The Intel® Innovator

Tools and Resources for Educators Winter 2003

Elementary and Secondary Education

Online Tools Prompt Students to Use Thinking Skills

Visual Ranking, Seeing Reason: **Two in a Growing Suite of Resources**

What goes on in classrooms where students exercise their higher-order thinking skills? Plenty. These are active learning places where students engage in robust discussions, pursue investigations, analyze complex information, and solve problems. Teachers play a critical role, of course, facilitating learning activities and posing questions that take students' thinking to deeper levels.

To help teachers and students make the most of active learning experiences, Intel® Innovation in Education is developing a suite of online tools, available at no charge and accessible from any computer connected to the Internet. With two tools now available and more in development, these online resources help teachers design, set up, and manage classroom projects across a wide range of grade levels and subject areas.

"Our tools are based on cognitive research that shows how kids think," explains Dr. Jim Pollard, Intel's lead researcher for developing online education tools. The first two tools available online are *Seeing Reason*, which prompts students to think about cause-and-effect relationships in complex systems, and *Visual Ranking*, which involves making and comparing ordered lists. Both tools also offer teachers valuable insights into student understanding.

Newest Resource

The newest online resource, *Visual Ranking*, offers an interactive workspace for ranking and comparing lists. *Visual Ranking* includes an easy-to-use tool that allows students to arrange factors in an ordered list, explain their reasoning through use of comment boxes, and compare their results with lists made by others.

Barbara Barker incorporating comparisons and rankings in her second-grade classroom.

What do students learn from making ordered lists? The process involves a wide range of cognitive skills, including analysis, evaluation, and decision making. For example, a social studies teacher might ask students to order a list of U.S. presidents according to relative "greatness." As students arrange names in their lists, they weigh what they know about the presidents against their own criteria for assessing greatness.

Visual Ranking includes a correlation feature that enables students to compare their results with their classmates' lists. Whether a class project involves ranking the elements of a good mystery story or listing the steps involved in cell meiosis, the *Visual Ranking* tool helps students set priorities, debate differences, make correlations, reach consensus, and organize ideas.

Visual Ranking was introduced this fall after nearly a year of behind-the-scenes development and field-testing with classroom teachers. The resource includes the online tool and teacher workspace, along with examples of projects from a variety of subject areas and grade levels. Related resources highlight strategies for using the tool in the classroom and recap research from the field of cognitive science.

Creating Tools for Learning
Working with researchers and teachers to develop and adapt tools for online delivery that meet his criteria for "powerful, interactive, cognitive tools," Pollard looks for resources that meet the following key goals:

- **Students use the tool directly.** Teachers design effective learning projects and set up class workspaces, but students use the online tool themselves. Hands-on, dynamic, manipulative tools that students control help meet the needs of diverse learners.
- **The tool helps teachers find out what students are thinking.** By capturing a record of student thinking, a good tool gives teachers a window into student understanding. Knowing what students are thinking enables teachers to better address individual learners' needs. Teachers and students can see how understanding changes over time with the introduction of new concepts and content.
- **Activities are generative.** Rather than using a tool for a one-time task, students go back and use the tool again after they have learned new information or gathered research data. Generative activities support student learning over time, as students gain new understanding built on what they already know.
- **Tools are open-ended, reusable, and not limited by content areas.** They can be integrated across disciplines and used at a wide range of grade levels.
- **Online resources support best teaching practices.** In addition to delivering powerful tools for online learning, the Intel Innovation in Education Web site also includes ideas for putting tools to use, strategies for effective instruction, and research that is the basis for the tools and learning activities.

Making cognitive tools available online adds more advantages. "This is anywhere, anytime learning," Pollard explains. Both students and teachers appreciate being able to store and access class projects from any Internet connection.

The online learning environment also makes it possible for students to connect with resources beyond the classroom. Learning teams can be organized across distant locations, allowing students to exchange ideas with learners in other communities. Using the *Visual Ranking* tool, for example, students might compare their lists with those created by various audiences—students in the same class, students at other locations, or parents or other adults who are experts in a particular topic.

