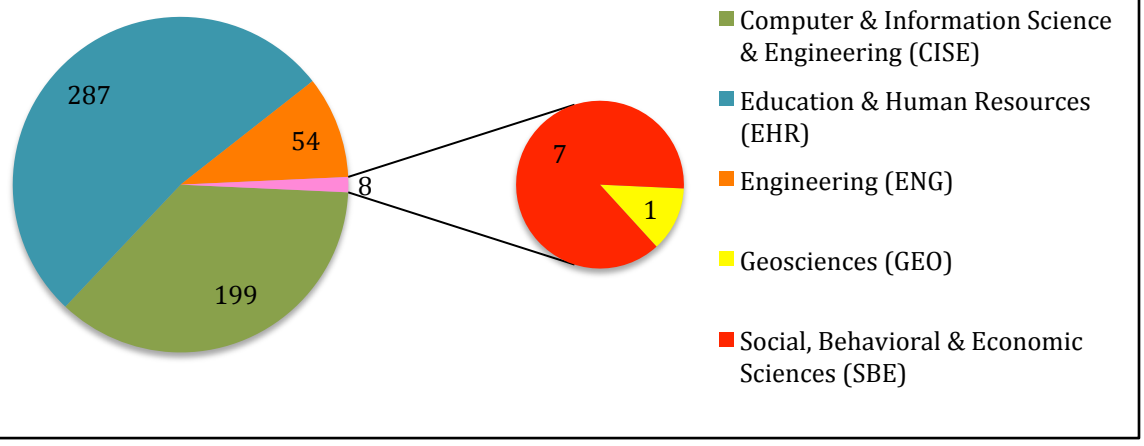
CIRCL Portfolio Monitoring: 2014 Fast Facts

Introduction

Investments in cyberlearning research and development are a priority at the National Science Foundation (NSF). The cyberlearning theme aims to intersect advances in technologies with progress made in the understanding of how people learn. As of calendar year 2014 over $350,000,000 in funding has been allocated to over 500 awards related to the broad cyberlearning theme. Several NSF directorates contribute funding including Geosciences (GEO), Social, Behavioral & Economic Sciences (SBE), Education & Human Resources (EHR) (through programs including DR K-12, AISL, REAL, ITEST, TUES), Computer & Information Science & Engineering (CISE) (through programs including CHS and Special Projects-CISE), and Engineering (ENG) (through programs including SBIR, STTR, and REE) (see Figure 1).

