sure would have learned biology a lot faster, and I would have been a far more effective student, and I think I would have gone farther and deeper in research when I got to the graduate level if I had the kind of background that I know is going to be provided in a very palatable and exciting way in Life on Earth.

If we pull this new kind of textbook and method of teaching off now, at this time in the century ...

This is biology's century. This is the century in which we've got to solve the great problems and make the great discoveries concerning life on this planet.”

Here is the article Dave Mosher wrote to accompany the sample video for Wired Magazine:

“Science textbooks are born as clunky, out-of-date tomes the moment they roll off the printing press. Research simply moves too fast for the publishing industry to keep up. Digital texts could end this cycle. Textbooks designed to be all-digital and interactive from the start (as opposed to simply converting print books) could bring not only salvation to schools because they’re easily updated, but also a revolution in how students learn science. Yet publishers are comfortable with a \$5 billion-per-year college textbook industry that has recently seen price increases outpace inflation by more than 250 percent, and 99% is tied to paper.

One not-for-profit organization is done waiting for the digital textbook revolution.

Within two and a half years, the E. O. Wilson Biodiversity Foundation, named after the naturalist and co-founder, hopes to complete a 59-chapter digital textbook about biology called Life on Earth. As each chapter is finished, the foundation plans to put it into the hands of anyone who wants it. For free.

[Actual cost in 2013: \$1.99 on iTunes]

We have video of the first chapter, ‘Cell Division,’ with interactive animations that will be integral to the text (see above). It will be available for download within a few weeks.

“Neil Patterson, director of Life on Earth, with 50 years of science textbook publishing experience to his name, said the format could revolutionize science education for students. ‘Motion and film are powerful ways of teaching,’ Patterson said. ‘We’re trying to exploit the human brain, like videogames do, and it’s not a small matter to use technology now available to us.’ By “no small matter,” Patterson means money. Completing the books chapters, laced with high-end interactive animations and video interviews with Nobel laureates, could cost as much as \$10 million. ‘No publisher is doing what we’re doing, which is developing, from scratch, a serious digital textbook,’ Patterson said. He added that only \$1 million of that funding --- half of it from Life Technologies Foundation --- is in place, and the remaining \$9 million remains to be seen from private and public donors. ‘It’s expensive, but once you’re done you can keep it up to date across time, globally, essentially free of charge.’

[Patterson and colleagues obtained two offers to fund the project: \$12,000,000 from Apple, Inc. and \$12,000,000 from NewsCorp; they accepted the Apple, Inc. offer to have the digital text available exclusively in Apple's iPad.]

“The foundation plans to sell university-level editions for about 10 percent of the cost of the average print textbook, in part to fund that continuous updating. Kindergarten through 12th grade will be free.

Patterson said the idea is to provide any student in the world unprecedented learning tools, but acknowledged imminent backlash from profit-seeking publishers. ‘If we give away our stuff and they’re trying to sell it, that’s a serious threat,’ Patterson said. ‘That will be disconcerting to them, but eventually these publishers will be trying to produce what we are producing.’

Looming threats to the print industry aside, the effort isn’t without it’s digital critics.

Matt MacInnis, founder and CEO of the digital publishing startup Inkling, said textbooks have not yet evolved to meet the needs of today’s students.’ But he suspects Life on Earth --- which may come packaged with a homework server, community forums, a student data hub and other systems -- will have to compete with school districts’ multimillion-dollar investments in similar products. ‘I think it’s wonderful to see innovation like this, and it’s noble to make great content available to schools free of charge, but I hope they’re thinking beyond the book,’ MacInnis said. ‘By that I mean why would I, as a school, want to mess around with so many systems just for one text?’

Morgan Ryan, Life on Earth project director and a textbook developer for 20 years, didn’t discount such problems, but thinks content is king.

‘If you create something vital for classrooms, something that they need, it will find its way into those classrooms,’ Ryan said. Noting that schools will be free to use whatever portions of the book they see fit. ‘We’re aiming for the highest quality of content and the lowest threshold of access possible here.’

Regardless of the digital content teachers choose, affordable reading devices remain the biggest hurdle to student access. ‘We’ve gone from the

\$999 laptop to the \$499 iPad in no time at all,' MacInnis said. 'I'm optimistic that in three to five years, device costs will no longer be a barrier.'