For more information about these tools, visit:

- *Seeing Reason* www.intel.com/education/seeingreason
- *Visual Ranking* www.intel.com/education/visualranking

With more new tools in development, the suite of online resources will continue to expand in the months ahead. To stay current about new tools and resources, subscribe to *The Intel® Innovator*.

Elementary and Secondary Education

Visual Ranking Resources

Promotes Higher-Order Thinking Skills

Visual Ranking is the newest online resource on the Intel® Innovation in Education Web site. *Visual Ranking* includes an easy-to-use tool that allows students to arrange factors in an ordered list, explain their reasoning through use of comment boxes, and compare their results with lists made by others. The *Visual Ranking* tool helps students exercise their higher-order skills though setting priorities, debating differences, making correlations, reaching consensus, and organizing ideas.

The tool and related resources are available for free, from any computer that is connected to the Internet. Here are the resources you'll find at www.intel.com/education/visualranking.

Overview
Learn about the features of the *Visual Ranking* resource.

Classroom Strategies
Learn from teachers who have used the tool. They offer ideas for planning a project, using the tool in an activity, and assessing what students have learned.

Benefits of Visual Ranking
Read what the research literature says about the learning opportunities in making, ordering, and comparing lists.

Try the Tool
See how easy it is to use the tool.

Project Examples
See how other teachers have used *Visual Ranking* in the classroom in a variety of subject areas and grade levels. Learn from them how the tool promotes lively discussions as students apply criteria to evaluating lists.

Teacher Workspace
Set up a project when you're ready to use the *Visual Ranking* tool with your class. Use the Teacher workspace to review and comment on students' work.

Elementary and Secondary Education

Why Register?

