Views You Can Use

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Education Trends

A Call to Teach Science to the Youngest of Students

According to a study by researchers at the University of Florida and Carnegie Mellon, science education can play a critical role in improving early childhood classroom practices and encouraging students to become interested in science during their K-12 school years. Yet, the study, which tested the school-readiness skills of more than 5,000 preschool students who completed the Head Start program, found that these students end their prekindergarten year with science readiness scores significantly lower than readiness scores in all other measured domains. The study, called *Science in the Preschool Classroom: A Programmatic Research Agenda to Improve Science Readiness*, is one of a number of research efforts underway to encourage educators to teach scientific concepts even before children enter kindergarten.

At the Education Development Center in Newton, Mass., researchers have crafted a Young Scientist curriculum series, with support from the National Science Foundation, that focuses on teaching preschoolers about the natural world and developing their knowledge of physical science through building structures and water play. Researchers at Rutgers University have published a book on the subject called *Preschool Pathways to Science: Facilitating Scientific Ways of Thinking, Talking, Doing, and Understanding*.

Source:
www.edweek.org/ew/articles/2010/01/13/18preschool.h29.html?tkn=ZYYFP8Uepm5DZmPTu%2B7WjgMarnEBmHsqhdJ%2B

Complete a Four-Year Degree in Three

Some universities and four-year colleges are starting to promote a quality education in three years, instead of the typical four, to save students money. At Hartwick College, in Oneonta, N.Y., 16 first-year students and four second-year students enrolled in the small liberal arts school's new three-year degree program. Graduating in three years r will save them about $40,000. Other schools that are beginning to offer three-year-degree programs include Bates College in Maine and Ball State University in Indiana. Judson College, a small college in Alabama has offered such an option for the past 40 years.

Tuition for higher education continues to soar, plunging students into unprecedented debt. Helping students save money by cutting out a year can mean staying in business for some colleges.

Changes at the high school level are making it easier for students to earn their undergraduate degrees in less time. One in five students enrolls in college today with AP credits amounting to a semester or more of college-level work. Some educators say there are drawbacks to moving through school at such a fast pace. It reduces time for engaging in extracurricular activities and social networking, as well as studying abroad.

Sources: www.newsweek.com/id/218183
www.nytimes.com/2009/02/25/education/25hartwick.html

Global Trends

Tough Internet Competition

In early January, Google threatened to terminate its services in China because of government restrictions there. But that may be only part of the story. Other major American Internet companies, such as Yahoo, Facebook, MySpace, and Twitter, have failed to gain significant traction in China, not only because of censorship, but also because the competition is fierce with major Chinese Internet companies that offer popular social networking features of their own.

By some measures, China is the world's largest Internet market, and many experts thought that Google would be able to penetrate it. Google's biggest rival is Baidu, which holds 63% of the Chinese search engine market to Google's 33%. Google set up business in China in 2006 after it invested in Baidu and then reportedly failed to buy it outright. Baidu, founded in 2000, has built a strong presence by offering something that Google initially did not: easy links to download pirated songs, TV shows, and movies from Chinese websites. In the latest news, Google has said it will censor its search services so it can gain greater access to China's Internet market.

Sources: www.nytimes.com/2010/01/16/technology/16failure.html
http://news.bbc.co.uk/2/hi/technology/4645596.stm
http://newsforums.bbc.co.uk/nol/thread.jspa?forumID=7411&edition=2&ttl=20100216031250

Biotechnology Trends

Next Step in Advanced Imaging

A new technology developed by Oxford scientists could be the next big step in advanced imaging at an affordable price. It will allow doctors to capture high-quality still images that correspond exactly to high-speed video for better surgical and diagnostic performance. The research team combined off-the-shelf technologies found in standard cameras and digital movie projectors. The result was the creation of an integrated camera in which the picture and video are captured at the same time on the same sensor. This is done by allowing the camera's pixels to act as if they were part of tens, or even hundreds, of individual cameras taking pictures in rapid succession during a single normal exposure. The pattern of pixel exposures keeps the high resolution of the overall image, which can then be used as-is to form a regular high-resolution picture or be decoded into a high-speed movie.

The Oxford team has previously created an animated model of the heart that allows viewing the organ from all angles and seeing all the layers, from the largest structures down to the cellular level. This is done by using powerful computers and advanced optical imaging tools to combine different types of information about heart structure and function. This technology requires a combination of speed and detail that until recently had been difficult and expensive to achieve using current photographic techniques.

Source: www.upi.com/Science_News/2010/02/15/Scientists-create-photographic-technique/UPI-36301266267850/

Technology Trends

Accelerating Scientific Discovery Via the Semantic Web

Researchers at Rensselaer Polytechnic Institute in Troy, N.Y., are developing Semantic Web technologies so that data can be compiled and shared on an unprecedented global scale. The work, supported by the National Science Foundation, should hasten scientific discovery and innovation by enabling rapid and easy collaboration between scientists, educators, students, policymakers, and ordinary citizens. The goal is to provide a toolkit for scientists and educators that allows them to gain access to data from a variety of sources and, importantly, outside of their direct area of expertise. With the increased specialization of most scientific research, even people in closely related fields struggle to interpret the data of their contemporaries. These scientific language barriers can hinder the pace of new discoveries.

The new toolkit will have a foundation in Semantic Web technology. Current technology requires a user to interpret the meaning of words ("climate change," for example) and then manually move on to another website for additional information. Semantic Web technologies offer their own underlying meaning to words and provide links to related websites, which might include nonprofit organizations and upcoming Senate bills or files stored on the user's computer.

Source: www.physorg.com/news173630296.html

Scientists Warn of Dangers of Advanced Machines

Will we soon witness the likes of Hal-9000, the computer in the movie *2001: A Space Odyssey* that could predict equipment failure, be a team player, and sing “Bicycle Built for Two” while going insane? Some scientists say that we might not be too far off in creating such machines, which could cause profound social disruptions and have other dangerous consequences. For example, robots that can kill on their own, without human control, are being developed. The scientists also point to advancing technologies, such as experimental medical systems that interact with patients to simulate empathy, as well as computer worms and viruses that are becoming ever-more difficult to terminate. The biggest concern among the computer scientists, artificial intelligence researchers, and robotic engineers who met at the Asilomar Conference Grounds in California is that advanced technology could disrupt the workforce, with machines replacing humans as software-based personal assistants and personal healthcare assistants, to name a few.

Source: www.nytimes.com/2009/07/26/science/26robot.html

By the Numbers

The top 10 worst jobs for 2010 re listed below. The methodology used took into account the physical demands of the job, work environment, stress level, and hiring outlook.

10. Mail carrier
9. Meter reader
8. Construction worker
7. Taxi driver
6. Garbage collector

5. Welder
4. Dairy farmer
3. Ironworker
2. Lumberjack
1. Roustabout (performs routine physical labor and maintenance on oil rigs and pipelines)

Source: www.careercast.com/jobs/content/ten-worst-jobs-2010-jobs-rated#top-ten-list

Correction: In the January issue of Views You Can Use, *the summary under "Education Trends" on the push for a national education standard said that all states have joined the Common Core State Standards Initiative. However, Texas and Alaska do not support the initiative. We regret the error.*