

Creating Magic in Classrooms

Intel® Teach Program in India

“Computers are not magic,
teachers are.”

Dr Craig Barrett
Chairman, Intel Corporation



Foreword



It has been ten years since we launched the Intel® Education Initiative in India. As part of a sustained global commitment in which Intel invests USD 100 million annually across 50 countries, the Intel Education Initiative aims to prepare students across India with the skills required to thrive in the knowledge economy. To this end, Intel has been working with government and other decision making bodies at the central, state and local levels to improve teaching and learning through the effective use of technology, in both formal and informal educational environments.

While the Intel® Teach Program offers professional development for teachers so that they can cultivate innovative learners and critical thinkers by integrating technology effectively in the classroom, the Intel® Learn Program delivers engaging after-school and community-based education programs to promote technology literacy and 21st century skills among underserved youth aged 8–16 age group.

It is only due to the dedicated efforts of the teachers trained under the programs that the real benefit of these Programs have reached out to the students, and even filtered out into their communities. These teachers are now the flag bearers of the Program, and we attempted to capture in this document some of the magic they have wielded upon their students and environment. They are inspiring educationists who have made a lasting impression upon the education landscape in India, and continue to tread uncharted territories to explore new challenges. Unfortunately, we can profile only a few of the teachers because of space constraints.

This compilation salutes the efforts of these teachers in inspiring our future citizens, the students of today who will tomorrow ensure a vibrant and confident India.

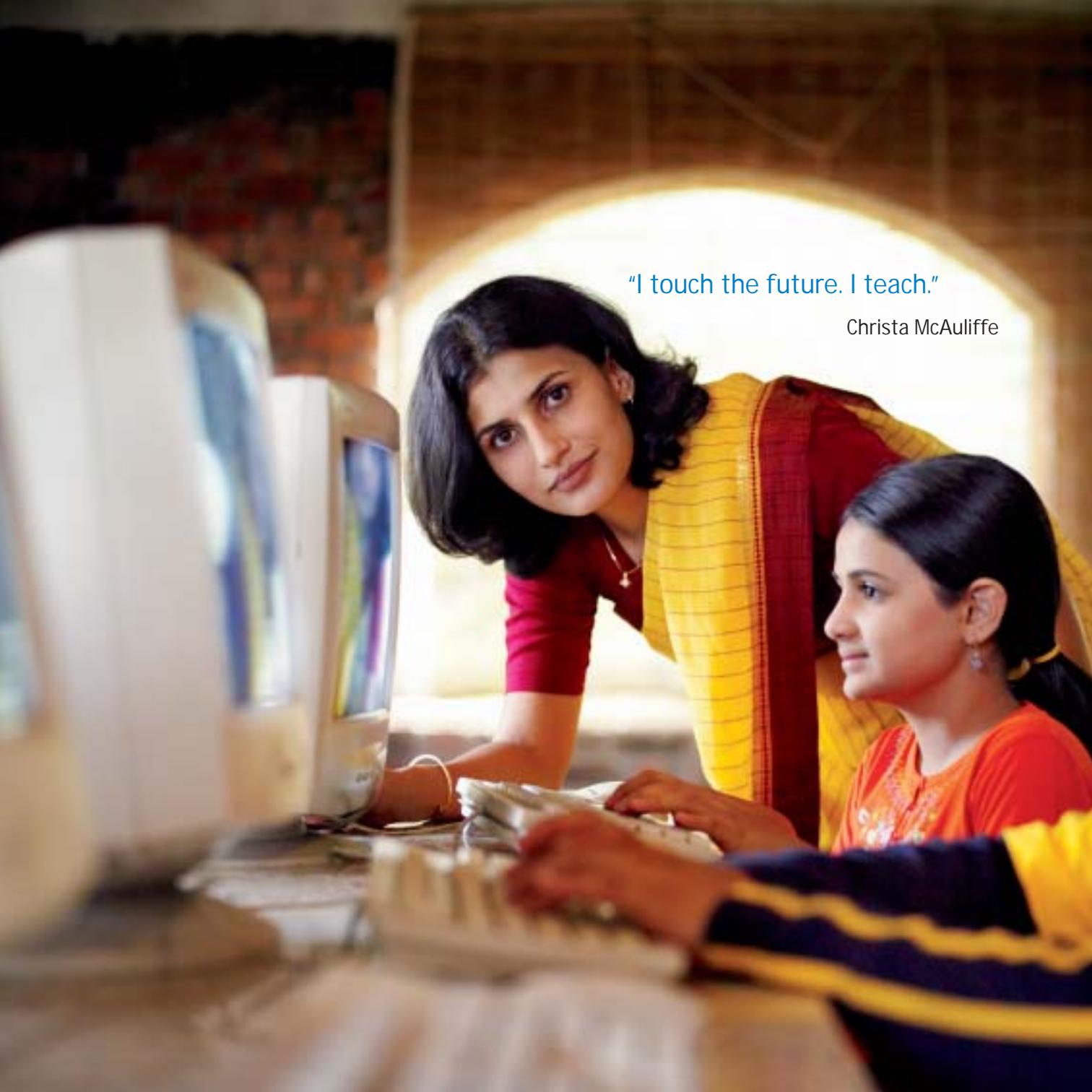
A handwritten signature in blue ink, appearing to read 'Praveen Vishakantaiah', with a horizontal line underneath.