Figure 1: Cybearlearning-themed Awards by Lead Directorate



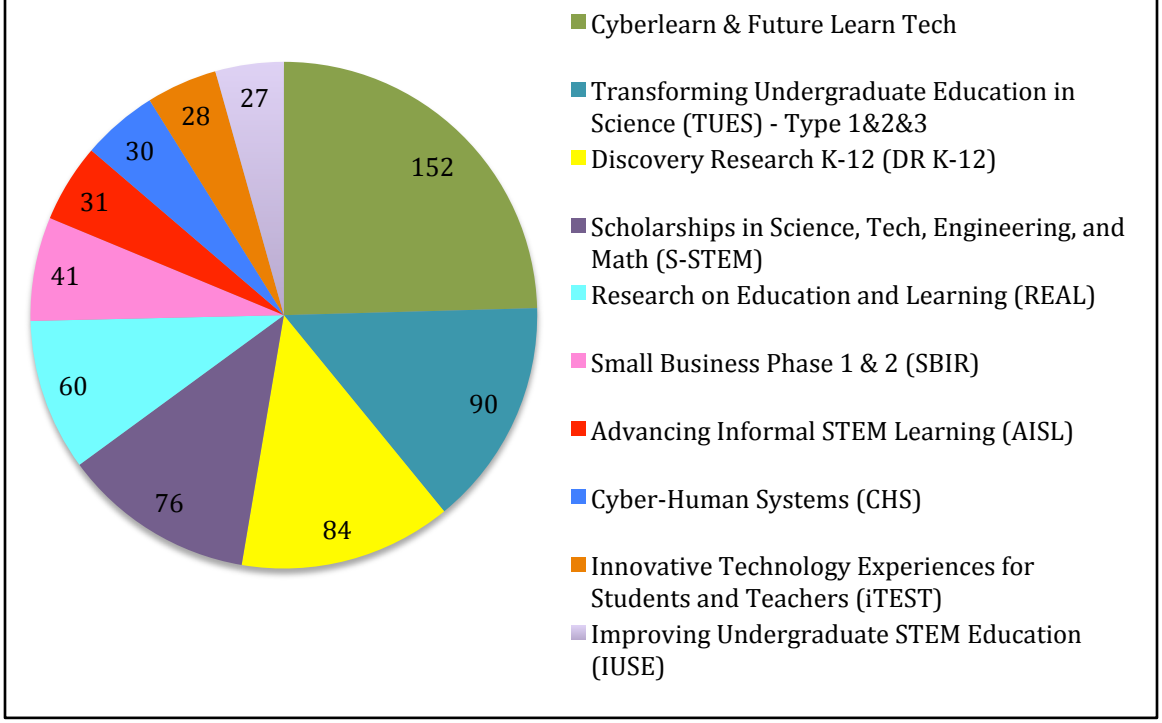
Projects conducting research within this broader cyberlearning-theme receive funding from various programs housed within the five NSF directorates: CISE, EHR, ENG, GEO and SBE (see Figure 2)[1]. Over 200 projects are funded by more than one program, with roughly 160 co-funded by two programs, over 20 awards funded by three programs and over 10

[1] Projects funded by more than one program are counted one time for each program that funds the project. As a result the sum of the numbers in the figure will be larger than the total number of cyberlearning-themed projects.

projects funded by four or more programs. 341 projects are solely funded by one program. Among programs co-funded by two programs the most prevalent joint funding occurs between the following programs:

- Scholarship in Science, Technology, Engineering and Math (S-STEM) and Transforming Undergraduate Education in Science (TUES)
- Discovery Research K-12 (DR K-12) and Cyberlearn & Future Learn Tech
- Research on Education and Learning (REAL) and Cyberlearn & Future Learn Tech

Figure 2: Programs Funding Cyberlearning-themed Awards



Cyberlearning and Future Learning Technology Program 2014 Survey

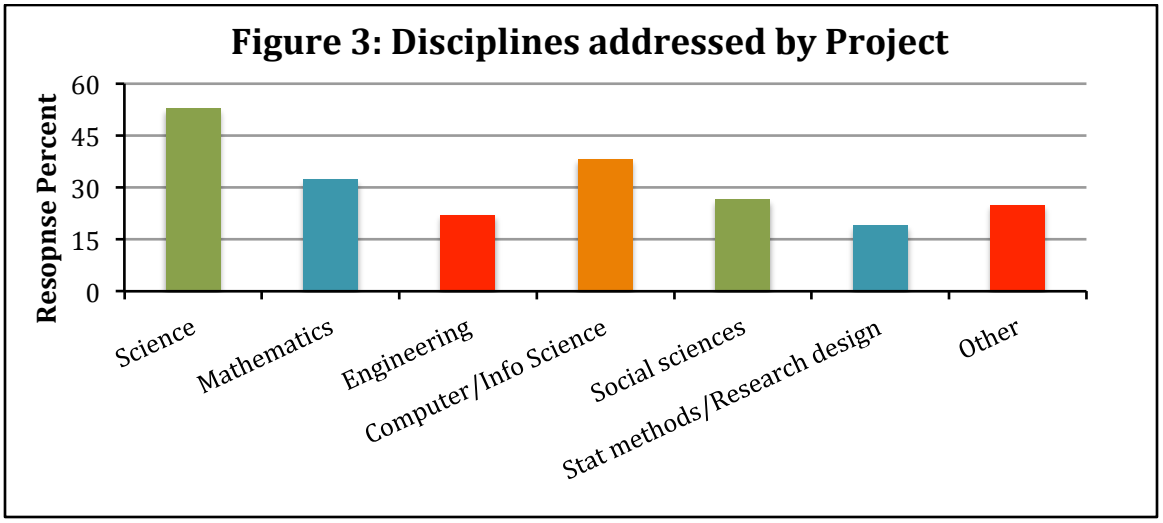
NSF's Cyberlearning investment theme spans a variety of programs, including the Cyberlearning and Future Learning Technology program[2]. As of calendar year 2013 the Cyberlearning program had awarded over $73,000,000 in funds, with an additional $20,000,000 funded through calendar year 2014. Projects funded by Cyberlearn & Future

