



Views You Can Use

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Education Trends

Virtual Books Replace School Library's Print Collection

Students at Cushing Academy in Massachusetts still check out books at the school library, but instead of getting a heavy load of hardcovers, the librarian hands over one of 65 Kindle™ handheld electronic book readers with the requested text downloaded. The co-ed boarding school for high school and postgraduate students recently removed most of its 20,000 library books.

While Cushing likely is the first school in the country to fully digitize its library collection, other schools are becoming more interested in the e-book concept. St. Elizabeth's Catholic School in Chicago, for instance, is integrating the use of portable e-book readers for its 45 4th grade students. The program, funded by a Title III technology grant, provides the two classes with a set of Rocket eBooks to share. The school is training the two teachers and the administrators on how to use and adapt available content. Broward County Public Schools in Florida is considering a virtual-book pilot program at one of its magnet schools. "We've seen the future and we think it is in virtual books," school board member Robert Parks said. "Right now, we are exploring the idea further."

<http://www.eschoolnews.com/news/top-news/index.cfm?i=32553&page=1>
<http://mashable.com/2009/09/05/school-library-e-readers>

Sure, Give Us Incentive Pay — But It's Not the Best School Improvement Strategy

The majority (71%) of generation Y teachers (born between the late 1970s and the late 1980s) are open to incentive pay, but only 10% rate standardized testing as an "excellent" measure of student success, according to the report, *Supporting Teacher Talent: The View From Generation Y*. Despite openness to incentive pay, young educators say it's not their first choice as a strategy for improving teaching. The idea of tying teacher rewards to student performance ranked last among 12 proposals, including requiring new teachers to spend more time teaching in classrooms under the supervision of experienced teachers, requiring teachers to pass tough tests of their knowledge of the subjects they are teaching, and ensuring that the latest technology is available in each classroom to aid instruction.

The report, released by Public Agenda and Learning Point Associates, is based on six focus group interviews conducted throughout the country and a national random-sample survey of 890 public school teachers conducted in spring and summer 2009 that included an oversample of 241 teachers aged 32 and under. The work was supported by the Bill & Melinda Gates Foundation and The Joyce Foundation.

Source: www.publicagenda.org/pages/teaching-for-a-living

Global Trends

Future of Solar Industry Shines in China

While the solar industry in much of the Western world is struggling in today's economy, with falling prices, fewer government subsidies, and credit drying up, China has taken center stage in this sustainable energy market. Chinese companies, such as Trina and Suntech, are undercutting their counterparts on price for solar panels. In addition, demand for sustainable technologies in China continues to rise, as the country seeks to cut its reliance on coal-fired plants significantly. Trina secured a \$300 million loan from a group of Chinese banks to build a new factory for integrated photovoltaics. Recently, Arizona-based First Solar signed a deal to build the world's biggest solar power plant — in Inner Mongolia. The American company also is likely to build a factory to make thin-film solar panels in China. China's green technology market could reach \$1 trillion annually by 2013, according to a report released by the China Greentech Initiative and the American Chamber of Commerce.

Sources: www.istockanalyst.com/article/viewarticle/articleid/3477332

Newsweek, Sept. 21, 2009

http://www.nytimes.com/2009/09/09/business/energy-environment/09solar.html?_r=1

Biotechnology Trends

Accelerating Production of an H1N1 Vaccine

By using virus-like particles (VLPs), researchers have found a faster way to produce a vaccine to combat the H1N1 virus, responsible for this year's flu pandemic. VLP vaccines are not composed of a dead or weakened flu virus like the traditional vaccines. Instead, they consist of particles that self-assemble from the proteins that make up the shells, or outer coat, of the virus. Since the proteins resemble the structure of the virus, they are effective at getting a response from the immune system, but they contain no influenza genetic material. Most significant, VLP vaccines can be made quickly — in three or four months. Pharmaceutical companies have struggled over the last nine months to produce enough traditional vaccine to combat the virus.

In October, three pharmaceutical companies initiated a two-stage clinical study of a VLP H1N1 influenza vaccine in Mexico, and the vaccine is expected to be distributed in Mexico in 2010 if it is approved for commercial sale. Researchers have worked with VLPs for more than 20 years. A breakthrough came in 2006 when the U.S. Food and Drug Administration approved Gardasil[®], the first vaccine proven to be effective against the human papillomavirus, which can cause cervical cancer.

Sources: www.technologyreview.com/biomedicine/23782

www.novavax.com/download/releases/NVAX%20MexicoOct%20FO.pdf

Shedding Light on New Treatment for Down Syndrome

Increasing the levels of a message-carrying chemical in the brains of people with Down syndrome may help prevent memory deficits that hinder learning and make it hard for

individuals to develop normally, according to research findings from the Stanford University School of Medicine and Lucile Packard Children's Hospital. Memory deficits inherent in Down syndrome hinder learning, making it hard for the brain to collect experiences needed for normal cognitive development.

In the study, the researchers found that the mice with Down syndrome-like dysfunction had lower amounts of the neurotransmitter norepinephrine (which nerve cells use to communicate) in the brain than normal mice. The mice injected with drugs to boost the levels of norepinephrine showed improvements in their thinking ability by building nests on a par with those of normal mice. Researchers were surprised to see the drug work so fast, but also noted that the effects did not last long. Some drugs already on the market for depression and attention deficit hyperactivity disorder target norepinephrine levels. Salehi said he hopes the findings will lead to new research on these drugs in people with Down syndrome.

Source:

<http://esciencenews.com/articles/2009/11/18/new.down.syndrome.treatment.suggested.stanford.packard.study.mice>

Nanotechnology

Nanotubes — a Potential New Fertilizer

Carbon nanotubes, thin cylinders of carbon about 1/50,000th the width of a human hair, are used to make new materials and electronics because of their strength and unique electrical properties. Scientists now believe nanotubes also could enhance food production by serving as a fertilizer.

Researchers at the University of Arkansas found that when they planted tomato seeds in a soil that contained carbon nanotubes, the seeds germinated faster and grew into larger, heavier seedlings than the nontreated seeds. Within four weeks, tomato seedlings exposed to the nanotubes had grown to twice the height of the other plants. One reason for the faster growth, the study found, was that the nanotubes penetrate the outer coat of the seed, boosting water uptake and thus accelerating germination. Experts warn that more research is needed to address unforeseeable safety issues. No one knows, for instance, what side effects people could face if they ingested nanotubes.

Source: www.yearofscience.org/carbon-nanotubes-found-to-increase-plant-growth/

By the Numbers

Teaching for a Living: How Teachers See the Profession Today (see Education Trends above) revealed the attitudes and motivations of K-12 teachers from across the country. Based on individual characteristics and attitudes about the profession, teachers fell into three broad categories:

1. Disheartened — 40%. More than half of this group teach in low-income schools. Teachers are more likely to voice high levels of frustration about the school administration, disorder in the classroom, and an undue focus on testing.

2. Contented — 37%. Most teachers in this group said their schools are “orderly, safe, and respectful,” are satisfied with their administrators, and agree that they have sufficient time to craft lesson plans. These teachers tend to be veterans — 94% have been in the classroom for more than 10 years. About two-thirds are teaching in middle-income or affluent schools.
3. Idealists — 23%. These teachers voiced the strongest sense of mission about teaching. Nearly nine in 10 Idealists believe that “good teachers can lead all students to learn, even those from poor families or who have uninvolved parents.” More than half are 32 or younger and teach in elementary schools,

The percentages of teachers in the three groups who strongly agree that all their students, with the right support, can go to college are as follows:

- Disheartened — 39%
- Contented — 30%
- Idealists — 54%