Praveen Vishakantaiah
President, Intel Technology India Pvt Ltd



Contents

Intel® Teach Program in India	7
Program Portfolio	8
K-12 Teaching Tools	10
Intel Teach Milestones in India	12
Creating Magic in Classrooms	
Nafisa Bhinderwala <i>Children's Academy, Ashanagar, Mumbai</i>	14
Arunasree Ganti <i>Bharatiya Vidya Bhavan Public School, Jubilee Hills, Hyderabad</i>	15
Jagdamba Prasad Dobhal <i>Government Inter College, Dudli, Dehradun</i>	16
M U Paily <i>Regional Institute of Education, Bhopal</i>	17
Arundhoti Roy Choudhury <i>Kendriya Vidyalaya, Ballygunge, Kolkata</i>	18
Shaitan Singh Rathore <i>Seth Meghraj Govt Adarsh U P School, Pali</i>	19
B Sharada Mani <i>Panchayat Union Middle School, Odakkadu, Nilgiris</i>	20
Sonam Thakur <i>Government Senior Secondary School, Keylong</i>	21
Ranjan Chutia <i>Nakachari Higher Secondary School, Jorhat</i>	22



"I touch the future. I teach."

Christa McAuliffe



Intel® Teach Program in India

The Intel® Teach Program offers teachers proven professional development supporting 21st century skills. The program has been driving systematic change in teaching and learning since 1999. Intel has trained more than 5 million teachers in over 40 countries, and will train 8 million more by 2011.

In India, the Intel Teach Program was launched on February 28, 2000 in the cities of Delhi, Bangalore and Mumbai, and expanded to cover other large towns across the country over the next two years.

To begin with, the focus was on training in-service teachers in private schools; from late 2000, however, Intel engaged with the Kendriya Vidyalaya Sangathan (KVS), the Navodaya Vidyalaya Samiti (NVS), and the Education Departments in states and Union Territories to extend Intel Teach training to government school teachers. Today, the Intel Teach In-service Program reaches teachers in government schools across 19 States and Union Territories in the country.

In 2002, Intel introduced the Intel Teach Pre-service Curriculum, which empowers teacher educators to train student teachers with skills required to integrate technology supported inquiry based learning into their future classrooms. The Intel Teach Pre-service Program works in close collaboration with 54 Universities and apex educational bodies across India.

