App AUTHORS

Dr. Deborah Stevenson, Dr. Kate McDowell, and Dr. Rachel Magee
School of Information Sciences, University of Illinois at Urbana-Champaign

School of Information Sciences
The iSchool at Illinois

Offering technology, tools, and skills...

...so that young people can represent themselves in apps...

...and share their creations with their communities.

Introduction

- This multi-year grant project focuses on hands-on app creation as a way to encourage STEM involvement among young learners from diverse backgrounds.
- The iSchool at Illinois partners with schools and libraries across the country to develop a curriculum for children aged 8-12.
- Through this project, children develop their own apps and share them with others, highlighting their achievements and learning about others' as well.

Aim

As a result of this project:
1. Librarians in public and school libraries will have tools to teach children computational literacy through app design.
2. Young people will be empowered to represent themselves in apps and use technology to solve problems.
3. Peers will work collaboratively to mentor each other and share their creations.

WE NEED DIVERSE CODERS

Only 18% of computer science bachelor's degree holders are women.

Women make up only 25% of the professionals in computer and mathematical sciences.

African Americans, Latinos, and Native Americans/Alaska Natives constitute 13% of the engineering degree holders in 2011

Process

October 2015-September 2018

Year one:
- Software selection, confer regularly with partner
- Pilot curriculum at Champaign School District
- Pilot curriculum at Douglass Branch Library
- Finalize curriculum

Year two:
- Technology troubleshooting
- Workshops to train on-site leaders
- Implement revised curriculum in school and public libraries

Year three:
- Meet with partner sites
- Train librarians at new sites
- Implement curriculum at new sites
- Evaluate school and public library programs

WHY APPS?

Young people who think STEM subjects are too hard will readily play a game on a tablet.

A survey by Harris Poll on behalf of Pearson indicates that young people find tablets highly engaging and strongly support their greater educational use.
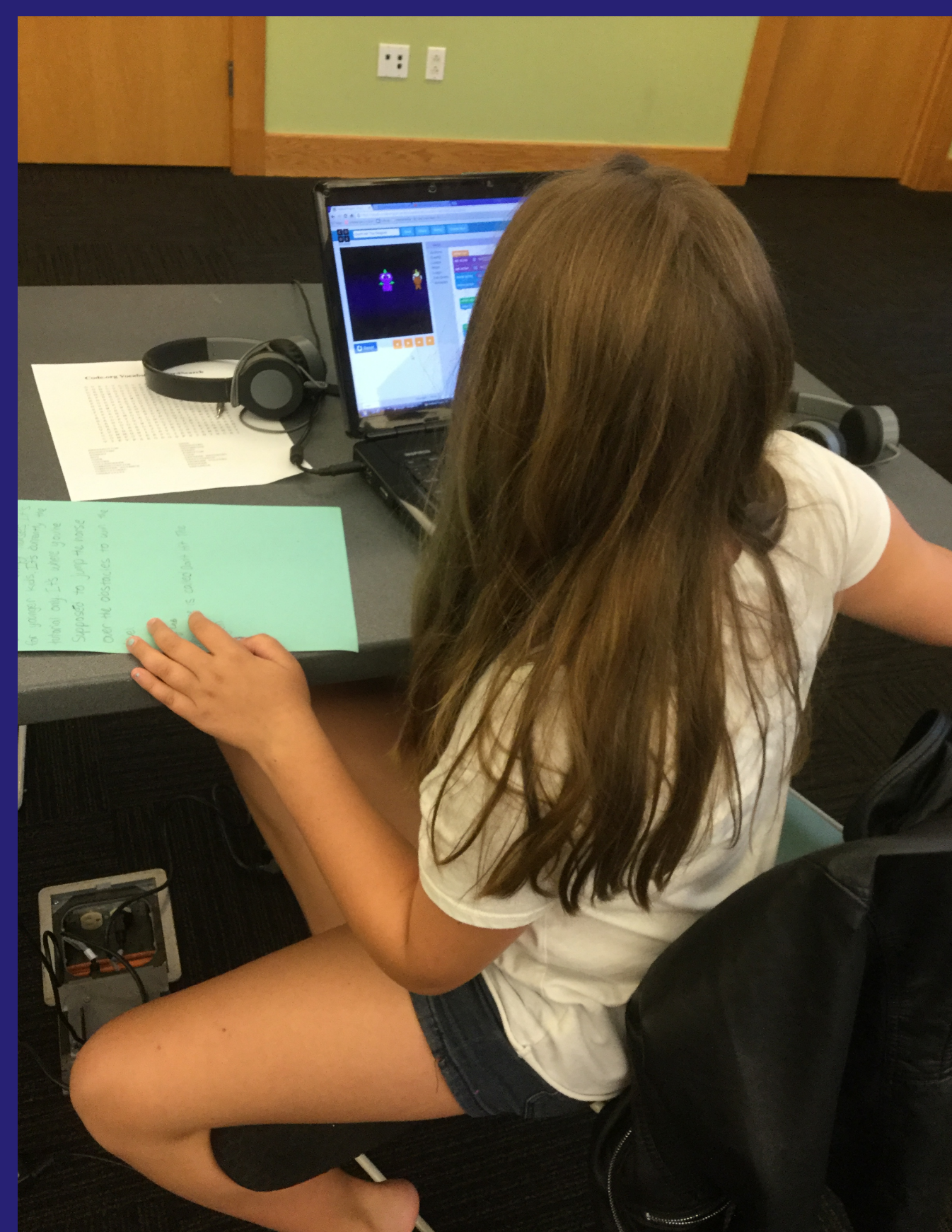
Here one participant codes her idea for an interactive game: Jumpy Horses.

