

**THE AMERICAN INDIA FOUNDATION'S
DIGITAL EQUALIZER (DE) PROGRAM**
Designed to Bridge the Digital Divide in India

A REPORT PREPARED FOR ADVANCED MICRO DEVICES INC.

DE PROGRAM IN FATEHPUR

June 15, 2007

For Questions & Comments pertaining to this report, Please contact:

Mythili Sankaran
Director, Digital Equalizer Program
Mythili.Sankaran@aif.org
408 916 1793

Geetha Murali
Program Officer, Education
Geetha.Murali@aif.org
408 916 1795

Table of Contents

I. Executive Summary	3
II. DE Program Overview	4
Program Accomplishments	5
Geographical Overview	6
Program Evaluation & Assessment	6
Expansion Plans.....	7
III. AMD and the Fatehpur DE Program	8
Case Studies	9

I. Executive Summary

Advanced Micro Devices' (AMD) contribution was used towards 4 full-service¹ DE centers in Uttar Pradesh's Fatehpur district. The Fatehpur program initially started in October 2005 with the support of another donor. However, the program ran into a number of technical difficulties last year due to unreliable power supply and equipment malfunctions. AMD has since stepped in; and, as of this year, the program is reaching new heights with the help of AMD computers (5 per school). The computers are working with greater efficiency than the computers that were in existence, and now the four schools have 25 fully functioning computers between them (compared to only 7 last year). The teachers are enthused because of the training that has taken place despite technical struggles. This year promises increased program development with over 1500 students and 25 teachers being trained.

Thanks to AMD's support, a struggling program has renewed strength and will ultimately benefit students and teachers as they reap the full rewards of DE. In addition, full-service centers in Uttar Pradesh are forming the basis for exploring a large-scale partnership with the Government of Uttar Pradesh. This partnership may institute the DE program in 40-150 school across the state with special interest in nurturing the high-tech corridor around the Lucknow/Kanpur region. AMD's investment will then be leveraged manifold!

All four schools will display AMD signage as a symbol of AMD's commitment to and continuing support of the DE program. AMD's investment has greatly furthered DE's mission - advancing the use of technology to engage, enrich, and empower India's underserved children.

¹ **Full service demonstration model:** AIF pays for and implements the DE school in its entirety as a way to demonstrate effectiveness to the local government and community. These are turn-key centers that comprise of up to 10 multimedia computers, Internet, etc. that is implemented by AIF along with the funding partner. These centers also serve as innovation centers where we launch new initiatives and pilot programs that are replicated through our large-scale model (e.g. recent innovations that have been launched through our full-service model include solar technology for rural schools, Adobe Youth Voices (a multimedia educational enrichment program), Telling Stories (a cross-border collaboration between U.S. and India schools) . Typically costs \$20K+ per DE center.

Large-scale Partnership model: Once the government, community, or other interested donor (corporate or foundation) is impressed by the DE program, they agree to provide the start up and most of the recurring costs in combinations of product donation, human and intellectual capital, and cash resulting in a significant (approximately 90%) **decrease** in the cost.

II. DE Program Overview

The mission of the DE program is to advance the use of technology to engage, enrich and empower India's under-served children. As we enter the 21st century, it is clear that technology is infiltrating nearly every facet of our lives. There are enormous possibilities and opportunities for young workers who possess "21st-century literacy"—that is, the knowledge and skills to take advantage of the new Internet-related technologies. The task of creating a future citizenry and workforce made up of people who can successfully meet these challenges starts with a quality, relevant education system that prepares students for this Digital Age.

DE seeks to bridge the digital and educational divide in India by providing computers, software, Internet access and training to children and teachers in underprivileged schools across the country. Students, who would normally not have access to such technology, use it as part of their regular curriculum and develop proficiencies that are necessary to be competitive in the 21st century workforce. The program blends information technology literacy training (learning how to use computers) and computer-aided learning (learning to use computers to learn other subjects) so that students learn to engage computers, not as an end in itself, but as a means to furthering their education. The DE centers provide training for teachers that couple pedagogical methods with technology-based classroom techniques. Students, in turn, are taught how to use digital technology and the internet as a tool to enhance their education.

DE centers are established in middle and high schools and cater to students between the ages of 12 and 15. The centers consist of computers, Internet connections, software and digital curricula. Each center is supported by a facilitator (one per school) and a coordinator (one per cluster). AIF supports each school for a period of three years and assists schools in cultivating other funding sources for future sustainability.