As of December 2008, a total of 1,021,391 teachers, teacher educators and student teachers have been trained under the Intel Teach Program in India. Of these, 537,794 are in-service teachers, while 483,597 have undergone training under the pre-service curriculum.

The success of the Intel Teach Program in India owes a lot to the support received from central and state education bodies—like KVS, NVS, state education boards, State Councils for Education, Research and Training (SCERTs), National Council for Teacher Education (NCTE), and universities—for teacher and educationist reforms for technology supported inquiry based learning in the schools and pre-service institutions.

Program Portfolio

Professional Development Offerings



Whether a country has excellent Internet connectivity or very limited connectivity, the enhanced Intel® Teach Program portfolio has offerings designed to enable teachers to introduce, expand, and support 21st century learning with project-based approaches in the classroom.

For Classroom Teachers

Course Name	Description
Getting Started Course	Introduction to classroom software productivity tools and student-centred approaches to learning
Essentials Course	Face-to-face training on how to integrate technology into existing classroom curricula to promote student learning
Essentials Online Course	Training on the same skills as the Essentials Course, through a blend of face-to-face and online training
Thinking with Technology Course	Training on effective technology integration skills using online thinking tools to enhance students' higher-order thinking



Course Name	Description
Advanced Online Course	Training that enables teachers to build communities to advance the integration of technology and 21st century learning through a blend of face-to-face and online training
Skills for Success Course	Training on a student curriculum that develops digital literacy, critical thinking, problem solving, and collaboration skills

For ICT Teachers

Course Name	Description
Leadership	Interactive forum focused on leadership in promoting, supporting, and implementing effective technology integration in schools



K-12 Teaching Tools

Thinking Tools

“With the help of technology, teachers will be leaders in the transformation of education around the world.”

Dr Craig R Barrett
Chairman, Intel Corporation

The Intel® Teach Program offers free tools and resources for educators that support collaborative student-centred learning. Online thinking tools are active learning places where students engage in robust discussions, pursue investigations, analyse complex information, and solve problems.

Visual Ranking Tool

Making a list is usually straightforward and requires little thought. But when it comes to ordering and prioritising items in that list, higher-level skills of analysis and evaluation are put to use. The Visual Ranking Tool brings focus to the thinking behind making ordered lists. Students identify and refine criteria as they assign order or ranking to a list. They must explain their reasoning and can compare their work with each other in a visual diagram. This tool supports activities where students need to organise ideas, debate differences, and reach consensus.

The Visual Ranking Tool and related resources are available for free, from any computer that is connected to the Internet. Students may work on their lists at home or at school, and can even compare their ideas with students located in distant classrooms.

Seeing Reason Tool

Analyzing cause-and-effect relationships is important to understanding complex systems. With the Seeing Reason Tool, students create visual maps of the factors and relationships in a cause-and-effect investigation. These maps make thinking visible, and promote collaboration as students work together to refine their understanding.

The seeing Reason Tool and related resources are available for free, from any computer that is connected to the Internet. Students may work on their lists at home or at school, and can even compare their ideas with students located in distant classrooms.



Productivity Tools

Showing Evidence Tool

Anyone can have an opinion, but backing it up with well-articulated evidence requires careful thinking. The Showing Evidence Tool helps students learn how to construct well-reasoned arguments and prove their case with credible evidence. The tool provides a visual framework to make claims, identify evidence, evaluate the quality of that evidence, explain how the evidence supports or weakens claims, and reach conclusions based on the evidence. This thinking tool supports activities where students debate differences, make and defend decisions, and analyse conflicting information.

The Showing Evidence Tool and related resources are available for free, from any computer that is connected to the Internet. Students may work on their claims and evidence at home or at school, and can be paired with another team to review their ideas.

Assessing Projects

When assessment drives instruction, students learn more and become more confident, self-directed learners. The Assessing Projects tool helps teachers create assessments that address 21st century skills and provides strategies to make assessment an integral part of their teaching and their students' learning.