[2] The program was started in 2011 by NSF Solicitation 14-526.

Tech also receive funds from other programs across NSF, including DRK-12, REAL, AISL and TUES. In 2014 CIRCL[3] sent a survey to 99 PIs of projects funded by the Cyberlearning program, of which 73 people responded. In 2015, CIRCL plans to expand the survey to reach the broader spectrum of NSF-funded research falling under the Cyberlearning theme. The survey covered a variety of topics, including project focus/participants, approaches to research, product development/dissemination, and opportunities to strengthen the portfolio.

Project Disciplines

Survey respondents were asked to select all of the disciplines that their projects addressed from a list of six disciplines (see Figure 3).

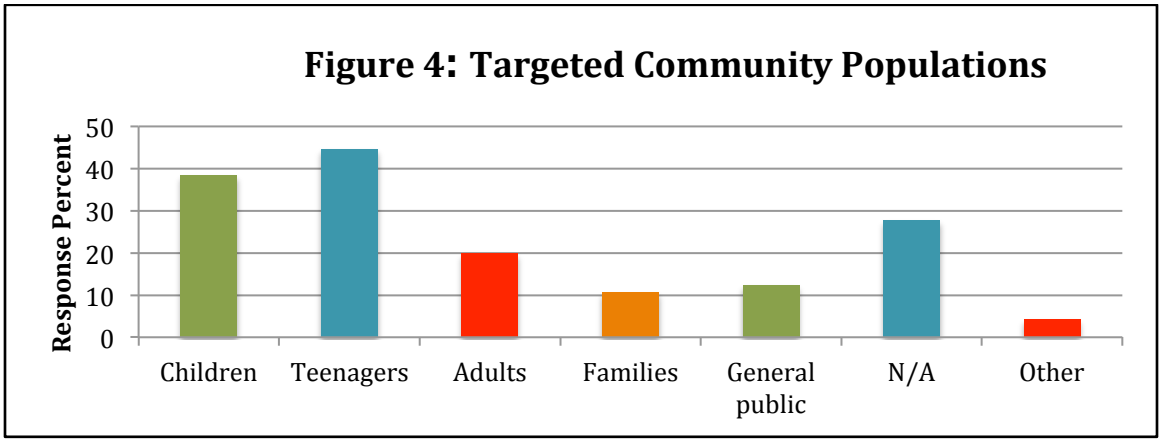


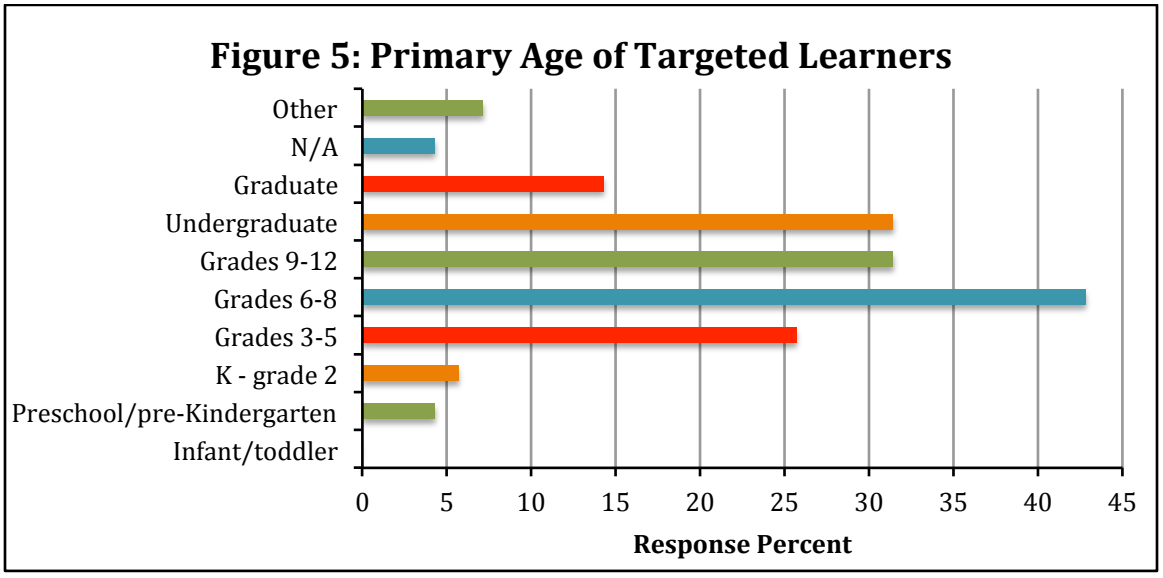
- Science was the most often chosen (53%). Computer and information science was chosen second most often (38%).
- Statistical methods and research design was the least often chosen (19%).