Kids use video tutorials, collaborative work, and unplugged exercises to practice coding fundamentals.
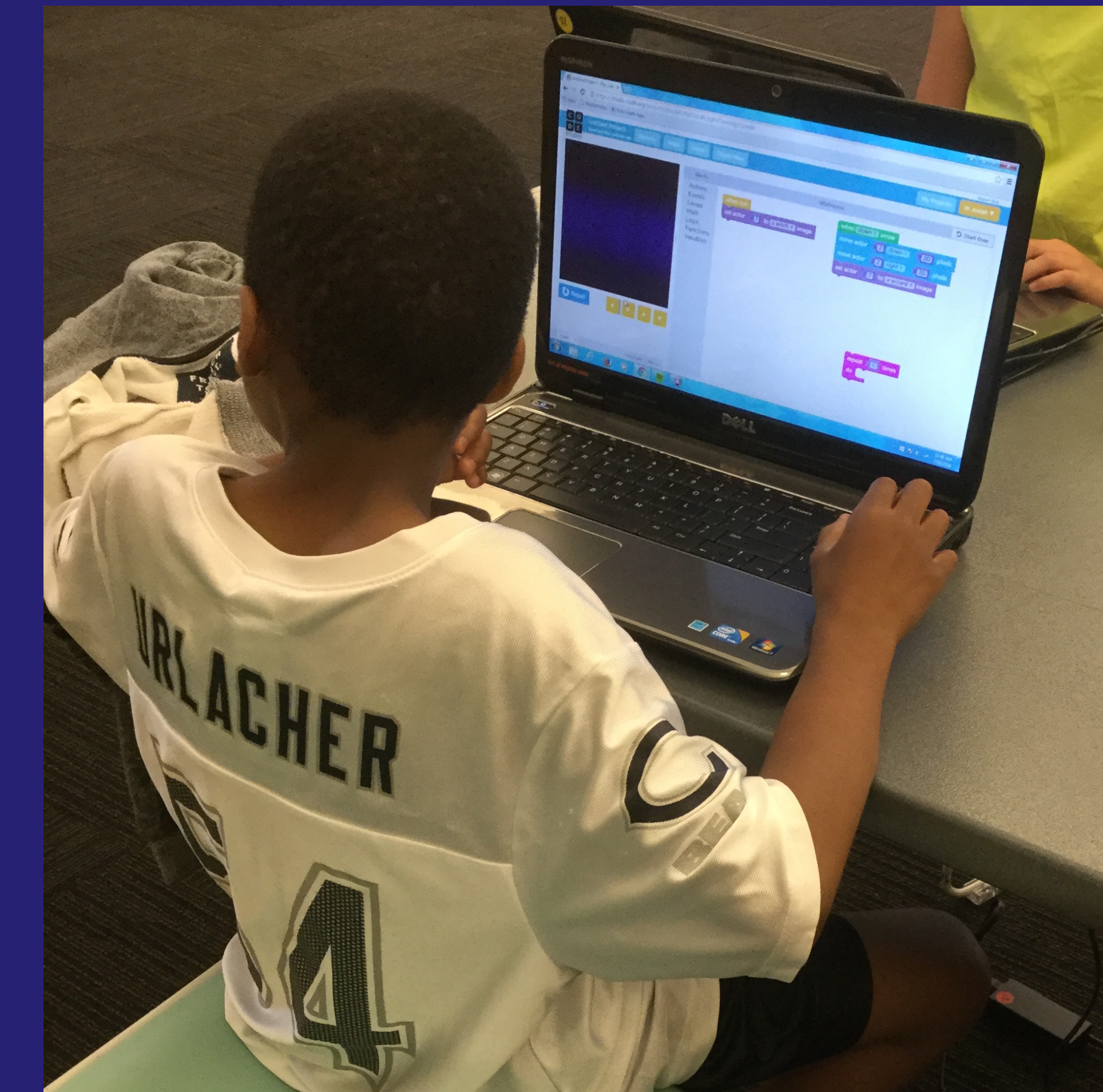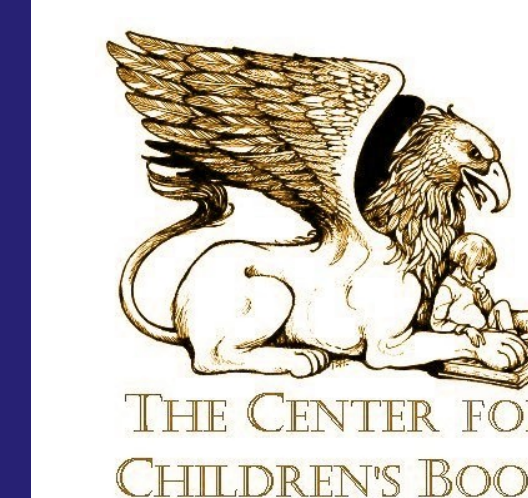
1 TECHNOLOGY