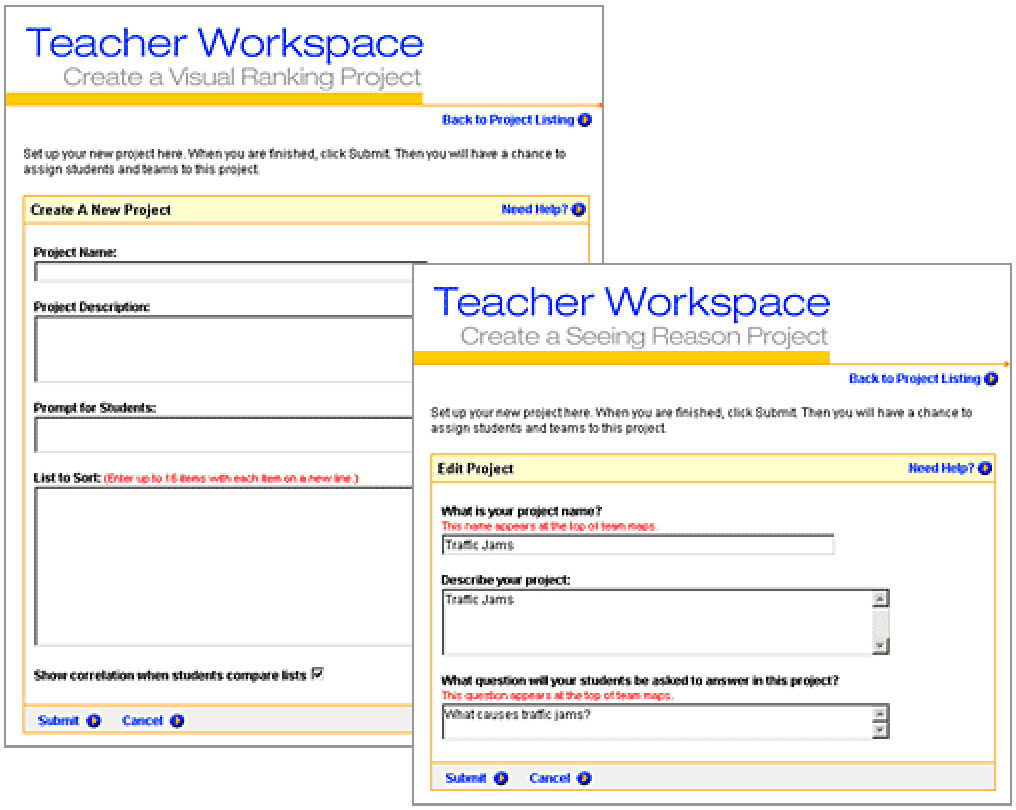
Take Advantage of Teacher Workspace

What's the first step in using *Seeing Reason* and *Visual Ranking*, the cognitive tools available on the Intel® Innovation in Education Web site? Register online and set up your own teacher workspace for planning and managing student projects.

With a free, one-time registration, teachers can build projects and manage accounts for their students. Once they have registered and selected a password, teachers can access all of their projects from one point of entry. This makes it easy to manage multiple projects. Projects are stored on the Intel server, which means teachers and students can get to their work anywhere, anytime, from any computer connected to the Internet.

The two tools and related resources are among the many online resources available from Intel Innovation in Education. *Seeing Reason* prompts students to think about cause-and-effect relationships in complex systems. *Visual Ranking* involves making ordered lists.

For more information about using the online tools, go to www.intel.com/education/seeingreason, and to www.intel.com/education/visualranking.



Elementary and Secondary Education

What Does Success Look Like?

Student Scientists and Inventors From Around the World Share Their Stories

A young mountain-biking enthusiast from Wales invents a radio-controlled security alarm small enough to fit inside his bicycle frame. A girl from the United States dreams of becoming a pilot and spends her free time testing airfoils in a wind tunnel. A boy from the Philippines discovers a wonder drug with antibacterial properties.

What do they have in common?

All three students have experienced the success of tackling an independent research project and seeing it through to completion. They share their stories on Profiles of Success, an online resource about high school students from several countries who have competed in national science fairs and the Intel International Science and Engineering Fair (Intel ISEF).

Fifteen profiles illustrate the habits of mind and behaviors that underlie student success, including curiosity, persistence, and resourcefulness. The student profiles are organized by broad themes, including:

- Finding a Good Project: Where do good project ideas come from?
- Persisting Despite Challenges: Students describe how they have learned from setbacks and reflect on what keeps them motivated.
- Getting Help: Teachers, parents, and other mentors often provide valuable assistance to young researchers.
- Changing the World: Today's young scientists, mathematicians, and inventors deserve to be taken seriously.
- Enjoying a Brilliant Experience: Students share their passion about the independent research experience.

Alex, from Wales, turned his design for a better bicycle security system into a successful science fair project.

Profiles of Success offers ideas and inspiration for both teachers and students. Teachers who want to encourage and support student researchers can learn from participants' accounts of what has helped them through this process. Teachers will also see why science fairs are worth the investment of time and energy. Students can browse this collection of stories and learn from their peers around the world. To read their stories, visit www.intel.com/education/isef/profiles.htm.

Elementary and Secondary Education

Mathematics Teachers Gain Insights

Online Course Promotes Exploration of Strategies From Around the World

Since a new program for mathematics teachers became available earlier this year, educators and instructional leaders have been inspired to think about effective teaching strategies used around the world. *TIMSS Video Studies: Explorations of Algebra Teaching* uses digital video clips and online software to take teachers on a virtual tour of classrooms from three countries known for high student performance in mathematics.

In the Alvord School District in Riverside, California, two groups of teachers have taken the course as a professional development activity. As a result, teachers are bringing new strategies into their classrooms and seeing their students make greater progress toward understanding mathematical concepts.

"The most powerful insight has been the importance of teaching a concept versus teaching an algorithm of how to do an operation."

"I jumped at the chance to take the course and get other teachers involved," says Michael Kolonics, an eighth-grade teacher and mathematics department head at Wells Middle School. "I'd heard about the TIMSS research and was eager to learn how math is taught in other cultures."