To meet the program's objectives, trained teachers reshape their pedagogical programs, actively engaging students with interactive and collaborative learning that integrates technology and the Internet into the curriculum. DE is designed around the following three key components: Technology infrastructure, Tools (software) and Training. The program provides participating classrooms with teacher guides and student resources related to these key areas:

- ***Technology infrastructure***

A typical DE center contains 8-10 multimedia computers (or a minimum student to computer ratio of 40:1) loaded with Windows/Linux Operating System, power, broadband networking, Internet connectivity and other peripheral digital technologies (including printers, digital cameras, projection system, digital telescopes, etc.). The computing technology is typically procured at discounted rates through PC OEM partners in India (HCL, HP etc).

- ***Software and learning tools***

All DE centers come equipped with a comprehensive software package that includes Open Office, regional language fonts and browser capabilities in addition to grade-appropriate curriculum software and project-based learning resources that emphasize sound pedagogical techniques.

- ***Extensive training***

A fundamental USP (Unique Selling Proposition) of the DE program is the emphasis on self-sufficiency and capacity-building within the school system via in-depth training. The DE program includes an extensive 3-year training component intended for the different stakeholders within the school system: Students, Teachers and School Administration. The comprehensive training component includes computer basics, use of popular Office tools (MS Office – Word, Excel,

PowerPoint, Open Office etc.), effective use of the internet as a tool for research, project based learning techniques, use of email and use of various digital technologies to help create rich multimedia content.

Over the last 2 years, as the DE program has evolved, two distinct program delivery models have emerged:

Full service demonstration model: AIF pays for and implements the DE school in its entirety as a way to demonstrate effectiveness to the local government and community. These are turn-key centers that comprise of up to 10 multimedia computers, Internet, etc. that is implemented by AIF along with the funding partner. These centers also serve as innovation centers where we launch new initiatives and pilot programs that are replicated through our large-scale model (e.g. recent innovations that have been launched through our full-service model include solar technology for rural schools, Adobe Youth Voices (a multimedia educational enrichment program), Telling Stories (a cross-border collaboration between U.S. and India schools) . Typically costs \$20K+ per DE center. (see Appendix A for budget)

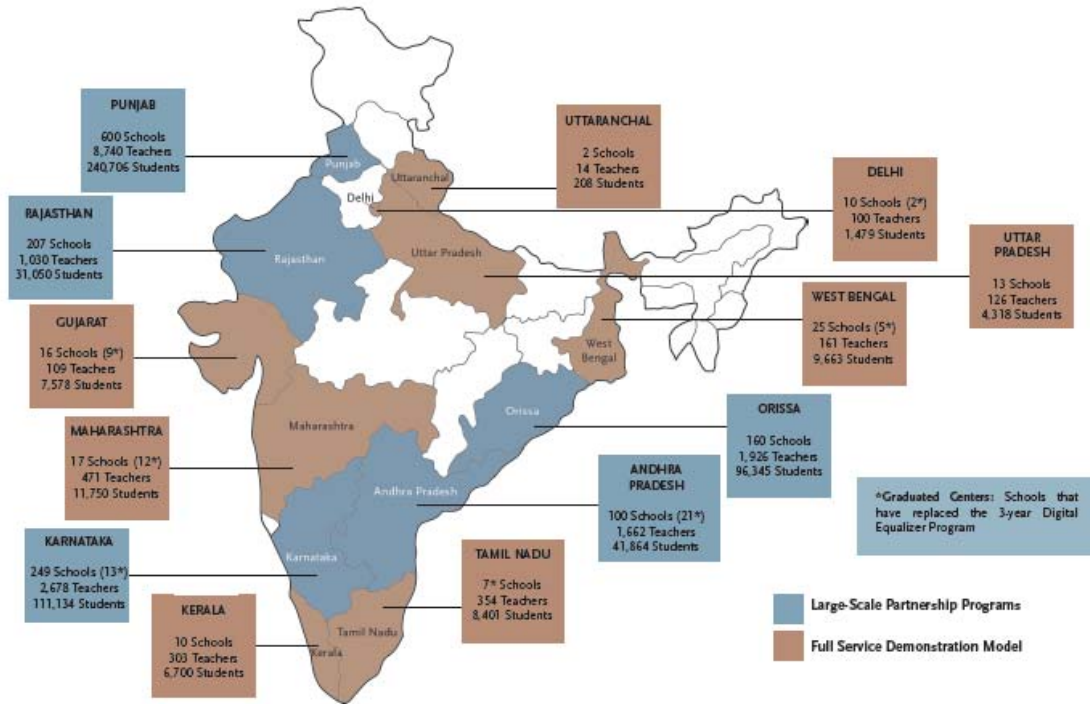
Large-scale Partnership model: Once the government, community, or other interested donor (corporate or foundation) is impressed by the DE program, they agree to provide the start up and most of the recurring costs in combinations of product donation, human and intellectual capital, and cash resulting in a significant (approximately 90%) **decrease** in the cost.

