take the global tour of intel's education efforts

PROGRAMS, IDEAS, AND SUPPORT THAT ENCOURAGE INNOVATION AND LEARNING WORLDWIDE

KATHERINE STEVENS, INSTRUCTIONAL DESIGNER

Intel is making a difference in education on six continents. The Global Tour on the Intel Education Web site lets you explore some of the ways that Intel is involved in education around the world.

• See how Costa Rica is using robots to strengthen its national technical and engineering education programs.

• Find out about the first Intel Computer Clubhouse in Africa, which provides a safe, creative environment where young people from under-served communities work closely with adult mentors to explore their own ideas, develop skills, and build confidence through the use of technology.

• Understand how the Intel® Teach to the Future program helps Polish teachers meet new professional development standards.

• Learn about Ang John Wei, a student in Malaysia, who created a software application that converts a person's singing or humming to musical notation. Wei was the first place winner at the Intel National Schools' Science Innovation Competition 2002.

Take the Global Tour at intel.com/education

"Intel is committed to being an asset to our communities worldwide. We will continue to support our education efforts—they are long-term investments in our future and the future of our world."

Craig R. Barrett, CEO
Intel Corporation

intel ®

innovation in education

Intel® Innovation in Education Events

We will be participating in the following events. Be sure to look for us. We want to meet you.

NATIONAL MIDDLE SCHOOL ASSOCIATION (NMSA) CONFERENCE
October 31-November 2, 2002 — Portland, Oregon

NATIONAL SCHOOL BOARD ASSOCIATION (NSBA) TECHNOLOGY + LEARNING
November 13-15, 2002 — Dallas, Texas

NATIONAL SCIENCE TEACHERS ASSOCIATION (NSTA) REGIONAL CONFERENCE
November 14-16, 2002 — Portland, Oregon

For updated news and events visit:

www.intel.com/education

Register to receive electronic version at www.intel.com/education

intel.com/education

wildly successful school project

AN EFFECTIVE VEHICLE FOR PROFESSIONAL DEVELOPMENT

SUZIE BOSS, WRITER, NORTHWEST REGIONAL EDUCATIONAL LABORATORY

*E*ffective professional development activities give teachers the chance to be learners. That may sound simple, but it sums up what researchers have concluded about how to improve teacher quality. The best professional development is active, collaborative, built into the daily routines of school, and tied to student success. Web sites, with continuing information and resources, can be central to this development.

Like most veteran teachers, Meile Harris has yawned through her share of workshop sessions. "Experts tell us how to teach, without ever modeling the strategies they're talking about. They lecture to us about why not to lecture to our kids," says the middle school math teacher.

When Harris has a chance to lead professional development activities, however, she engages her colleagues in lively learning projects just like those she creates in her own classroom. One of her favorites, called *It's a Wild Ride*, involves designing a roller coaster. "We make sure teachers experience it from the students' point of view," Harris says. "They enjoy the chance to be learners, and that's why they get so fired up about taking this idea back to their own classrooms."

VIDEO AND WEB RESOURCES

Featured on the Intel® Innovation in Education Web site, *It's a Wild Ride* is an interdisciplinary project that Harris and two colleagues from Twin Falls, Idaho, created to engage middle school students in the design of roller coasters—along with the study of Newton's Laws of Motion, linear and nonlinear equations, and technical research and reporting.

The Intel Web site includes a detailed description of how the project came together, with the teaching team's suggestions for planning a project, organizing time, using the tools of technology, and assessing learning. The site also offers downloadable workshop materials for use by professional developers. The short video that shows the project in action is also available free of charge.

Looking back on the evolution of the project, Harris can see how it hit the high points of good professional development. She and her teammates started with an authentic question they wanted to answer: How could they design a project-based unit that would engage students in the study of math, science, and language arts? Working collaboratively, they drew on one another's strengths in content areas. They took time to experiment with teaching strategies, analyzed the pros and cons of activities, and anticipated what might go wrong when they introduced the activities to real-live middle-schoolers. And as soon they wrapped up the pilot unit, they immediately began revising plans for the next time.

