

# Intel<sup>®</sup> Innovation in Education Initiative



**Inspiring  
Innovation in  
Education  
for the 21st  
Century**





**“The same spirit of innovation that drives the global economy can also achieve positive results in the classroom. Intel continues to create and support education programs, in collaboration with governments, educators, and students, to inspire innovation in teaching and learning.”**

**Craig R. Barrett**  
**Chairman, Intel Corporation**

# Intel's Commitment to Education

**Inspiring innovation for the knowledge economy.** Today's students enter a global knowledge economy where they will use technology to analyze information, collaborate with peers, and present ideas. Developing talent in mathematics, science, and engineering is also essential, since these fundamental disciplines drive the high-tech advances which spur the world economy. Fostering these critical skills to help students succeed in the 21st century is at the heart of Intel's commitment to education.

## **Sustained commitment, ongoing collaboration**

Intel's involvement in education is fueled by our mission to improve not only our business and industry, but the future of our young people. We see our passion for education much the same way we see our commitment to research and development: an investment in the future. That's why we devote more than \$100 million annually in support of innovative teaching practices that promote deeper learning, inspire future technologists, and foster learning beyond the classroom.



# Initiative Overview

**Supporting global educators.** The Intel® Innovation in Education initiative is a sustained commitment – in collaboration with government and educators worldwide – to drive education improvement for the knowledge economy. To do this, we offer programs and resources targeted at elementary and secondary education, community education, and higher education.

## Global goals, local programs

The initiative strives to improve teaching and learning through the effective use of technology, and to develop a diverse pipeline of talent in mathematics, science, and engineering.

However, we recognize that each country has differing educational and cultural needs. Therefore, while Intel Innovation in Education programs and resources are available in more than 50 countries, they are designed to be localized to suit the unique identity of each community. This includes adaptation of curriculum as well as customization of programs. We also firmly believe that diversity enriches learning environments and strengthens communities, so our programs emphasize outreach to females, underrepresented youth, and other minorities.

**“Education should incorporate technology not as an end in itself but as a means to promote creativity, empowerment, and equality and produce efficient learners and problem solvers. Intel is a key partner in helping us meet these objectives.”**

**Ms. Zubaida Jalal,  
Federal Minister, Ministry of Education,  
Government of Pakistan**





# Elementary and Secondary Education

**Improving teaching and learning worldwide.** The Intel® Innovation in Education initiative provides free programs and resources to elementary and secondary educators that support effective technology integration, recognize educational excellence, and reward student achievement in mathematics and science.

## Intel® Teach to the Future

Intel® Teach to the Future is a worldwide professional development program that helps teachers integrate technology into the curriculum. Using a student-centered pedagogical approach, the program helps teachers engage students in active learning while developing their 21st century skills. Over 2.5 million teachers in more than 30 countries have participated in the program. Intel provides all training and curriculum materials free of charge. Following is a sampling of the suite of offerings included in the program.

### Essentials Course

This 40-hour, hands-on, face-to-face course gives teachers a thorough grounding in both technology integration and inquiry-based learning methods. In it, teachers learn to ask Curriculum-Framing Questions and use technology to create unit plans that meet state and national standards.

### Workshop on Teaching Thinking with Technology

In this 24 to 40-hour workshop, teachers learn to guide students through higher-order thinking skills. Free, online tools from the Innovation in Education Web site cover topics that include rank ordering, cause and effect, and argumentation using supporting evidence.

### Leadership Forum

In this four-hour face-to-face, interactive forum, education leaders learn to enhance teacher effectiveness and student achievement by supporting the integration of technology. Participants analyze leadership behaviors and relevant research to develop action plans for their own schools.

### Improving Classroom Practice

The Intel Teach to the Future Essentials Course is showing impact. In an evaluation that examined international trends, key findings indicate<sup>1</sup>:

- 82 percent of teachers report implementing a new technology-integrated lesson or activity since the training
- Nearly all teachers (96 percent) believed that the student-centered, project based curricula was somewhat or very relevant to their teaching objectives
- A majority of teachers (93 percent) agreed or strongly agreed that students were highly motivated and engaged by the lessons teachers created through the training.