Program Accomplishments

The DE program has the following accomplishments since 2001:

- Presence in 13 states (see map on Page 6)
- Total # of schools:1500
- 69 “graduated” centers
- Over 95% sustaining beyond AIF’s 3-year commitment
- 17000+ Teachers trained
- 550,000+ students benefited
- Large-scale Government partnerships forged
- Rich, multimedia content
- Corporate Partnerships
- Teachers attended International workshops
- Students win International competitions

Geographical Overview



Program Evaluation & Assessment

All of AIF's programs are evaluated regularly through a combination of AIF staff and outside evaluators.

DE Program coordinators conduct regular assessment of the schools' progress through evaluation of both students and teachers. In 2004, AIF also engaged an independent assessment group, Taleem Research Foundation, in order to assess the effectiveness of the program and fulfillment of its goals, and to document the experiences of all participants of the program with a view to improve and enhance the program. The evaluation employed both qualitative and quantitative methods and surveyed 46 schools in Bangalore, Chennai, Hyderabad, Kolkata and Mumbai. Data were collected using standard questionnaires from six sets of respondents, namely students, teachers, principals, facilitators, school administrators and city coordinators.

The findings were as follows: The DE schools surveyed experienced

- Decrease in dropout rates
- Better teamwork amongst peers
- Improvement in students' general knowledge, subject knowledge and creative thinking
- Enhanced confidence and ability to think creatively
- Improved exam scores and ability to answer questions correctly in class.

This year, DE is embarking on plans for program-wide impact assessment. This will provide a transparent mechanism through which to demonstrate program achievements to governments and funders as well as leverage resources for long-term social benefit. In addition to benchmarking DE against other global and government initiatives, this assessment will facilitate development of a DE scorecard that will be used by DE schools as a monitoring instrument - emphasizing concrete measures of programmatic success. The routine and uniform usage of such a scorecard will provide the data necessary to advocate for massive social reform in the ICT in education space. Such advocacy will promote the creation of an integrated policy for ICT in education that will effectively deploy federal and regional resources for the betterment of marginalized students across India.

The Program has been and will continue to be evaluated based on its progress towards DE's long-term objective (i.e. to use the DE model to influence education policy - advocating the role of technology in improving the quality of education and institutionalizing the program within the Indian public school system). In addition, progress will be measured against the following outcomes: 1) Scale 2) Number of teachers and students trained 3) Academic Outcome 4) Computer Literacy 5) Teacher Capacity and 6) Sustainability.

Expansion Plans

Giving to individual causes is commendable, but the ability for an organizational network to leverage dollars, engage local partners and scale projects is what will create meaningful and sustainable change in India. The numbers are too large for any individual or group of individuals to address alone - this must be a large collective effort. By leveraging public (government) and private (foundations, corporations and individuals) partnerships and funding, we will confront the aggressive demand for expanding the DE program.

Specific, strategic objectives include:

- Leveraging donations from corporations or individuals who agree to fund the large scale deployment in specific cities/states of interest and importance to them
- Launching a small number of demonstration pilots to penetrate new states and prove the model's effectiveness to the local governments in those states

Our expansion plans up to 2008, pending the identification of funding sources, is as follows:

- 2007: ~1500 schools planned (~1000 new)
 - Replicate large scale implementations in Karnataka and Andhra Pradesh
- 2008: 2500 schools

The DE program's success has been validated by the number of state governments that have sought to partner with AIF and bring large-scale rollouts to their respective states. We currently have partnerships with the governments of Punjab, Orissa, Kerala, Rajasthan, West Bengal, Andhra Pradesh, and Karnataka. In Punjab, AIF is working across 2,600 schools to monitor and advise the incorporation of technology-aided learning in school curricula. As we develop such partnerships, AIF will increasingly be able to maximize the impact of its funds by leveraging changes in education policy.

