

## EXPLORING DIGITAL MEDIA & LEARNING

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*The MacArthur Foundation's digital media and learning initiative aims to determine how digital media are changing the way young people learn, play, socialize, and participate in civic life. Answers are critical to education and other social institutions that must meet the needs of this and future generations.*

### AT A GLANCE

- MacArthur launched the digital media and learning initiative in 2006 to explore how digital media are changing the way young people learn, socialize, communicate, and play.
- Since 2006, the Foundation has awarded grants totalling more than \$85 million to organizations and individuals in support of digital media and learning. The grants have supported research, development of innovative new technologies, and new learning environments for youth, including a school based on game design principles.
- Groundbreaking research supported by MacArthur resulted in the first ethnographic study of how youth in the United States participate with digital media, which showed that their learning is peer based and occurring anywhere, anytime.



New York City's Quest to Learn, the nation's first public school based on principles of game design, allows students to construct their own learning environments.

### BACKGROUND

After 26 years of significant investment in traditional school reform with less impact than hoped for, the MacArthur Foundation changed its focus from education to learning, specifically how young people are learning outside of school as they participate with digital media. In 2006, the digital media and learning initiative was launched to test the notion that public education would have to transform if it is to prepare young people for the complex and connected social, economic, and political demands of 21st century society.

Three questions guide the core of the Foundation's digital media and learning grantmaking:

- Are young people changing as a result of digital media and learning?
- How should young people's learning environments change?
- How should learning institutions change?

Grants are made to designers, researchers and practitioners working to answer these questions and advance the field of digital media and learning.

#### Are young people changing as a result of digital media and learning?

Research has included a three-year ethnographic study and projects exploring young people's ethical development, civic engagement, and their efforts to assess the credibility of information. In addition to a clearer picture of young people's time online, Foundation-supported research suggests a set of skills that young people will need to navigate a society that provides an abundance of information and connects people around the world through digital platforms.

The research supports the findings of earlier studies: people learn best through doing and learning is better retained and more easily applied in different settings when it connects to other things of interest, involves opportunities for failure and success, and takes place with others. The use of digital media outside of schools aligns with these principles of learning — it is highly social, encourages experimentation and tinkering, and makes it easier to produce, make, and share things. However, most schools have not integrated digital media into the way they teach.

#### How should learning environments change?

The classroom, textbooks, and the transfer of knowledge from teacher to students represent the classic learning environment. Several Foundation-supported projects have explored how social networks, video games, virtual worlds, and mobile phones might be used, either separately or together, to improve the learning experiences of young people. A set of design principles emerged from these projects that are informing the creation of new learning environments, including the innovative Quest to Learn school in New York City based on principles of game design, soon to be replicated in Chicago. Other projects are exploring alternate approaches to assessment.

#### How should learning institutions change?

Foundation-funded research shows that young people live in highly fragmented worlds. Their experiences in schools, libraries, museums, and after-school programs are rarely connected. Their many activities online are similarly fragmented and rarely connect to their offline interactions with adults. In New

York City and Chicago, the Foundation is supporting networks of schools and civic and cultural institutions that provide coordinated learning opportunities for young people.

### BUILDING A FIELD

The Foundation has supported a variety of projects and activities designed to build an interdisciplinary field focused on digital media and learning, including:

- *The International Journal of Learning and Media*, an online journal produced by MIT Press that provides a global and intercultural forum for scholars, researchers, and practitioners to examine the changing relationships between learning and media.
- The Spotlight on Digital Media and Learning, a website that showcases the projects and people funded by the Foundation's digital media and learning initiative and covers the intersection of technology and learning.
- The Digital Media and Learning Research Hub, at the University of California, Irvine, to coordinate research and field-building projects.
- The Digital Media and Learning Competition, administered through a partnership with the Humanities, Arts, Science, and Technology Advanced Collaboratory (HASTAC), distributes \$2 million annually to support new applications that embody the development of the future of learning.



On an average day, primary school children spend as many hours engaged in media activity as they spend in school.



## SELECTED FINDINGS

### Digital media are changing the way young people learn, play, socialize, and participate in civic life.

- Video game playing is universal. 97 percent of American teens ages 12–17 play some kind of video game and at least half play on any given day.
- Mobile device ownership among children ages 4-14 has experienced double-digit growth since 2005.
- Almost all children in the U.S. have access to a mobile device, with 93 percent of 6-9 year olds living in a home with a cell phone.
- Social media activities are associated with several beneficial social activities, including participation in discussion networks that are more likely to contain people from different backgrounds.
- According to a survey of undergraduates at a large public university: 99 percent have their own computers; 95 percent of those with computers use them daily; 76 percent have iPods or equivalent; 51 percent use online social interaction tools daily; 93 percent use instant messaging; 34 percent use cell phone text messaging daily; 90 percent say information technology (IT) helps them learn. 93 percent say IT helps them communicate with their instructors. 94 percent say IT helps them with research.