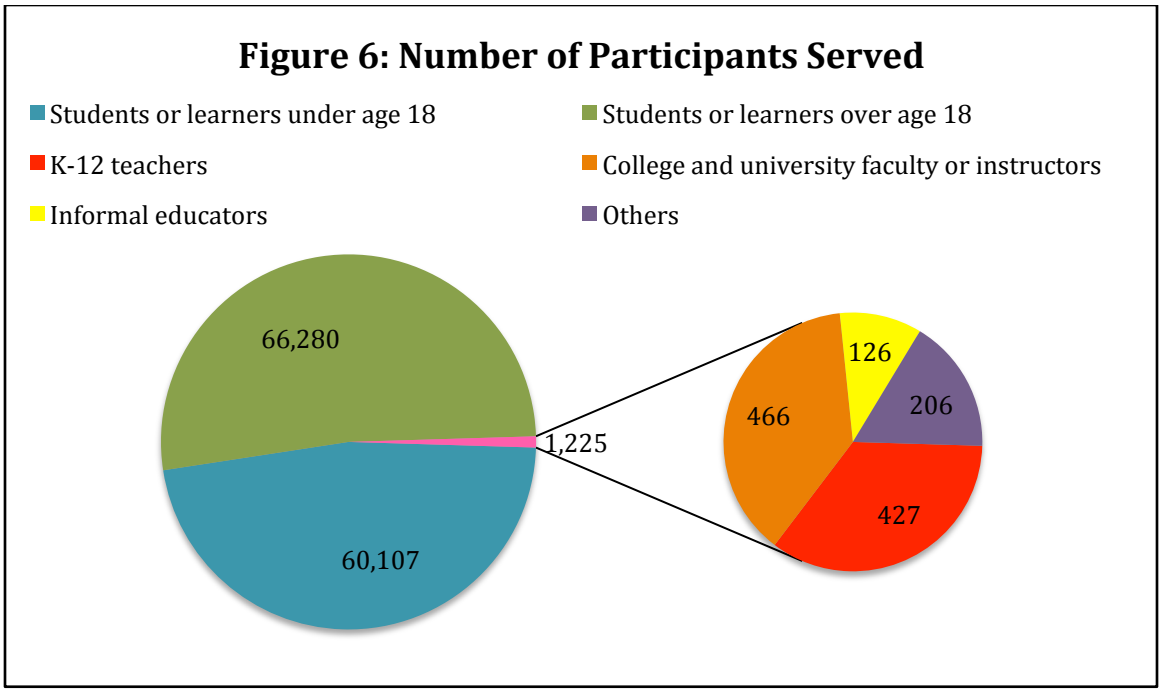
Targeted Demographics of Projects

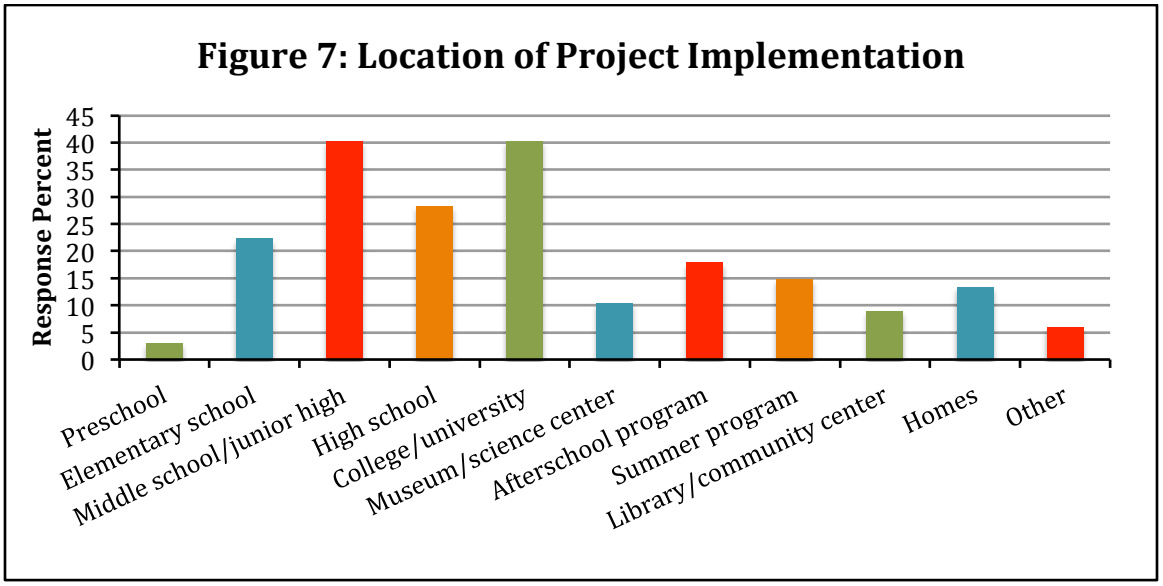
[3] The Center for Innovative Research in Cyberlearning (CIRCL) is an NSF-funded support program for the broader Cyberlearning theme, in partnership with SRI International, Education Development Center, Inc., and the National Opinion Research Center (NORC) at the University of Chicago. CIRCL aims to broker collaborations across the field of cyberlearning, in addition to conducting portfolio management of current Cyberlearning-program funded and Cyberlearning-themed awards.