Help Guide

Where would you look if you wanted to learn how to spell a word or to find information for a report? Dictionaries and encyclopedias are two types of resources that can be used for fast and easy reference. What if you wanted to learn how to add sound to a multimedia presentation, to add a background to your Web page, or to create a graphing grid? The Intel® Education Help Guide provides handy step-by-step instructions for common applications and hundreds of technical skills for commonly used software applications right as you work.

Intel® Teach Program in India

Milestones

2000

Intel® Teach Program
launched: February 28

1st teacher trained:
Nafisa Bhinderwala



2001

Intel Awards for the
Best Integration of
Technology in
Education instituted

Pre-Service Curriculum
introduced

Master Trainer Clubs
formed

Technology in
Education Awards
for Government
school teachers
introduced

2002

Principals' Leadership
Technology Forum
launched

100,000th teacher:
S G Mahapatra



2003

Technology in
Education Awards
for Government
school teachers
introduced

200,000th teacher:
Manjusha Rawat



Teachers Trained: Cumulative Total



New Government Relationships

2004

Intel Teach Pre-service training expanded to 30 universities

300,000th teacher:
Gopinath Kalbagh



2005

First National Pre-Service Meet in New Delhi

500,000th teacher:
Neha Dua



400,000th teacher:
Dr N Vani



2006

Skills for Success launched in 507 Jawahar Navodaya Vidyalayas across all states

Thinking with Technology curriculum introduced

600,000th teacher:
Amit Mali



2007

Essentials Online and Getting Started courses launched

800,000th teacher:
Sonam Thakur



700,000th teacher:
Simmi Kher



2008

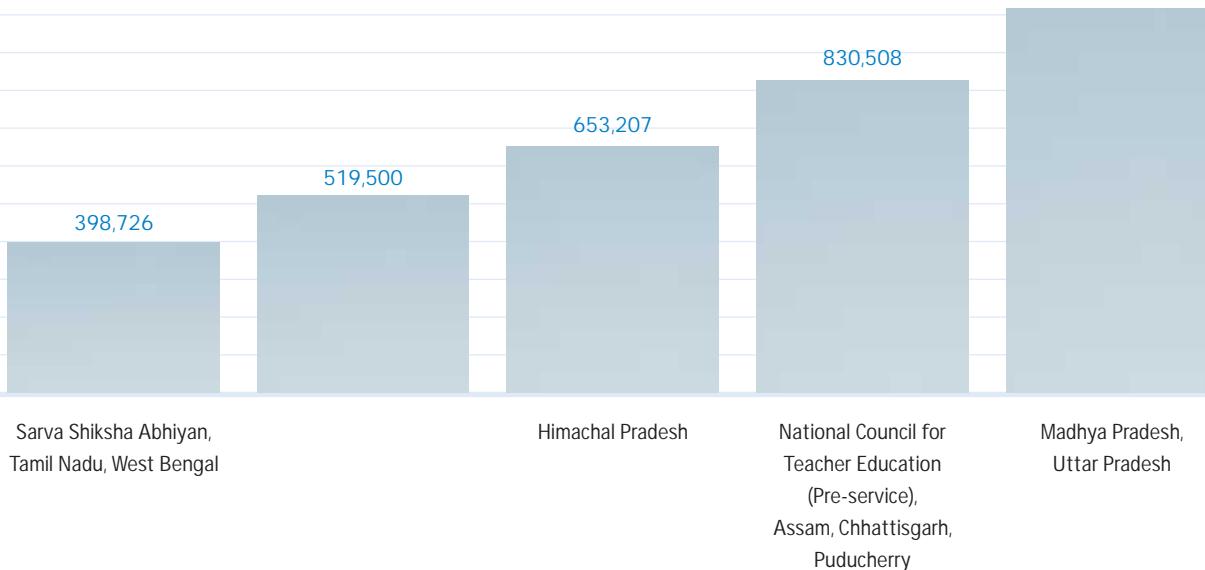
1,000,000th teacher:
Chitra Dekate



900,000th teacher:
Geetarani Sarmah



1,021,391



Nafisa Bhinderwala

Children's Academy, Ashanagar, Mumbai



“All this was possible because Intel had sown the seed of knowledge within me, which has now taken root and grown into a sturdy tree, with its branches sheltering children.”