More than half of online teens have created content for the Internet, such as blogs and personal web pages, or shared artwork, photos, stories or videos.

- More than 75 percent of teens have gaming experiences that parallel aspects of civic life, such as helping others and thinking about moral and ethical issues.
- Teens who have video game experiences that parallel civic life are much more likely to follow current events, raise money for charity, and be committed to civic participation.

**There is an ongoing shift in the way young people learn. Digital media allow a style of learning that is less about consuming knowledge and more about interaction and participation.**

- Fifty-one percent of students said gaming technologies make it easier for them to understand difficult concepts.
- Youth are growing up in an age of increasing accessibility of tools for digital production. Youth are making, remaking, and adapting digital content and technology in a culture that is highly social and participatory.
- More than half of online teens have created content for the Internet such as posting to a blog or personal website or sharing artwork, photos, stories and videos.
- Roughly one third of all teens who use the Internet have shared the content they produced.
- Middle school and high school students say they share photos, videos or music (38 percent); create new videos, music, audio or animation (32 percent); or even repackage different pieces to create something entirely different (23 percent). Students are increasingly contributing to blogs (18 percent) or wikis (11 percent).
- Younger students (3rd–5th grade) also are taking advantage of the tools available to them. They share videos, podcasts or photos via the Internet (32 percent) and also contribute to blogs, quite often associated with the virtual reality environments (13 percent).

**Learning looks different today — digital media are transforming learning environments into a networked world that can be accessed anywhere and at anytime.**

- Young people are learning in peer-driven groups.
- The Internet provides new kinds of public spaces for youth to interact and receive feedback from one another. Young people respect each other's authority online and are more motivated to learn from each other than from adults.
- On an average day, primary-school children spend as many hours engaged in media activity as they spend in school.

**Parents, teachers and others with a stake in a young person's education need to participate in the new digital world to understand it and to provide guidance for young people's learning.**

- Youth are navigating complex social and technical worlds online, learning basic skills that they need to fully participate in contemporary society. The social worlds that youth are negotiating have new kinds of dynamics, as online socializing is permanent, public, involves managing elaborate networks of friends and acquaintances, and is always on.
- There is a generation gap in how youth and adults view the value of online activity. Adults tend to be in the dark about what youth are doing online, and often view online activity as risky or an unproductive distraction. Young people, however, see the social value

of online activity and are generally highly motivated to participate.

- Three out of four administrators say mobile learning devices are beneficial for increasing student engagement in school and learning, and one-half of those surveyed say mobile devices can be used to extend learning beyond the school day.

#### SOURCES

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## REPRESENTATIVE GRANTS

### Are young people changing as a result of digital media and learning?

UNIVERSITY OF SOUTHERN CALIFORNIA,  
ANNENBERG CENTER FOR  
COMMUNICATION  
*Los Angeles, CA*

Two grants totaling \$1,426,580 in partial support of a multi-site ethnographic study of how and to what effect young people use digital media.

HARVARD UNIVERSITY, GRADUATE  
SCHOOL OF EDUCATION  
*Cambridge, MA*

\$900,000 in support of a study of the effect of digital media on young people's ethical development and the creation of curricula for parents and teachers.

MILLS COLLEGE  
*Oakland, CA*

\$4,500,000 in support of the MacArthur Research Network on Youth and Participatory Politics.

NORTHWESTERN UNIVERSITY,  
DEPARTMENT OF COMMUNICATION  
STUDIES  
*Evanston, IL*

\$309,000 in support of a quantitative study of how young people use the Internet to search, sort, and use information, and the implementation and assessment of an intervention targeting improved Internet use, participation, and skills.

UNIVERSITY OF CALIFORNIA, IRVINE  
*Irvine, CA*

\$4,500,000 in support of the MacArthur Research Network on Connected Learning.

UNIVERSITY OF CALIFORNIA, IRVINE  
*Irvine, CA*

\$2,970,000 to establish the Digital Media and Learning Research Hub.

