

## **The Impact of Web 2.0, XML, and OER on Education, by C. Sidney Burrus**

**Abstract:** Web 2.0 and XML are the basis of the next generation of the World Wide Web. One of the areas of greatest impact will be education. The current web and HTML have been on the first phase of impact by giving a picture of information. The adding of metadata through XML is the second phase which will allow "knowledge" as well as information to be encoded in a document and make documents more machine readable as well as human readable. Teachers and educators are only beginning to think about how to use this but it has the potential of being the largest paradigm shift in the history of teaching. Examples of the use in mathematics, chemistry, and music will be given with speculation on other areas.

The Open Educational Resource (OER) movement was inspired by the Open Source movement in computer software development. If a common format such as XML and a common (or compatible) copyright license is used, communities of authors, teachers, and learners come into being in a new way. They are productive in completely new ways. GNU/Linux, OCW, Wikipedia, Connexions, QOOP, Creative Commons, GPL, OSI, Teachers without Borders, etc. are examples of that. The coupling of educational material encoded in XML and available on the web with the Creative Commons copyright system will not only revolutionize education but the publication industry that feeds the current system.

**Bio:** C. Sidney Burrus is Senior Strategist of the Connexions Project and Research Professor at Rice University in Houston, Texas. Over the last 40 years, he has been Dean of Engineering, Chair of the Electrical Engineering Department, and Director of a Research Institute at Rice. He has authored 5 books and over 200 articles on Digital Signal Processing and received teaching awards from Rice and research awards from the IEEE (Institute of Electrical and Electronic Engineers) and others.

The Connexions Project started in 1999 at Rice University to apply modern technology and theory to education. It has grown to be one of the most used Open Educational Resources (OER) in the world. Burrus has been closely involved with it since its founding and has lectured widely on it.

Prof. Burrus received his PhD from Stanford and has held visiting positions at MIT and the University of Erlangen in Germany. He was on the founding committee for the new private university in Bremen, Germany, International University Bremen (Now named Jacobs University).