Earlier this year, Kolonics enrolled in *TIMSS Video Studies* with about a dozen teachers from his district, including five from his school. They met as a group one evening each week for six weeks, with facilitators present. They also used online resources to pursue independent studies, keep a log of their reflections, and engage in dialog with other teachers.

Teachers watched and reflected on video case studies of algebra lessons from classrooms in Hong Kong SAR, Japan, and Switzerland—all known for high student achievement in mathematics. "We gained a good picture of different ways of teaching. It was enlightening," Kolonics says.

The course builds on the research base generated by the Third International Mathematics and Science Study (TIMSS) Video Studies, sponsored by the U.S. Department of Education. The online course was underwritten by the Intel Foundation, and is presented by LessonLab whose founder is Dr. James Stigler, director of the TIMSS Video Studies and author of *The Teaching Gap*.

For Kolonics, the most powerful insight has been "the importance of teaching a concept versus teaching an algorithm of how to do an operation," he says. In particular, he was impressed by what he observed in Japanese classrooms. "Teachers in Japan don't try to cover a lot of stuff in a short time. They teach less content but spend more time on it, with extensions that go deeper."

Kolonics has wasted no time in putting his insights to use in his own classroom. Rather than teaching mathematics through algorithms and drills, the way he was taught, he now encourages students to develop their own solutions to problems. Different students might come up with several solutions to the same problem, and that's fine with this teacher. "Different students learn in different ways. You have to give them time to think," he says, if students are going to master the underlying concepts of mathematics.

Another group of teachers from throughout the district signed up for the course this fall, and teachers want to continue their conversations about effective teaching. In department meetings, Kolonics says, "we talk about ways to teach the concepts. We share strategies that are working." Such conversations are helping pave the way to improvements. "Our students are making more progress," he says. "You can see the lights go on."

For more information about enrolling in *TIMSS Video Studies: Explorations of Algebra Teaching*, go to www.intel.com/education/math.

Elementary and Secondary Education

A Guided Tour of Handhelds

Online Resource Shows How to Make the Most of Small Computers

They're powerful, portable, and engaging for learners. No wonder handheld computers are migrating from the corporate world to the classroom. The same features that have made handhelds popular tools in business—portability, organizational capability, and affordable price—are making them indispensable tools for many teachers, administrators, and students.

What are the best strategies for using handhelds as learning tools? The *Learning With Handhelds* online resource, part of the Intel® Innovation in Education Web site, provides educators with information and ideas to help them use these tools effectively. *Learning With Handhelds* includes three sections: About Handhelds, Managing With Handhelds, and Teaching With Handhelds. Here's an annotated guide to the contents on www.intel.com/education/handhelds.

About Handhelds
What is a handheld? How do these portable devices work? How expensive are they? These questions and other common concerns are addressed here. Many teachers are initially reluctant to use such small devices, but the tips and tricks provided here should help you to address concerns and begin using handhelds effectively.

Teaching With Handhelds
What are effective strategies for using handhelds in the classroom? Instructional examples illustrate strategies for teaching and learning with handhelds. This section will grow as more examples are added to improve the functionality and flexibility of handhelds in the classroom.

Managing With Handhelds
Administrators, teachers, and students can all use help when it comes to managing schedules and keeping track of assignments. This section takes a look at the management tools offered by handhelds.

Delivering Mobile Content
As handhelds grow in popularity and connectivity, more and more Web sites are developing "handheld viewable pages." Currently, all of the instructional examples for *Learning With Handhelds* are viewable on PocketPC* and Palm OS* handhelds, and on Symbian*-based, Web-enabled cell phones.

Here's what a typical instructional example looks like when viewed on a hand-held screen.

Elementary and Secondary Education

Celebrating Two Years of Innovative Teaching

More Good Ideas From *An Innovation Odyssey*

Since *An Innovation Odyssey* was launched in January 2002 to showcase teachers who use technology to enhance student learning, the online collection has grown to include more than 350 stories from 25 countries.