### How should learning environments change?

INDIANA UNIVERSITY  
*Bloomington, IN*

\$500,000 in support of the Quest Atlantis environment for young people to improve their science knowledge and media literacy skills.

UNIVERSITY OF CALIFORNIA IRVINE  
*Irvine, CA*

\$5,632,000 to operate, publicize, and support the winners of an open-call competition at HASTAC to build the field of Digital Media and Learning.

UNIVERSITY OF WISCONSIN-MADISON,  
SCHOOL OF EDUCATION  
*Madison, WI*

\$1,200,000 in support of the design and development of innovative game modules, curriculum, and tools to support young people's media literacy.

ICIVICS

*Washington, DC*

\$780,000 in support of the design and development of iCivics, and innovative learning environment to teach social studies, civic engagement, an 21st century skills.

SOCIAL SCIENCE RESEARCH COUNCIL  
*New York, NY*

\$1,000,000 to develop STARTL, a fund to support the development of learning applications.

INSTITUTE OF PLAY

*New York, NY*

\$1,100,000 to develop Quest to Learn public school in New York City.

### How should social institutions change?

INSTITUTE OF MUSEUM AND LIBRARY  
SERVICES

*Washington, DC*

\$1,250,000 in support of the scale-up of YouMedia teen learning space.

NEW YORK COMMUNITY TRUST

*New York, NY*

\$1,500,000 in support of the New Youth City Learning Network of schools, libraries, museums, after-school programs, online communities, and the home in New York City.

STANFORD UNIVERSITY,  
SCHOOL OF EDUCATION  
*Stanford, CA*

\$750,000 in support of the longitudinal documentation and evaluation of the University of Chicago's Afterschool Digital Media Program.







At YouMedia, an innovative learning space for teens at the Chicago Public Library, young people can hang out with friends, remix their own videos, tap into the library's large collection of youth literature, and use the Internet to explore issues of interest.

CHICAGO INTERNATIONAL CHARTER  
SCHOOL FOUNDATION

*Chicago, IL*

\$700,000 in support of the first of three  
campuses of ChicagoQuest charter  
school.

HARVARD LAW SCHOOL, BERKMAN  
CENTER FOR INTERNET AND SOCIETY

*Cambridge, MA*

\$450,000 to develop a youth media  
policy working group.

CHICAGO PUBLIC LIBRARY FOUNDATION  
*Chicago, IL*

\$1,200,000 in support of YouMedia teen  
learning space in the Chicago Public  
Library.

THE CHICAGO COMMUNITY TRUST  
*Chicago, IL*

\$1,300,000 in support of the Chicago  
Learning Network of schools, libraries,  
museums, after-school programs,  
online communities and the home.

### ADDITIONAL RESOURCES

**Digital Media and Learning Research Hub:** [dmlcentral.net](http://dmlcentral.net)

**The Digital Media and Learning Competition:** [dmlcompetition.net](http://dmlcompetition.net)

***The International Journal of Learning and Media:*** [ijlm.net](http://ijlm.net)

**The GoodPlay Project:** [goodworkproject.org/research/digital.htm](http://goodworkproject.org/research/digital.htm)

**Digital Youth Network:** [iremix.org](http://iremix.org)

**YouMedia:** [youmediachicago.org](http://youmediachicago.org)

**Institute of Play:** [instituteofplay.com](http://instituteofplay.com)

**iCivics:** [icivic.org](http://icivic.org)

**Quest Atlantis:** [questatlantis.org](http://questatlantis.org)

**Spotlight on Digital Media and Learning:** [spotlight.macfound.org](http://spotlight.macfound.org)

### For More Information

about MacArthur's digital media  
& learning initiative

#### Connie Yowell

Director  
[cyowell@macfound.org](mailto:cyowell@macfound.org)

#### An-Me Chung

Associate Director  
[achung@macfound.org](mailto:achung@macfound.org)

website

**[www.macfound.org/education](http://www.macfound.org/education)**

### About The MacArthur Foundation

The John D. and Catherine T. MacArthur Foundation supports creative people and effective institutions committed to building a more just, verdant, and peaceful world. In addition to selecting the MacArthur Fellows, the Foundation works to defend human rights, advance global conservation and security, make cities better places, and understand how technology is affecting children and society.

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John D. and Catherine T. MacArthur Foundation  
140 South Dearborn St., Suite 1200, Chicago, Illinois 60603-5285  
Telephone: (312) 726-8000 Fax: (312) 920-6258  
[www.macfound.org](http://www.macfound.org)  
TDD: (312) 920-6285