"It keeps evolving," Harris says, "as we pull in more pieces, enhance it, analyze it. We keep learning, and keep trying to improve what we are doing."

LEARNING FROM TEACHING

Stanford education professor Linda Darling-Hammond advocates for professional development programs that "envision the professional teacher as one who learns from teaching rather than as one who has finished learning how to teach." *Doing What Matters Most: Investing in Quality Teaching*, a report

Darling-Hammond coauthored for the National Commission on Teaching and America's Future, highlights professional development strategies that are:

- Experiential, engaging teachers in concrete tasks of teaching, assessment, and observation that illuminate the processes of learning and development
- Grounded in participants' questions, inquiry, and experimentation
- Collaborative, involving a sharing of knowledge among educators
- Connected to and derived from teachers' work with students
- Sustained and intensive

For teachers preparing to embark on a professional development activity that will incorporate these strategies, Harris shares one more tip: "Don't wait for everything to be perfect before you begin. There will always be drawbacks—scheduling, people, leadership. You have to be willing to be a risk taker. That's all part of the art of teaching."

For more information about *It's a Wild Ride*, see the Intel Innovation in Education Web site at www.intel.com/education/wildride.

what's inside?

springboard for learning

workshops cater to regional needs

SUZIE BOSS, WRITER NORTHWEST
REGIONAL EDUCATIONAL LABORATORY

NEW INSTITUTE TAILORS PROFESSIONAL DEVELOPMENT SESSIONS TO AUDIENCE

Not all learners are alike. That's just as true for adult learners as it is for school-aged children.

Providing professional development workshops tailored to meet the needs of specific audiences is the idea behind the new Intel® Innovation in Education Institute.

Instructional leaders, curriculum specialists, classroom teachers, and others involved in using technology in education will be able to select workshop topics from a menu of FREE course offerings.

Institute workshops will demonstrate how to make the most of the growing number of free tools and resources already available on the Intel Innovation in Education Web site. Hands-on sessions, conducted in a technology lab setting, will show educators how to effectively use resources such as:

- *It's a Wild Ride*: A video and Web-based case study featuring three middle school teachers who created an interdisciplinary, technology-infused project about designing roller coasters

- *Seeing Reason*: A causal mapping tool that helps students construct models of their own thinking

- Innovative Lesson Plans: Exemplary ideas for project-based learning that integrate technology, designed by teachers

- Effective Technology Integration: Tools and ideas to help instructional leaders motivate and inspire teachers, students, and community members to make effective use of technology in the classroom

Institute workshops can be delivered as a series of training events or as stand-alone sessions. Sessions range from 90 minutes to three hours in length. Course descriptions include specific learning goals for participants.

Information about upcoming dates and locations of workshops will be available soon on the Intel Innovation in Education Web site.

Organizations interested in hosting an Intel Innovation in Education Institute Program can learn more about scheduling and other criteria by sending an e-mail request to ilene.aginsky@intel.com.

Interested participants can receive updates by registering for an online version of this newsletter at www.intel.com/education/news_registration.htm.

Adapt Projects to Your Needs

TEACHERS SHARE EXEMPLARY UNIT PLANS
JANE KRAUSS, CURRICULUM SPECIALIST

*B*ecause teachers seldom get the chance to watch their colleagues at work, some of the best teaching ideas never leave the classroom where they were developed. A collection of ideas worth borrowing is being developed as a free resource on the Intel® Innovation in Education Web site. Here, teachers who have participated in the Intel® Teach to the Future program share their exemplary unit plans for project-based learning that integrates technology.

Covering all disciplines and grade levels, the exemplary plans at intel.com/education/unitplans offer something for everyone. Teachers can download the unit plans and use them "by the book," just as they are presented. Or teachers can use them as a springboard for developing their own innovative projects.

Unit titles show the wide range of projects, from "The Physics of Phlying" and "Living Large in Metric" to "Monster Swap" and "Music of the Westward Expansion." Each unit presents the complete cycle of instruction, from planning to final assessment. Each is mapped to specific content standards and includes assessment tools and illustrative samples of student work. A "From the Classroom" profile introduces the reader to the teacher who developed each unit and describes the context in which the project originated.

