The Computerworld Honors Program

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Final Copy of Case Study

Status:
Laureate

Year:
2013

Organization Name:
AMD Foundation

Organization URL:
www.amd.com/changingthegame

Project Name:
AMD Changing the Game

Please select the category in which you are submitting your entry:
Philanthropy

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

AMD recognizes that science, technology, engineering and math skills, known as STEM, are not only important in a 21st century work environment, but required to provide a trained workforce for countries around the world to achieve economic success. Many regions of the world are at a disadvantage in educating their youth in STEM-skill areas. Their inability to properly prepare citizens for the digital age means that they may never enter it. The AMD Changing the Game (CTG) program seeks to address this issue by supporting programs globally in such nations as Brazil, Canada, China, Germany, Malaysia, the United Arab Emirates (Abu Dhabi) and the United States. CTG is an innovative program designed to inspire youth to learn skills by creating their own video games around

a social issue, such as energy, environment, health and wellness, bullying, etc. CTG focuses in four areas of support for this issue: game design, game competitions, curriculum, and advocacy. Many of the youth served by CTG had their first experience in using technology and creating games as a direct result of this program. Also, youth with diverse backgrounds are being exposed to technology and technology careers and gaining a greater understanding of potential career opportunities that they previously had not considered. Metrics are based on a set of key performance indicators including number of youth reached (159,611), number of teachers trained (4,973), number of games created (27,975) and the number of AMD processor-based PC technology centers deployed (24). To date, the AMD Foundation and AMD Inc. have distributed nearly US$8 million to nonprofit organizations and schools in the form of monetary grants and computer hardware to support game development in STEM education.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

AMD Changing the Game first launched in June 2008 at the Games for Change Festival in New York City. Over the last four years the program has expanded to eight countries including the United States, Brazil, Canada, China, Germany, Japan, Malaysia and the United Arab Emerate. More than 159,000 students have been introduced to game design as a means to increase STEM learning. Technology updates include the addition of two new cloud based game design tools that are accessible to youth all over the world free of charge, the addition of four new technology labs, and an academic research project with the University of Wisconsin and Microsoft to measure how game design can improve computational thinking in students and increase their interest and STEM learning.

If this is a previously submitted project that has been significantly updated and/or expanded, please describe the nature of the update here. (In 300 words or less.)

Yes, AMD Changing the Game was recognized last year. Program updates include the addition of a cloud -based game design web site called Activategames.org, and the AMD Gamezone in Whville.net, which provides tutorials, tools and lessons to teach youth game design. Over 35,00 youth have used these websites to make games on a social issue. Working with Boys & Girls Clubs, the program expanded into Japan with a game design program and also a computer lab with 15 state-of-the-art computers and software. We are now working with a large school district in Austin, Texas, on after-school game design programs for at-risk middle school children and in-school programs for high school students. Additionally, AMD provided over 60 new computers and

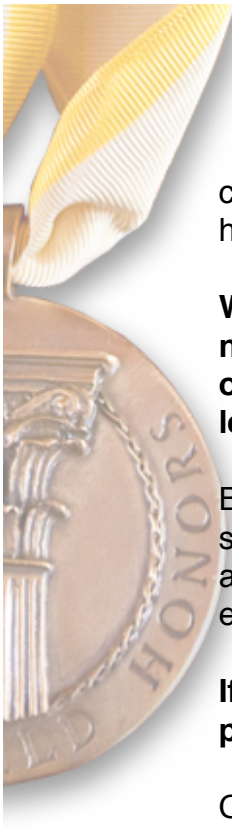
software to a charter school called East Austin College Prep. Most of the students in this school come from economically challenged backgrounds. AMD equipped two labs with technology and funded the implementation of Globaloria, an in-school game design curriculum that is integrated into science, technology and civics classes. Longitudinal research is also being collected on these students and current data shows that students are actually scoring as much as 40% higher on standardized testing and they are becoming much more confident in their ability to work with complex technology.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

This program will continue to grow and evolve over the years. Currently there are no plans to terminate it. Our goal is to reach 1 million students by 2020 with game design opportunities. Next phases of the program include adding engineering related activities such as lessons on creating simulations and additional longitudinal student research to track STEM efficacy and attitudes towards STEM learning and careers.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

The Dandelion School is the first and only registered non-profit Middle School in Shou-Bao-Zhuang Village in Beijing, China, serving children of poor migrant families. The school currently enrolls approximately 800 students. An average student family earns approximately $1,100. AMD and Parsons set up an advanced multimedia computer lab with 30 Dawning desktop computers. 510 students participated in summer workshops, learning about iterative design and programming of digital games to strengthen STEM skills and develop stronger issue literacy on environmental and energy-related topics. The curriculum is structured as a set of Challenges with 2 levels of increasing difficulty. This was a great opportunity for students to learn IT and game design skills in a technology setting that is not commonly available to them due to their economic status. Many of these students would not have had the exposure to this technology had it not been for this program. As a result, the school decided to integrate the summer camp curriculum and use it as a technology elective in the regular school year. This may not have been possible without the funding and expertise provided by AMD and the AMD Foundation. "Students were extraordinarily active in this program and so were the parents. It not only provided them with necessary computer skills, but also raises their social consciousness," said Mr. Ji, Dandelion School program manager. "I never thought that I could use advanced



computers, not to mention design video games. I thought it would be extremely hard, but it was not," said Lily Li, a seventh-grade student.

Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

Best practice for using a unique technology (digital game design) to teach STEM skills. It keeps students engaged and interested in school and also teaches them a skill they can take into the workforce. Web-based model can be used by educators worldwide with little technical experience required.

If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

Quotes from teachers and students: "Once we started the game design workshop the engagement level of the kids soared. They were more focused on tasks and working toward completion. I also didn't encounter as many behavioral issues." Westview Middle School teacher, Pflugerville, Texas. "The most impressive thing is that every game is related to a social issue. Thus while students try to design their own games, they are also thinking through and creating solutions for relevant social issues." Ms. Zheng, technology teacher at Dandelion Middle School. "The program at AISD is an important collaboration to teach students valuable technical and STEM skills that may lead them to a career in a STEM-related field." Shirlene Justice, Austin ISD afterschool program director.