

The World Library of Science

Quality Science Education for All

A joint initiative of UNESCO and Nature Publishing Group



OER represents the biggest potential expansion of educational opportunities since the establishment of land grant colleges two centuries ago.

— *David Wiley, Professor, Brigham Young University*

Innovation isn't born in the boardroom or on the factory floor . . . That's where the payoff happens. But it starts long before. It starts in a classroom . . . Leadership tomorrow depends on how we educate our students today — especially in science, technology, engineering and math.

— *President Obama, Remarks at the launch of Change the Equation, Sept. 16 2010*

High Quality Education for All

The World Library of Science is the first open online learning resource covering the entire life and physical science curriculum at the secondary and post-secondary level. The Library will offer high quality material drawn from Nature Publishing Group's authoritative publications, including *Nature*, *Scientific American*, and 70 leading science journals, as well new instructional materials developed specifically for the World Library.

The Library will contain 2500–3000 learning modules in all concepts of life and physical sciences, arranged into standard curricula but capable of full customization by all institutions; and a robust web-based and mobile-based delivery system providing access to materials, tutors, and academic information to any faculty or student with basic connectivity.

The World Library of Science is intended to transform global science education by creating a common ground of current, research-oriented, vetted information and curriculum for all.

The Need for Open Science Resources

At the dawn of the 21st century, our scientific needs are greater than ever before, as we face an expanding set of global challenges: the threat of pandemic diseases, rapidly increasing energy needs, and sustainable agriculture and water management for a burgeoning world population. These challenges require a global generation of scientific leaders and widespread appreciation for the value of science among people at large. Yet many societies lack the resources to train the next generation of scientific leaders, or even to establish a basic level of scientific literacy. Undereducation in the sciences is preventing the global community from fully tapping the inherent potential in human capital, innovation, and economic development.

The hurdles to scientific progress are many: poor access to world class teaching and learning materials, poorly trained teachers, insufficient labs, poor IT and mobile infrastructure, lack of institutional accountability, outdated curriculum, limited career opportunities.

Tapping Human Potential

Education resources — textbooks — remain one of the largest barriers to quality education. In the absence of sufficient numbers of well-trained instructors, education resources become all-important drivers of students' development. Yet the quality and reach of current print-based textbooks are poor. Schools in developing countries might have only one, outdated science textbook. Providing all students in the developing world with access to world class teaching and learning materials will significantly enhance the quality of science education around the world. It will also reduce costs for education, freeing up national capital for investments in infrastructure and teacher development.

Whereas establishing institutional accountability, implementing teacher development programs, and creating a commercial R&D sector are complex initiatives that involve broad political transformation over several years, developing an openly accessible global library of vetted teaching and learning materials and curriculum in the sciences can realistically be addressed within just a few years. The result would be a watershed in world science education; the benefit would be felt immediately.

Under the joint guidance of UNESCO and Nature Publishing Group, content will be developed in collaboration with faculty advisors drawn from all global regions; as published, content will be designed to fit into the widest possible variety of international contexts. Progressive phases of the project will initiate strategies for promoting and enabling localization of all materials by indigenous partners.

The World Library of Science will simultaneously:

- Build science education capacity by providing all science instructors with high quality, vetted, classroom-ready learning materials
- Promote broad scientific literacy by making comprehensible current information available to all students enrolled in science courses
- Cultivate young R&D talent worldwide by connecting would-be researchers with up-to-date knowledge
- Leverage technology to help make science education affordable for all