After twenty five years as an educator, Nafisa Bhinderwala looks back with pride on her remarkable journey. Back in 1999, Nafisa and two of her colleagues at Children's Academy, Malad, in Mumbai, were among the first batch of teachers to be trained under the Intel® Teach Program in India, and she later qualified as a Master Trainer under the Program as well.

A once nervous teacher who feared the computer and could not even “save” a file, Nafisa metamorphosed into a confident practitioner of technology aided learning. Her training under Intel Teach not only brought her close to technology, but also changed her perception towards education and teaching methodologies.

She was instrumental in gradually bringing about 100 per cent computer literacy in her school. She constantly encouraged her colleagues to participate in technology-based, education-related competitions, which she felt would motivate them to use technology in their lessons. She took technology out of the classroom and conducted an AIDS Awareness programme for

Class 9 students. The doctors who were a part of this training session were very impressed by Nafisa's knowledge, as well as by her ability to use technology effectively.

Nafisa has won many accolades during her journey into the realms of technology. She was among the first recipients of the National Award for the Most Innovative Use of Computer Technology in Teaching when the Intel Awards for the Best Integration of Technology in Education were instituted in 2001. More recently, in March 2007, on International Women's Day, she was honoured by the Mumbai Police for her contributions to society in the field of academics; and she has been chosen as the Best Master Trainer under Intel Teach for the year 2008-2009.

Nafisa feels that teaching-learning should not be restricted to books and the curriculum, and each teacher must put in effort to explore fresh knowledge, since learning is a lifelong process. She puts this philosophy into effect, inspiring both students and teachers, at Children's Academy, Ashanagar, the Mumbai school where she is now the Headmistress.

Arunasree Ganti

Bharatiya Vidya Bhavan's Public School, Jubilee Hills, Hyderabad



“My success as an innovative teacher was possible because of the training given by Intel. My sincere and profound thanks to them.”

Arunasree Ganti, a teacher at the Bharatiya Vidya Bhavan's Public School, Jubilee Hills, Hyderabad, is a post graduate in mathematics from Osmania University. She has over 16 years of experience in teaching mathematics in middle and high school. An avid reader, she has also penned many essays, stories and poems in Telugu, many of which have been published in magazines.

It was only in October 2000, after her training under Intel® Teach, that she started integrating technology in her lessons. She introduced her students to multimedia in the classroom. The reception she received was “very overwhelming”, in her own words. Her fellow teachers and the principal marveled at the impact of her innovative teaching methods.

Arunasree encourages active and frequent interaction in the classroom, and this has had a profound effect upon the social, cognitive and academic development of her students. Her approach involves “positive interdependence”, individual accountability”, “equal participation” and “simultaneous

interaction”. Her students engage in various activities using multiple intelligences.

Her use of technology has made the teaching-learning process more interesting and challenging, kindling a remarkable interest in academics among her students. Even the underachievers started showing a marked improvement.

Her training under Intel Teach, helped her encourage a variety of learning styles in her students, who use higher order thinking skills in their daily lives. Today, her technology based projects are being used by other teachers in her school. She herself constantly updates her knowledge to address her students' needs.

Arunasree received the Certificate of Commendation for her project on Banking at the UNESCO ICT in Education Innovation Awards for 2007-2008, in Bangkok.

Arunasree credits Intel with playing a major role in her success story, which she feels has just begun.