Now moving into its third year on the Intel® Innovation in Education Web site, *An Innovation Odyssey* continues to deliver a daily dose of inspiration. In the months ahead, readers can look forward to seeing more great ideas, with stories sorted into themes that appeal across subject areas and grade levels. Some stories are brand new to the collection and others are worthy of a second look.

Interested in inspiring a sense of adventure in your students? Look for a series of stories that focus on the theme of discovery learning. Curious how teachers around the world are helping their students communicate with distant learners? Look for stories on the theme of making global connections. Each new series will feature teachers from varied grade levels and subject areas. Technologies will range widely, too, from handhelds to digital music labs to classroom animation studios.

What's new and exciting in the world of teaching and learning? Find out by visiting *An Innovation Odyssey*, www.intel.com/education/odyssey.

***An Innovation Odyssey* delivers a dose of inspiration everyday by showcasing teachers who use technology to enhance student learning. Now moving into its third year, you can look forward to seeing more great ideas, with stories sorted into themes that appeal across subject areas and grade levels.**

Elementary and Secondary Education

Top High School Students Unite for Summer Research

The Research Science Institute

Do you know a talented young scientist or mathematician?

Jamie Rubin spent the summer between her junior and senior year attending the Research Science Institute (RSI), then went on to become a U.S.$100,000 scholarship winner of the Intel Science Talent Search. The RSI is an intense summer program where some of the most talented high school students from the U.S. and around the world come together to do cutting edge mathematics and science. Students conduct research projects under the guidance of mentors from the Massachusetts Institute of Technology (M.I.T.) and surrounding institutions while living on the M.I.T. campus. Students describe their participation in the RSI program as a "transforming experience."

Since 1984, the program has been held at M.I.T. However, beginning in 2004 the program will expand to include a program at the California Institute of Technology from June 27 to August 7. The M.I.T. program will take place from June 20 to July 31. Admission to the Research Science Institute is very competitive and applications are due February 1, 2004. Participation in RSI is free of charge. (Students are responsible for transportation.) To learn more about this exciting program for young scientists and mathematicians visit www.cee.org/rsi*.

Higher Education

Connecting With China

New Networking Curriculum Introduced Around the Globe

At a curriculum development workshop in Beijing in August, Intel and Purdue University's Douglas Comer unveiled the new networking and network processor curriculum and presented the first textbook on the subject to workshop attendees.

Dr. Doug Comer reviews the networking and network processor curriculum with university faculty.

Curriculum materials, based on Comer's college textbook, *Network System Design Using Network Processors*, cover the basics of computer networking, including how information is broken into packets and forwarded across the Internet, as well as the "how-to" of building routers using network processors. It also incorporates designs for laboratory experiments to be conducted by students.

Materials are divided into the following sections:

- Course Material (lessons for use in a networking class)
- Labs (experiments for use in the class)
- Setup (instructions for setting up the environment)
- Resources (recommended books)
- Additional Information (links for help, mailing lists, and general IXP-related information)

These materials, including the new textbook, were the result of collaboration between Intel and the Purdue University professor over the past two years. Hugh Boyd, university relations manager for Intel, says he and Rob Ibieta, manager of the Intel® Internet Exchange Architecture (IXA) University Program, combined forces and funds to make the project happen. They agreed that Comer was the obvious choice for key developer. "Dr. Comer is viewed as an international expert on networking," explains Boyd, "and had the top-selling textbook."

"I was very honored," says Comer, "when Intel asked me to consider writing a textbook for a network processor course. They told me the selection was made on the basis of my previous books."

Intel provided equipment for the Purdue lab and supplied a grant that allowed Comer and his team of graduate students to delve into the time-consuming task of conducting research and writing programs. In developing the curriculum and writing the textbook, Comer says he also drew on his years of experience teaching a series of courses on network processors at both the graduate and undergraduate levels.