Projects were asked several questions regarding participant demographics including the age, educational level and number of participants served by their work (see Figures 4-7).









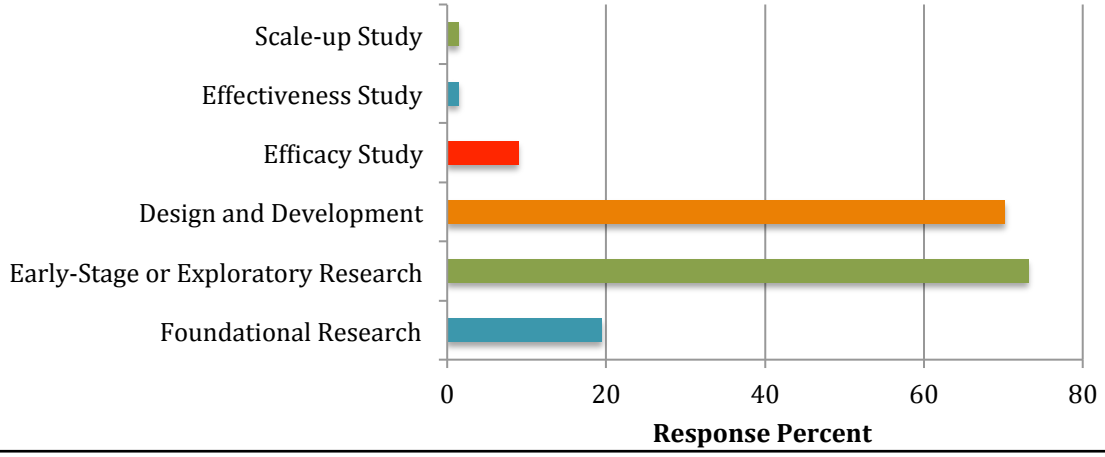
- Project designs most often targeted children (38%) and teenagers (45%).
- Projects are expected to reach large numbers of participants. Survey responses indicate that they expect to serve a total of over 127,000 participants through their projects. The overwhelming majority of project participants are learners of all ages.
- No projects addressed infants or toddlers.