Jagdamba Prasad Dobhal

Government Inter College, Dudhli, Dehradun



“Through Project Based Learning, my students have become confident, and I am sure they will have a better future. They now know why they are studying a particular topic in the class.”

Jagdamba Prasad Dobhal was constantly discussing new ways of teaching with his colleagues at the Government Inter College (GIC) at Nainbag in Dehradun. His Principal took note, and he was nominated for the Master Trainer's Course under the Intel® Teach Program in November 2002. Thus, a person hitherto untouched by technology found a tool for teaching innovatively. Soon, he also got involved in the planning and dissemination of technology based lessons in his school.

Undaunted by the lack of infrastructural support, he would access the Internet at a cyber café in his spare time. Once he started using project based learning approaches in his teaching, he saw a marked change in his students. Attendance improved within six months, and the results of over 90% of the students improved.

It was under his guidance that his school participated, for the first time, in the science fair conducted by the National Council of Education Research and Training (NCERT), with 12 students participating at the state level, of whom two were selected to participate in the national fair in 2004.

In recognition of his efforts, Jagdamba was named the State Winner in the teacher's category at the “Aarohan Contest 2004”, a joint contest conducted by the Government of Uttarakhand and Intel Teach.

In his next assignment, at GIC, Dudhli, he had to face new challenges. The new school was 40 km from Dehradun, with no transportation, electricity or connectivity, and limited infrastructure. But Jagdamba did not compromise on what he strongly believed in. He successfully convinced his principal about the benefits of using technology in education. A generator was installed, infrastructure was upgraded, and teachers in the school trained.

Jagdamba's students also address social issues, like river pollution and water and energy conservation, through a project based approach. In March 2008, they helped in fighting a real fire, for which they received a letter of appreciation from the Forest Department.

A socially conscious teacher, together with his students, has made his community a better place.

M U Paily

Regional Institute of Education, Bhopal



“What I like most about the Intel Teach Program is that it equips teachers to create content according to their local context and student needs.”

Dr M U Paily is a Reader at the Regional Institute of Education, Bhopal. Earlier, he was a lecturer at the G V M College of Education, Goa, which is where he got associated with the Intel® Teach Pre-Service Program.

He planned and coordinated the implementation of Intel Teach in an innovative manner at G V M College of Education. His model of implementation was highly appreciated by the educational community, and was instrumental in his college being adjudged a National Winner in the Institutional category at the Intel Awards for the Best Integration of Technology in 2004.

Dr Paily constantly strove to take his students forward in their teaching-learning processes, and introduced them to e-learning through the Moodle environment.

Recently, he was felicitated by UNESCO for his innovative approach to ICT integration, with a Certificate of Commendation at the UNESCO ICT in Education Innovation Awards for 2007-2008, in Bangkok.

Dr Paily says, “It has indeed been a great experience implementing the Intel Teach Pre-Service Program. It has given me the opportunity to help so many teachers and teacher educators learn the vital skill of integrating technology into education. What I appreciate most about the program is that it equips teachers to create their own content, according to their local conditions and student needs.”

Arundhoti Roy Choudhury

Kendriya Vidyalaya, Ballygunge, Kolkata



“The Intel training has empowered me a lot. I support the Intel framework of 50% technology and 50% pedagogy, as I feel technology without pedagogy will lead nowhere.”

Hailing from a family of teachers and educators, Arundhoti Roy Choudhury has been a teacher for the last 27 years. Since 1988, Arundhoti has been teaching at the Kendriya Vidyalaya (KV), Ballygunge, Kolkata, in the junior section. She is also a Resource Person for the In-service Training of KV teachers.

Arundhoti underwent the Intel® Teach training in 2001, and joined Pragati, the Master Trainer Club in Kolkata, where she plays a key role. She says, “I feel the Intel training has empowered me a lot. I could appreciate the benefits of technology aided learning only after undergoing the training.”

She considers technology a wonder tool. She has observed that the only classes children are particularly enthusiastic about—apart from games!—are those where they can use technology. These classes have a significant impact upon students, she feels.