University faculty and international experts on networking attend Intel's third Internet Exchange Architecture workshop in Beijing.

Of the final curriculum, Boyd says, "Doug provided 90 percent of the content. The balance came from Intel and a small part from Portland State University," located in Oregon.

At the China workshop, Comer delivered the keynote speech on network processors. "Although some electrical engineering courses will focus on how to design the network processor itself, computer science should focus on [how to use] network processors." He adds, "The talk described the organization and content for both graduate and undergraduate courses, and the importance of lab facilities to support each course."

Comer also delivered a speech at Tsing Hua University, "the number one school in China," where he gave a general overview of network processor technology.

Twenty-eight faculty members from 13 universities and six "international experts" attended the third Internet Exchange Architecture workshop in Beijing, reports Intel's Jeffry Cao of Intel, and both the curriculum and Comer's speech were "warmly welcomed" with high feedback scores.

"The people I met in China are incredibly enthusiastic," Comer says. "They want to learn, and they see high technology as a way for China to move to the forefront. I met professors from leading universities who were excited about new technologies and eager to learn how to integrate them into a networking curriculum."

Comer says several professors told him they especially liked one of the points he made in his speech, when he discussed the importance of lab work in the classroom. "A problem arises because students begin the course with no knowledge of network processors," he explains, "so the question becomes: 'Must we postpone all lab work until late in the course after students have learned all the basics?' My answer: 'No, we can build a simplified application program interface (API) that allows students to start programming on day one.' Of course, the simplified API hides many of the low-level details, which means early labs focus students on high-level algorithms such as Ethernet bridging. Later in the course, as students learn more about network processors, we take away the simplified API and require them to write the low-level pieces."

The curriculum also was introduced in Russia in October, and there are plans to introduce it worldwide in the coming months. The open source curriculum is being delivered via CD to interested schools in the Intel Worldwide Higher Education program. In the future, Boyd says, the content may be available on a publicly accessible Web site.

The Networking and Network Processor Curriculum project helps Intel meet its goal of accelerating the advancement of curricula to meet rapid technology advances, and is one of many ways that Intel supports higher education initiatives throughout China and the world.

Higher Education

Competition Rewards Innovative Thinking

Intel Student Research Competition Names Finalists

Nineteen finalists have been named in this year's Intel Student Research Contest (ISRC), a contest that challenges undergraduates in science and engineering disciplines to explore the frontiers of computing.

To make the cut, undergrads from universities across the country were invited to submit proposals for promising research projects. "This year's projects," says Kimberly Sills, Intel university relations manager, "tended to focus in two general areas: improving semiconductor technology and improving the user interface."

Stanford University student Eric Yieh's project, for example, investigates how to better control and manipulate emissions from single-wall carbon nanotubes to realize new electron beam applications. On the other end of the spectrum, Purdue University student Elian Haliman's project focuses on the end user, examining the capabilities of user recognition in the area of pervasive or location-aware computing.

Students chosen as finalists in the competition receive up to U.S.$2,000, based on budgets submitted with proposals, to conduct project research. On March 12, 2004, the finalists will assemble at an Intel site in

"The annual competition is one of the many ways Intel supports the use of cutting-edge technology in higher education, promotes research in emerging technology areas, and develops future engineers and computer scientists to support tomorrow's technology."

Hillsboro, Oregon. First-, second-, and third-place winners will receive cash awards of U.S.$5,000, U.S.$3,000, and U.S.$2,000, respectively.

For more information on the Intel Student Research Contest, visit www.intel.com/research/awards. The annual competition is one of the many ways Intel supports the use of cutting-edge technology in higher education, promotes research in emerging technology areas, and develops future engineers and computer scientists to support tomorrow's technology.