WHAT MAKES THEM USEFUL

The plans exhibited on the Web site have been selected because they exemplify a project-based approach to instruction and employ technology in meaningful ways. In "Red Light, Green Light," fifth-grade students collect and analyze traffic and pedestrian data in the area around their school (even using radar guns to track vehicle speeds!), and think of ways to make everyone safer. Using charts and multimedia, students illustrate their research as they make recommendations to their city council at a public hearing.

In some unit plans, teachers use technology to take learning in new, otherwise inaccessible directions. In "Monster Swap," primary students use scanners and e-mail to send their drawings of scary monsters to e-pals in another country. Under separate cover, they send carefully written descriptions of their awesome beasts, and challenge their pals to match the essays to the pictures. What could have been a dull lesson on descriptive writing becomes amazing and unforgettable as students are given a new reason to communicate and a new way of expressing themselves.

The collection of unit plans will continue to expand, making this a site worth returning to for teachers in search of fresh ideas for creating meaningful learning experiences.

Tool Makes Inquiry Learning More Effective

STUDENTS CAN SEE THEIR THINKING
JANE KRAUSS, CURRICULUM SPECIALIST

*A*s teachers design more inquiry-based lessons that put students in the driver's seat of their own learning, they give up some control of the learning process, and are sometimes privy only to the end results. *Seeing Reason*, an online resource offered at the Intel® Innovation in Education Web site, can help make inquiry-based projects more effective and emerging understand more visible. At the core of *Seeing Reason* is a free interactive mapping tool that helps students construct models of complex systems.

MORE THAN ANOTHER CONCEPT MAPPING TOOL

Concept mapping helps students organize factors and show relationships. The *Seeing Reason* causal mapping tool goes further, prompting students to describe how factors relate to one another. As thinking changes over time and supporting evidence grows, students save successive iterations of their map. At any point in a project, a teacher can look at a group's series of maps and write remarks for the team to consider. A teacher might ask students to quantify a relationship, congratulate them on their thinking, or suggest a new line of inquiry.

SEEING REASON IN THE CLASSROOM

Classroom examples on the Web site show how students can use the interactive tool to take on diverse questions of cause and effect such as these:

- How does Richard III contribute to his own eventual demise? (Shakespeare's *Richard III*)

- Why is diversity increasing (or decreasing) in our neighborhood? (Neighborhood Diversity)

A detailed description of one unit includes insights from two teachers who worked together using *Seeing Reason* in a project about forensic science. In *Get a Clue*, middle school students use the causal mapping tool to analyze evidence as they ferret out a crook. Idaho math teacher Meile Harris says, "When using most technology tools, the technology is right in your face. I found that with *Seeing Reason* you almost forget it is there–what you are doing becomes more important than the tool you are using. You're so focused on the information, you're not even realizing that you're making a causal map."

Some examples coming soon may include:

- How did we get here? (Emigration and Immigration, Past and Present) and,

- What diseases could I get? (Disease Risk Factors and Personal Health).

innovative leadership

Content Delivered to Your Doorstep - Virtually

WEB CONTENT SYNDICATION
TIM LAUER, INSTRUCTIONAL TECHNOLOGY SPECIALIST

*T*eachers know they can use the Web to gain access to vast amounts of news and information. Teachers may even start the day by visiting relevant Web sites to obtain lesson ideas or the latest news and research findings that apply to their classes. As teachers' resources increase, however, they may find it difficult and time-consuming to visit all of their favorite sites.

With Web syndication teachers can gather and view Web content more efficiently. Web syndication allows users to subscribe to content feeds from individual Web sites and view the feeds in a customized Web page or a separate application, which is called a *news aggregator*. By using an aggregator, teachers don't have to constantly visit useful sites for updated information. Instead, teachers can rely on the news aggregator to bring the useful information to their computer. Content feeds usually include a title and a short description for easier browsing, and the latest information is always located at the top of the page.