Martin, Light, Kanaya, Dial & McMillan Culp, 2004

<sup>1</sup> Results are from the Education Development Center (EDC) evaluation of Intel® Teach for the Future participants from 2003-2004. Data are drawn from 11 countries participating in the survey. Evaluation reports are available at [www.intel.com/education/teach](http://www.intel.com/education/teach).





## Classroom Tools and Resources

The Intel® Innovation in Education Web site contains tools and resources that support teachers involved in Intel® Teach to the Future. The site also offers a wealth of free content, resources and tools for educators with Internet access.

### Unit and Project Plans

These teacher-tested unit and project plans not only provide fresh ideas for incorporating technology into the curricula, they contain additional resources to help educators develop exemplary, project-based plans of their own.

### Thinking Tools

This suite of free online tools was developed in collaboration with cognitive scientists and encourages students to apply higher-order thinking skills. Teachers can set up class projects on Intel servers. This workspace is accessible at any time, from any computer with a persistent connection to the Internet.

The thinking tools include *Visual Ranking*, for ranking and comparing lists; *Seeing Reason*, for investigating cause-and-effect relationships; and *Showing Evidence*, for building arguments based on evidence.

### The Journey Inside<sup>SM</sup>

Learn about the technologies, processes and methods that make computers – and the Internet – work, including circuits and switches, digital information, microprocessors and more.



**“I’ve learned that you  
can do scientific research  
anywhere, with whatever  
resources are  
available to you.”**

**Uwe Treske  
Germany**

## **Recognition and Awards**

To support and nurture the next generation of innovators, Intel proudly sponsors several recognition programs designed to highlight achievement in science, mathematics, engineering, and school-wide excellence.

### **Intel International Science and Engineering Fair**

This competition is the world’s largest international science fair representing all life sciences for students in grades 9-12. More than 1,400 students from 40+ countries win the chance to compete for more than US\$3 million in scholarships and prizes in 14 scientific categories, as well as a team project category.

### **Intel Science Talent Search**

For more than 60 years, this competition—often referred to as the “junior Nobel Prize”—has provided an incentive and an arena for United States high school seniors to complete an original research project and have it recognized by a national jury of highly regarded professional scientists.

### **Intel and Scholastic Schools of Distinction Awards**

This awards program recognizes outstanding K-12 schools in the United States. The awards highlight successes in a variety of categories including innovative use of technology, the benefits of strong teamwork, community involvement, academic excellence and superior classroom teaching practices.





# Community Education for Youth

**Learning extends beyond classroom walls.** Intel's community education programs bring young people together right in their own communities for rich, varied, and compelling educational experiences.

## Intel® Learn Program

In this project-based program, trained community center staff guide learners ages 8-16 through a formal curriculum designed to teach technological literacy, problem solving, and collaboration. Deployed in areas with little access to technology, the Intel® Learn Program was created in collaboration with government and non-governmental organizations to meet the unique needs of emerging markets. At the heart of the program are collaborative projects centered around issues relevant to the learners' own lives and communities.