III. AMD and the Fatehpur DE Program

AMD's grant of \$50,000 was used towards 4 full-service DE centers in Uttar Pradesh's Fatehpur district. While the program in Fatehpur ran into a number of technical difficulties last year due to unreliable power supply and equipment malfunctions, as of this year, the program is reaching new heights with the help of new AMD computers (5 per school).

The schools were provided with five AMD-based PCs with the following configurations:

Name of School	Configuration	Number	Total
Janak Dulari Ram Bahadur Patel H S School, Aung, Fatehpur	AMD Athlon64 cpu@3500+/512 MB RAM/80 GB HDD/Combo Drive	1	5
	AMD Athlon64 cpu@3500+/256 MB RAM/80 GB HDD	4	
Maharana Pratap Inter College, Karchalpur, Fatehpur	AMD Athlon64 cpu@3500+/512 MB RAM/80 GB HDD/Combo Drive	1	5
	AMD Athlon64 cpu@3500+/256 MB RAM/80 GB HDD	4	
Mahadev Prasad Bittan Devi H S School, Narayandaskhera, Fatehpur	AMD Athlon64 cpu@3500+/512 MB RAM/80 GB HDD/Combo Drive	1	5
	AMD Athlon64 cpu@3500+/256 MB RAM/80 GB HDD	4	
Mahendra Pal Saraswati Shishu Mandir, Bakewar, Fatehpur	AMD Athlon64 cpu@3500+/512 MB RAM/80 GB HDD/Combo Drive	1	5
	AMD Athlon64 cpu@3500+/256 MB RAM/80 GB HDD	4	

These computers were purchased to improve the quality of the program in these schools as the existing computers were facing major malfunctions (only 7 functioning across all 4 schools). Please see attached budget for a full-service center (Appendix A). AMD's grant was used towards half of the hardware costs and other program expenses (\$12,500 was allocated per school).

Now the four schools have 25 fully functioning computers between them (compared to only 7 last year) and teachers are enthused because of the training that has taken place despite technical struggles. **This year promises increased program development with over 1500 students and 25 teachers being trained.**

Case Studies

Case Study 1:



Jai Singh Yadav is in the 9th grade at Mahadev Prasad Bittan Devi High School in Fatehpur. His father, Virendra Yadav, can barely read and write and works as a day laborer on various farms. He makes less than 100 rupees per day – after ten hours of work. Jai Singh's mother is completely illiterate.

Jai Singh came to school everyday without any interest in studying. Due to his poor learning skills, he was rarely acknowledged by the teachers. When the Digital Equalizer Program was brought to Jai Singh's high school, he embraced an exciting opportunity – the ability to change his life. Jai Singh started using curriculum software to enhance his understanding of the subject matter. To this young man, who had never seen a computer, working on a computer everyday was like a dream come true. He outshone the other students in his computer skills and his ability to prepare curriculum projects through the use of technology. Jai Singh is now one of the best students in his class. He has created two class projects through the use of curriculum software; and, by training himself beyond the courses provided by the DE facilitator, he has recognized the use of technology for tasks outside of his immediate coursework. He has even helped his own teacher prepare a grade sheet to track student achievement.

Jai Singh's self-confidence and academic development are both on the rise!



Case Study 2:

Shahendra Singh lives in Rasoolpur, a village in Fatehpur district, Uttar Pradesh. As a student in the 8th grade, Shahendra performed poorly. His teachers hardly paid any attention to him, assuming him to be an underachiever. Employed as a sweeper in a private hospital, Shahendra saw limited prospects for his future. He did not dream beyond the hospital walls.

When the DE program began at Mahendra Pal Saraswati Shishu Mandir, Shahendra had not seen a computer before. He never imagined he would have the opportunity to sit in front of a computer screen, let alone operate a functioning computer. Shahendra's curiosity drove him to numerous hours in the computer lab. His teachers were surprised at the change in his attitude towards his education. Shahendra began interacting with other students in his class and consulting with peers from other schools. He began to borrow books from his classmates and absorb as much information as he could. He started to take an active interest in his schoolwork. There is a definitive improvement in his performance and his report cards tell the story!