Participants use App Lab from Code.org to create basic apps.

Kids learn coding fundamentals through either block or text coding.

The design process is heavily emphasized as coders design, test, and redesign their creations.

2 REPRESENTATION

This programming invites all young people, especially those with little or no coding experience, low exposure to STEM, or little access to technology.

We will prioritize schools and libraries in areas with a significantly minority or underserved population.

3 SHARING

I've made an app... what now?

App Lab allows users to share their apps with friends via Facebook, Twitter, or text message.

Designing and coding apps is only the first step.

Apps are meant to be shared, tested, critiqued, refined, and used.

App Authors encourages young people to be lifelong coders and to create apps that solve problems.

At our first public library site, many participants came to Kids Create Apps sessions three days a week for six weeks. Others dropped in occasionally.

At our first school library site, kids signed up for Tech Time programming and attended once a week for six weeks.

Acknowledgments

THE CENTER FOR CHILDREN'S BOOKS

INSTITUTE of Museum and Library SERVICES

ILLINOIS

References
Hoffman, M. (n.d.). "Computer Science for Minorities." Computer Science Online. Retrieved from http://www.computerscienceonline.org/cs-programs-for-minorities/

National Science Foundation. Digest 2015. Retrieved from http://www.nsf.gov/statistics/2015/nsf15311/digest/
Pearson. (2014). "New Study Reveals U.S. Students Believe Tablets Are Game Changers in Learning and Student Engagement." Retrieved from http://www.pearsoned.com/news/new-study-reveals-u-s-students-believe-tablets-are-game-changers-in-learning-and-student-engagement/