

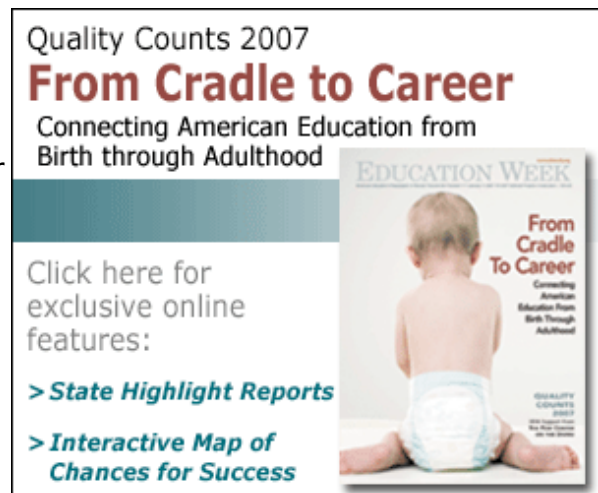
Projects Probe New Media's Role in Changing the Face of Learning

By **Andrew Trotter**

Online multiplayer games that immerse teenagers in scientific challenges and social networks designed to spark their creativity are among a range of research-and development projects that the MacArthur Foundation has backed since it launched its **its digital-learning initiative** a year ago.

[← Back to Story](#)

The Chicago-based John D. and Catherine T. MacArthur Foundation committed \$50 million in October of last year to a five-year initiative to understand how digital technologies are changing the way young people learn, play, socialize, and participate in civic life. ("**Funder Seeding Work in the Emerging Field of 'Digital Learning,'**" Nov. 15, 2006.)



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The initiative so far has awarded about \$23 million in 36 grants to lead researchers and their organizations, most of them universities. John C. Cherniavsky, a senior adviser for research in the education and human-resources directorate at the National Science Foundation, said the initiative may have catapulted the MacArthur Foundation to the forefront of funders supporting research in educational technology.

"They're a major player," he said. "They might be the biggest funder, depending how you count the money."

Though some projects reach well beyond schools, they are relevant to the future of public education, said Constance M. Yowell, the foundation's director of education. Schools are like the middle of a sandwich that is falling apart, she said. Flanking them are industry and pop culture, on one side, and digitally adept children, on the other, both moving forward at an unprecedented pace.

"Way behind, in the middle, are the schools," Ms. Yowell said in an interview. "That disconnect is a huge problem that is part of the problem of the disengagement of young people in schools."

MacArthur's work complements research underwritten by his agency and the U.S. Department of Education, Mr. Cherniavsky said. "Their support is probably less encumbered

bureaucratically, with less intensive reporting requirements and auditing than the federal government," he said.

Immersive Environments

Several of the MacArthur research projects experiment with tools that help students engage with academic content. "We now have a whole set of tools that allows us to engage the social nature of learning," Ms. Yowell said.

Sasha A. Barab, an associate professor of learning sciences, instructional-systems technology, and cognitive science at Indiana University Bloomington, leads a team that has created **Quest Atlantis**, an online three-dimensional learning environment that teaches academic material while building teenager's digital-age competencies and an ethical disposition to improve the world.

Using strategies from commercial online role-playing games and lessons from educational research on learning and motivation, Quest Atlantis lets students travel to virtual places on educational quests, talk with other users and mentors, and build virtual personalities.

The MacArthur Foundation has granted \$500,000 to the project and this month is considering an additional \$1.86 million grant, Mr. Barab said. That is on top of \$2 million awarded by the National Science Foundation in 2003. And the North Carolina-based Food Lion LLC grocery chain has contributed \$500,000 to give North Carolina teachers and students access to the project; one-day training sessions for 1,500 teachers, who applied to participate, will take place this winter.

Some MacArthur-funded researchers are examining what can happen when students and teachers have more access to technology, such as that as provided by one-to-one laptop-computer projects.