## Intel Computer Clubhouse Network

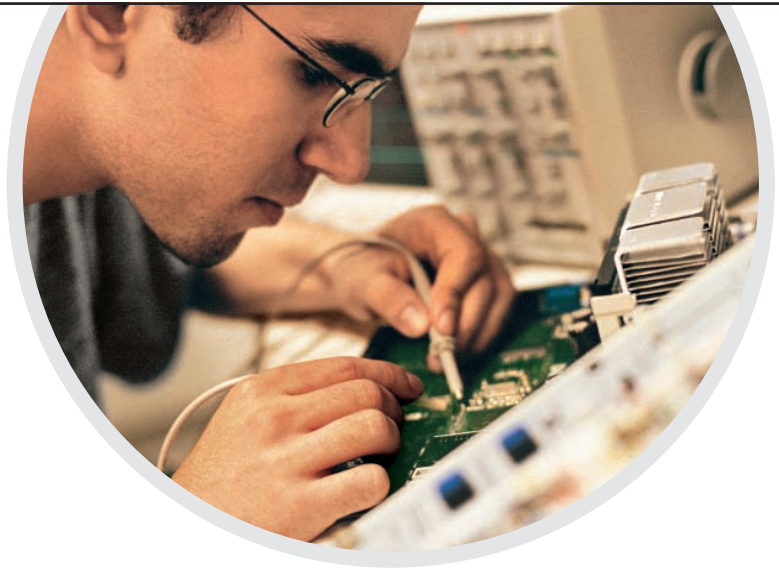
The Intel Computer Clubhouse Network is an award-winning after-school program that provides a safe, structured environment where kids in underserved communities can become self-confident and motivated learners. Based on a learning model created by the Boston Museum of Science and MIT Media Labs, the Network consists of 100 facilities operating in 19 countries, and reaches more than 50,000 learners. With the guidance of mentors, Clubhouse youth use leading-edge technology tools to design and complete complex projects that reflect their personal interests and passions.

**"I applaud creative projects such as the Intel Computer Clubhouse Network that combine education and the hands-on use of technology."**

**Congressman David Wu  
United States**







# Higher Education

**Advancing technology innovation and developing technical talent.** The Intel® Higher Education program focuses on advancing innovation in key areas of technology, as well as developing world-class technical talent for a global, knowledge-based economy. To achieve this, Intel collaborates with over 100 top universities in 30 countries worldwide to expand university curricula, engage in focused research, and encourage student participation in research.

## Curriculum Forum

Developing world-class curricula to teach the engineers of tomorrow requires a breadth of knowledge and depth of skill at every university. To assist institutions in meeting this challenge, the Intel Higher Education Curriculum Forum provides sample curriculum modules from leading institutions worldwide. Offered for open review, these tools may be used by departments and faculty to review or expand their own curricular offerings in technical areas such as VLSI, parallel computer architecture, microelectronic fabrication, embedded computing, wireless computing, and technology entrepreneurship.

## Student Opportunities

Our student support programs assist students in engineering, computer science, and manufacturing programs worldwide. Students can support their technical research and careers through a variety of programs sponsored by Intel: Ph.D. and master's fellowships, undergraduate scholarships, student research competitions, and resources on internship and employment opportunities at Intel.

## Research Programs

Research is the key to developing next-generation technologies. Our efforts focus on semiconductor technology, nanotechnology, high-volume manufacturing, microarchitecture and circuits, computing platforms, software, networking and communications, and related areas of research. Intel sponsors more than 250 engagements in these key research areas in collaboration with leading universities around the world.

# Intel in Education

**To date, Intel has invested approximately \$1 billion in our education programs. We collaborate with leading institutions, organizations, and educators in every community in which Intel has a presence, and strive to be a trusted advisor for educators and governments around the world. We look forward to providing continued support with our programs to ensure a robust educational system that prepares all young people to thrive in the knowledge economy.**

## About Intel

For 35 years, Intel Corporation has developed technology enabling the computer and Internet revolution that has changed the world. Founded in 1968 to build semiconductor memory products, Intel introduced the world's first microprocessor in 1971. Today, Intel supplies the computing and communications industries with chips, boards, systems, and software building blocks that are the "ingredients" of computers, servers, and networking and communications products. These products are used by industry members to create advanced

computing and communications systems. Intel's mission is to do a great job for our customers, employees, and stockholders by being the preeminent building block supplier to the worldwide digital economy.

In addition to its commitment to product innovation, Intel is a leader and contributing member in our global communities, seeking to deliver long-term shareholder value, and to inspire people through educational initiatives and outreach efforts that improve people's lives. **Learn more at [www.intel.com](http://www.intel.com).**



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