Arundhoti has many significant achievements to her credit. She won the National Award for Teachers from the Government of India in 2007. Prior to that, she was a National Winner at the

Intel Awards for the Best Integration of Technology Award in 2005, and won the Kendriya Vidyalaya Sangathan's highest honour, the Incentive Award, in 2006. She also received the Scholastic Teacher's Day Honour from 2005 to 2007.

As a guest lecturer for Portuguese Language and Culture at Jadavpur University, Kolkata, she was involved in developing Portuguese Tutorials for the Department of Educational Technology at the University. She has authored two articles, *Shower of Thought* in 2005, and *Let Us Fly High* in 2006.

Technology has connected Arundhoti to the world. She has been in contact with many fora through the Internet. In July 2008, she received an invitation for presenting a paper at the 7th Intentional Peace Conference, Canada, after she sent her paper through the Internet.

A talented professional, Arundhoti has been able to scale new heights of success by developing her potential through the judicious use of technology.

Shaitan Singh Rathore

Seth Meghraj Tholia Government Adarsh Upper Primary School, Nimaj, Pali



“I was delighted at my students’ efforts. They even worked after school hours to ensure the successful completion of their project.”

Shaitan Singh Rathore, a post graduate in English and Personnel Management, served in the Indian Air Force as a Technical Sergeant for 18 years before he became a teacher in Pali, a small town in Rajasthan. When the Intel® Teach Program was introduced in Pali, it made a significant contribution to the education scenario there. This town, with a literacy rate of only 62%, had many underprivileged children who never enrolled at school, or, if they did, dropped out as they had to shoulder their families’ responsibilities.

After he completed his training under the Intel Teach Program, Shaitan Singh worked on a project to get new students to enroll at school and to prevent existing students from dropping out. For his project, he involved all the students of Class 8 of Seth Meghraj Government Adarsh Upper Primary School, with the ideas that the students themselves would spread the message on the importance of education among their peers.

The students took up the challenge, and worked enthusiastically in groups guided by Shaitan Singh. They undertook field work as allocated to them. They conducted surveys and collected data, compiled the data using Microsoft Excel, and then discussed and analysed the data to formulate strategies to address their target audience. They took out rallies, conducted door to door campaigns, and performed skits to create an awareness about the benefits of education.

The success of involving students in the project can be seen from the results. The school administration was pleasantly surprised to see nine children, who had earlier dropped out, coming back to school again, while 42 new children enrolled at the school.

With teachers like Shaitan Singh Rathore who are spearheading a change in their environments, learners in underserved communities can look forward to achieving their potential.

B Sharadha Mani

Panchayat Union Middle School, Odakkadu, Nilgiris



“When we started the project, I didn’t imagine that it would have such a huge impact upon the community.”

A Secondary Grade Teacher at the Panchayat Union Middle School, in Odakkadu, in the Nilgiris district of Tamil Nadu, B Sharadha Mani did her training under the Intel® Teach Program in February 2006. At the workshop, she learned how technology could be used to impact personal and professional lives.

After undergoing the training, she set about engaging all the students in her classroom. She planned her lessons well in advance, using technology aided topics and incorporating Project Based Learning methods that enhanced their learning capabilities. Her students, who are primarily from the Toda tribe, were able to communicate, converse, and present their suggestions to all around them. They were able to clearly explain their needs and set their goals.

Sharadha Mani encouraged and inspired her students to prepare a project on “Child Marriage”, a social malpractice that was still very rampant in the Toda community. Along with her students, she conducted awareness programmes about the evils of child

marriage. They used colourful multimedia presentations to grab the attention of the villagers and make them aware of the issue. After the awareness programme, many parents took an oath to boycott child marriage. The presentations inspired the leader of the Women’s Self Help Group to take the initiative to conduct the awareness programme in the tribal dialect. In recognition of their efforts, the community leader sanctioned a piece of land to be used as a playground by the students.