"Our program says if the access issue is addressed, then we can really focus on what are the practices, activities, and people we need to put at the disposal of urban kids to develop their desire to create digital media," said Nichole Pinkard, the director of technology at the Center for Urban School Improvement, at the University of Chicago. The center, which has a staff of artists, works with students who attend a handful of Chicago charter schools, consisting of several middle schools and one high school, in which the students all have access to laptops.

The project aims to cultivate the new kinds of literacy that students need for learning and living,

Examining Digital Media

Launched in 2006, the John D. and Catherine T. MacArthur Foundation's five-year digital-media and -learning initiative is awarding **\$50 MILLION** in grants to help determine how digital technologies are changing the way young people learn, play, socialize, and participate in civic life.

The initiative supports projects that fall into four major categories:

- Examining how young people are changing as a result of digital media

AMOUNTS AWARDED TO DATE: \$6.2 million

- Exploring the development of new learning environments

AMOUNTS AWARDED TO DATE: \$8 million

- Studying how social and civic institutions

she said. Roughly 700 students at the schools take part in activities that involve creating in different media forms during and after school hours. At three schools, for example, staff members help students in a 6th grade media-arts class form their own record label. The students record podcasts, compose music and lyrics, produce graphics, and write comic books.

could change in the future

AMOUNTS AWARDED TO DATE: \$4.8 million

- Helping build the field of research and development in youth and digital media

AMOUNTS AWARDED TO DATE: \$4 million

SOURCE: MacArthur Foundatio

“Almost as important, they learn how to critique music videos they see on an everyday basis,” Ms. Pinkard said.

Her staff also helps teachers rethink their units and lessons to incorporate videos and rap songs.

After school, the schools offer video and music clubs, new-media journalism, and training in the design of games and robots. Students may share their work online using a social network, called Remix World. The network is not accessible to people outside the project.

Other MacArthur grantees working with K-12 schools include Global Kids, a nonprofit group that runs after-school programs in New York City. The money supports activities organized in virtual worlds, such as Teen Second Life. In one activity, students make movies online called “machinima,” said Barry Joseph, the director of Global Kids.

Katie A. Salen, the director of the Institute of Play, in New York City, is a partner in two projects supported by MacArthur grants. One, led by game researcher Jim Ghee and involving a commercial game company, is creating an online, narrative game in which teenagers are game mechanics who learn to fix and modify broken games in a game-driven world.

The second project in which the Institute of Play is a partner centers on starting a new secondary school in New York City, under the city’s small-schools initiative, that will integrate games into the curriculum.

Through Young Eyes

Other grants support more fundamental research. Seeing digital media from the perspective of young people is a priority of Mizuko “Mimi” Ito, a research scientist at the University of Southern California, in Los Angeles, who has received \$3.3 million from the MacArthur Foundation, including grants that preceded the digital media initiative.

The project sends postdoctoral and graduate students to interview students and observe them in informal educational environments as they interact with digital media.

Ms. Ito has been impressed by “the diversity of forms of uptake [of digital media] among different kinds of youths with different interests.”

The mainstream social-networking Web sites, she said, “are pretty much focused on kids’ reproducing their peer relationships,... featuring friendship and flirting behaviors kids play out

at school.”

But other, more specialized online communities, including those devoted to music, video production, or modification of digital games, are highly creative and productive, Ms. Ito said. “These other communities are production-oriented, involving very technically sophisticated kinds of activity; these tend to be very different kinds of kids,” she said.

Young people are creating such communities themselves and “are constantly looking at each others’ work and critiquing it,” Ms. Ito said. “These are also incredibly productive learning contexts.”

Schools should be paying attention, she said, to “the dynamics we see in online spaces, where kids are getting very rich and immediate feedback from their peers—that ties into a very rich and immersive learning ecology.”

Ms. Ito plans to make her research available as short ethnographic case studies and a book. But already other MacArthur grantees are drawing on it.

Ms. Ito said the MacArthur initiative has broken new ground.

“It is very rare you get this kind of investment into educational research that’s really about learning outside of formal educational institutions,” she said. “It disrupts our existing model of how educational research is funded and what counts as learning research.”

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