Now content from the Intel® Innovation in Education Odyssey Web site is available through Web syndication. Every day, this site presents a new story about a teacher who is successfully using technology in the classroom worldwide. These stories provide other teachers with ample ideas and inspiration for their own classes. For more information visit www.intel.com/education/syndication.

Sites such as NewsIsFree (www.newsis-free.com), offers links to more than 3,200 ready-made Web feeds, including content from the Intel Innovation in Education Odyssey Web site. These feeds also offer everything from general news published by major media outlets to Web site postings tailored to specific audiences.

An Innovation Odyssey ▶

A World Tour of Innovative Uses of Technology In Education

Day 178: BRADFORD, Vermont— Growing up in the country doesn't automatically make teenagers experts on their rural environment

To learn more about Web syndication, and how to subscribe to the Odyssey stories, please visit the Intel Innovation in Education Web site at www.intel.com/education/syndication.

Technology Leadership Makes a Difference

FOCUS ON LEARNING
JANE KRAUSS, CURRICULUM SPECIALIST

SCHOOL TECHNOLOGY IN DEER PARK, TX
*T*echnology integration during the last decade has been a challenge for school districts all over the country, and the pace of change has left many breathless. School districts must find leaders who can keep up.

When Kari Rhame arrived at Deer Park School District in Texas to direct the technology initiative in its schools, every teacher had a computer, but few were integrating the technology into their classrooms to improve student learning. She tackled the technology integration by combining different opportunities.

"Our first goal was personal competence, which was fairly easily met," Ms. Rhame says. "Our second was to use technology well with kids. I wanted to get people past certain points, but didn't have a program that was comprehensive enough to get us there."

INTEL® TEACH TO THE FUTURE PROVIDES SOLUTIONS FOR DEER PARK
Deer Park School District found a solution to its instructional technology needs with Intel® Teach to the Future. The program provided:

- Comprehensive technology instruction for over 700 teachers, promoting a common foundation and a shared vision

- A strengthened leadership network with twelve classroom and technology teachers trained to be Intel Master Teachers, promoting continued innovation beyond the Intel Teach to the Future training

- An opportunity for the district to link resources to staff development (assuring that technology goes to those most eager to learn new practices)

The Intel training for teachers helped the district develop strong scaffolding on which to build new teaching practices. There's been an important shift in the kinds of problems teachers are raising around technology in their classrooms. Teachers have begun to ask technology questions related to their teaching goals, not just questions about hardware and software problems. Becky Hicks, a tech support specialist, says, "I love it when I have a teacher say, 'I just know there's a way to make good use of a spreadsheet in this math lesson; can you help me figure out how?' That shows me we've moved beyond personal productivity and into more meaningful use of technology with kids."

interview

WENDY HAWKINS,
DIRECTOR OF EDUCATION, INTEL

Wendy Hawkins oversees such ambitious efforts as Intel® Teach to the Future, the Intel® Innovation in Education Web site, international science competitions, collaborations with higher education, and many other programs to improve education around the world.

HOW DO THESE DIVERSE EFFORTS COME TOGETHER?
What we're really interested in is making sure that all students get the education that will allow them to pursue opportunities in the high-tech future. We know that kids are veering away from the math and science courses that will keep those doors open to them and we want to change that. We're especially interested in those who have been under-represented in our industry.

WHERE DID YOUR VISION OF GOOD TEACHING COME FROM?
We collaborate with education experts to help us understand how we can most effectively make a difference in education. We engage their energy and attention because they know that Intel can help make changes in education. And they are excited to be able to work with us to help determine what those changes should look like.

HOW ARE THE PROGRAMS YOU'RE DEVELOPING AT INTEL HELPING TO MAKE A DIFFERENCE IN EDUCATION?
If you look at the whole continuum, from kindergarten to starting a job, there are a number of key junctures where you can make a difference. We know middle school is a critical time for girls, when they are beginning to seriously consider their options. They really respond to practical experiences that help make the connection from their current choices to their future. Research has shown that project-based learning in kids' education is something that can make a real difference in how they experience learning. You see that thread through all of our programs.