- Project implementation was most commonly in middle schools (40%) or colleges/universities (40%), and targeting 6th-8th graders (43%).

Project Classification

The National Science Foundation (NSF) and the Institute of Education Sciences (IES) of the U.S. Department of Education jointly created the Common Guildines for Education Research and Development which classifies projects in six categories. Projects were asked to choose the category or categories that best classify their work (see Figure 8). Projects often spanned multiple categories.

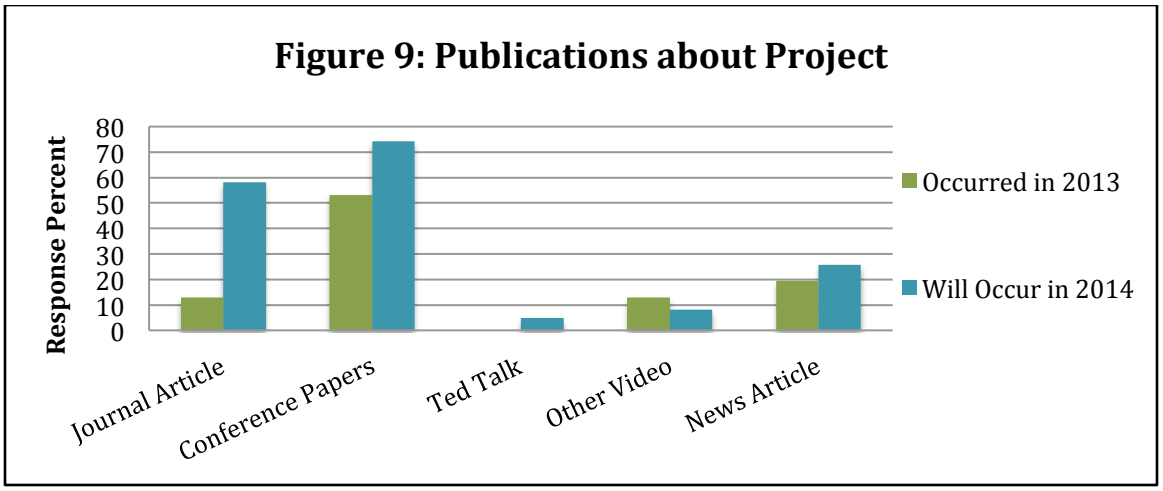
Figure 8: NSF Common Guidelines for Education Research and Development



- A large majority of projects were early-stage/exploratory research (73%) and design and development (70%).

Project Dissemination

Projects were asked to provide information on the mediums they use to discuss and disseminate their work, including forms of social media and forms of publication regarding their work that occured in 2013 or will occur in 2014 (see Figure 9).



- Over half (53%) published a conference paper in 2013, and 74% plan to do so in 2014. 13% published a journal article in 2013 and 58% plan to in 2014. Three respondents (5%) even plan to give a Ted talk in 2014.

Product Development

Projects were asked to choose the types of products that have resulted from their work in 10 different categories. At least 292 products are in some stage of development including at least 31 phone/tablet applications, 44 products in online services, and 30 desktop applications.