Not one to rest on her laurels, Sharadha Mani launched another awareness programme. Using technology once again, she started a campaign to encourage girls from the Toda community to pursue higher studies, something that was unheard of in the past. Given the depth of her passion and motivation, she is sure to be successful in this, as well.

Sharadha Mani’s dedication towards her girl students in the Nilgiris, especially those from the Toda tribe, will surely open many doors of opportunity for them.

Sonam Thakur

Government Senior Secondary School, Keylong



“By imparting knowledge through technology and adopting 21st century skills, Sonam has become a harbinger of new educational methods.”

– *The Principal on Sonam Thakur*

The Intel® Teach Program was launched in the Lahaul and Spiti region of Himachal Pradesh in July 2007, and, today, very encouraging results are emerging from this remote area. Technology aided learning is being effectively implemented here, inspired by the likes of Sonam Thakur, who teaches at the Government Senior Secondary School in Keylong.

A lecturer in electronics, Sonam has become a source of inspiration for many teachers in the area. They have approached him for ideas and support as they begin to appreciate the importance of technology in the teaching learning process.

Sonam has developed several technology based projects centred around the curriculum. His students' response has been overwhelming. According to them, technology has made the content easy to understand, as well as very interesting. They find search engines a boon, and now use the Internet to get answers to their queries, and to explore new subjects. As a result, they feel very empowered and confident.

Software that had been provided by the Education Department and was lying unused is today being used enthusiastically by both teachers and students. Attendance in classes has risen. Technology has also helped teachers complete the syllabus on schedule.

The Principal of the Government Senior Secondary School, Keylong, says, “By imparting knowledge through technology and adopting 21st century skills, Sonam has become a harbinger of new educational methods of teaching, and will inspire other teachers of the Valley to resort to such technology.”

Sonam aims to encourage as many students and teachers as possible to make technology an integral part of their lives, in order to make their life easier in this rugged corner of India.

Under the able guidance of teachers like Sonam, students are now clicking on to the world from this remote valley in Himachal Pradesh, as they embark on their journey into the realms of technology.

Ranjan Chutia

Nakachari Higher Secondary School, Jorhat



“I am very proud of what my students have achieved, which they did because of technology.”

After Ranjan Chutia, a teacher at the Nakachari Higher Secondary School, Jorhat, in Assam, trained under the Intel® Teach Program, he became aware of the power and reach of technology.

Every day, on his way to school, he would pass a locality where people were constantly fighting over scarce water. And, ironically, he would pass another locality where water was wasted from dripping taps. Ranjan e decided to work on a project on water conservation with his Class 8 students, where they could spread awareness as well as bring about desirable changes in peoples' behaviour. He divided his enthusiastic students into teams, and encouraged them to visit the nearby Community Information Centre to use the Internet for their research.

The student teams divided their tasks: while some encouraged people to conserve water, others researched on solutions that would help avoid the wastage of water. Working innovatively, they sourced out similar problems faced by other villages, and learnt from the solutions that had been implemented there.

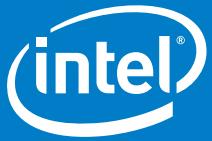
They used technology to make presentations on the importance of water conservation, supported by data on printouts.

Aided by their principal, they set up a meeting with the social leaders of the villages selected for the campaign. They also met the Engineer of the Public Health Department of Jorhat district, and addressed the officials on the problems faced by the villagers. These interviews were then shared with the Panchayat.

As a result, the Panchayat realised their apathy in addressing the issue. They approached the officials of the Public Health Department to ask for an automatic tap. People in the area now use water without any wastage.

This project was selected as an entry from their school at the Assam Children's Science Congress, and was presented at the All India Children's Science Project Competition as well.

All it took was the confidence of a teacher in his students to bring about the desired change in their environment.



www.intel.com/education/in