Finalists of this year's competition include:

- Abhinav Agrawal, *Princeton University*
- Kunal Bagga, *University of Illinois*
- Nick Chiang, *California Institute of Technology*
- Patrick Chiu, *University of Florida*
- Wei Lien Dang, *California Institute of Technology*
- Jonathan Foley, *University of California at Berkeley*
- Saad Godil, *University of Texas at Austin*
- Elian Haliman, *Purdue University*
- Ankur Kalra, *Georgia Institute of Technology*
- Sam Larson, *University of Washington*
- Eugene Lee, *Cornell University*
- Blake Nickles, *University of Michigan*
- Sara Parker, *Cornell University*
- David Parkinson, *Northwestern University*
- Priam Pillai, *University of California at Berkeley*
- Nick Rudawski, *University of Michigan*
- Nicole Staskiewicz, *University of Florida*
- Dustin Wright, *University of Minnesota*
- Eric Yieh, *Stanford University*

Higher Education

Celebrating Success in Costa Rica

Intel and Higher Education Leaders Collaborate to Enhance Curriculum

A celebration marking five years of a successful strategic relationship between Intel Costa Rica and the Institute of Technology of Costa Rica drew more than 350 people, including leaders from industry, government, and higher education.

"This was part of a continuous process to strengthen and enhance the relations between Intel and our focus universities," explains Randall Ramirez Lopez, university relations manager for Intel in Costa Rica.

Intel collaborates with the University of Costa Rica and the Institute of Technology of Costa Rica to help strengthen the engineering curriculum in electronics, electro-mechanics, computer science, and material sciences. Intel engineers provide technical lectures to the engineering students, and work with faculty to mold curriculum to cover new skill requirements of the labor market.

"This was part of a continuous process to strengthen and enhance the relations between Intel and our focus universities," explains Randall Ramirez Lopez, university relations manager for Intel in Costa Rica."

Intel engineering education efforts in Costa Rica include, among other things, its curriculum development collaboration and high school science fairs.

Working together, higher education faculty and Intel engineers have been helping a new generation of students take advantage of the opportunities that globalization offers. For example, Intel supports curriculum development with faculty training and donation of state-of-the-art technology for student laboratories and research needs. Students use the equipment in automation, digital electronics, microprocessor design, networking systems, and software development courses. Technicians and engineering students work with Intel engineers to help solve real industry problems as part of a special internship program for junior and senior students. "This is leading to better preparation of future professionals in the Costa Rican technological field," says Ramirez Lopez.

Community Education

Young Voices From Latin America

Clubhouses Unite to Launch Virtual Magazine

When the Intel Computer Clubhouse opened in Mexico City in October 2002, one of its first projects was to create a newspaper. *El Palacio de la Informacion* proved so popular with members that it prompted a few to set their sights on a loftier goal: joining forces with other Clubhouses in the region to create an online magazine.

This goal became more accessible when coordinators from all six Latin American Clubhouses met at a workshop in Costa Rica in May 2003 and elected to participate in the project. Participating Computer Clubhouses include: Dom Bosco from Sao Paulo, Brazil; Museo de los Ninos and Suba Compartir, both from Bogota, Colombia; CEDES Computer Clubhouse from San Jose, Costa Rica; Planetario from Guadalajara, Mexico; and Palacio Postal Mexico from Mexico City, Mexico.

Adán, the Mexico City teen who founded his Clubhouse's newspaper, was appointed as magazine editor for the first year and put in charge of organizing key members from each location for the project.

Adán, "Latinclub" newsmagazine editor and Intel Computer Clubhouse member, at Palacio Postal México.

"The beginning was chaotic," says Luis Lach, coordinator of the Mexico City Clubhouse, explaining the difficulties of organizing so many youngsters in so many locations at one time. The first exchanges took place via a series of online chats. "The first chat was very difficult, because the kids didn't have a clear idea of how to work together," Lach says. "The problem grew until two kids from Guadalajara and Mexico City-yes, both from Mexico-started to argue. But Adán became a good leader. He solved the problem and, in the end, organized all the people."

In the next series of chats, members selected a name for the publication, Latinclub, and agreed on editorial content. Specific sections of the magazine would include Editorial, music, comics, stamp collecting, outstanding member of the month, Clubhouse projects, historical places in Latin America, technology, sexuality, my neighborhood, problems of society, and literature. Members from all of the participating Clubhouses were invited to submit stories.

For technical help, the students worked with Marco Monroy, a student from the Media Lab at M.I.T., who was working nearby with Fundacion Telmex in Mexico City. Monroy trained the students to use HDL, a software tool for uploading information to a server for display on a Web page.

Latinclub was officially launched on October 15, 2003, and "launch day" was celebrated at each Clubhouse. The premiere issue includes an impressive collection of student writing on topics ranging from how to spot valuable postage stamps to political issues surrounding marijuana usage.

Lach observes that the first issue may be a bit serious in terms of content. In the next issue, he says, members hope to incorporate more humor and design. "But," he stresses, "the most important thing is that we decided to create a magazine, we set a deadline, and the magazine is currently on the Web."

In the process, students have learned valuable technical and life skills.

"We are seeing, possibly," Lach says, "the beginning of future journalists in our countries. I think a few members are very excited with the idea of sharing between countries, and this could be the beginning of more ambitious plans in life."

The Intel Computer Clubhouse Network is an after-school technology learning program that enables youth in underserved communities to acquire tools necessary for personal and professional success. Clubhouses provide safe environments where students have access to technology equipment and to supportive adult mentors to guide them.

Community Education

Opening Doors

Ramallah Clubhouse Offers Palestinian Youth New Opportunities

When the Intel Computer Clubhouse at Ramallah opened its doors in July 2003, it gave local Palestinian youth not only a safe place to gather but also the chance to develop important work and life skills.

Located in Um-Al-Sharayet, the Computer Clubhouse serves young people from the city of Ramallah, as well as those from three neighboring refugee camps. The first of its kind in Palestine and in the whole Arab Middle East, the club gives youth, ages 8-18, access to cutting-edge technologies, along with the support of 12 adult mentors. In addition to helping youth develop technology skills, the Clubhouse offers a safe place for them to socialize and to experiment with creative expression.

Technology at the Clubhouse includes 14 computers, a variety of graphics software, two digital video workstations, a professional-quality recording studio, and other multimedia equipment.

For youth who previously had little, if any, access to technology, the Clubhouse has been a big hit.

"We have received more than 150 membership forms from young boys and girls," says clubhouse coordinator Raed Yacoub, and that was before the grand opening.

Mohammad Ghassan Al-Dasht is one of the new members. The 16-year-old first came to the Clubhouse in August when he met mentor Amjad Khaleel, and has been a regular since. Mohammad's interest lies primarily in graphics, particularly animation and design programs, reports Yacoub. The student has created graphic designs for the

"The first of its kind in Palestine and in the whole Arab Middle East, the club gives youth access to cutting-edge technologies to help develop their skills and the Clubhouse offers a safe place for them to socialize and to experiment with creative expression."

Clubhouse logo and a Clubhouse calendar. One of the young man's creations was selected to appear on the opening page of a Web site for Clubhouse mentors and staff, Yacoub says. "That was great for him and also for all in the Clubhouse."

The Intel Computer Clubhouse at Ramallah is the result of the combined efforts of Intel, the International Youth Foundation (IYF), and the Welfare Association, a nonprofit Palestinian relief and development organization.

"As a nonprofit foundation operating in nearly 60 countries and territories around the world," says Patricia Langan, International Youth Foundation regional director for Africa and the Middle East, "IYF recognizes the critical role multi-sector partnerships play in maximizing the impact of programs on young people's lives. What is so exciting about the Ramallah Computer Clubhouse is not only that it is the first Clubhouse in the Arab Middle East, but also that there is such a high level of commitment from Intel, the Welfare Association, and the local community. In a region where most young people don't have access to educational technology, or have a safe place to explore ideas and express themselves, the Clubhouse offers thousands of youth hope and a real chance for a better future."

To learn more about Intel Computer Clubhouse, visit www.intel.com/education/icc.