Playing to Learn:

An evaluation of the participation of upper elementary and
middle school students in Missouri recreational computer lab programs.

Missouri County Map

Legend

★ 4-H/DESE project sites

● Additional sites using 4-H/DESE model

Carol Benesh

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"The purpose of the program is to provide kids with a safe place to be after school and to expose them to new and different things like computers and technology— an education outlet during non-school hours."

Partnership with 4-H/DESE

"4-H provided computers and educational software to start up the after-school program."
—Program director and middle school teacher

Most of the after-school computer programs would not have started without the encouragement, support, and resources of the 4-H/DESE project. With funding from DESE, 4-H provided training, software, and consultation. Local 4-H staff often helped staff the programs or used the DESE grant to provide funding for staff. 4-H provided computers to two sites and helped with computer upgrades in others.

Missouri Department of
Elementary and Secondary Education

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OUTREACH & EXTENSION
UNIVERSITY OF MISSOURI
COLUMBIA

EXECUTIVE SUMMARY

Introduction

"The past two decades have seen an ongoing rise in the number of children unsupervised and uncared for in the after-school hours. Currently, although approximately 1.7 billion children in the United States attend extended day programs, the needs far exceed present availability and especially impact economically disadvantaged and educationally at-risk children" (Taub, 1999). Research indicates that during the out-of-school hours unsupervised children are at significantly higher risk for truancy, stress, earning poor grades, early experimentation with sex, and substance abuse (U.S. Department of Education and U.S. Department of Justice, 1998). After-school care can provide more than just a safe environment for children. Such programs can provide opportunities for children to develop socially, academically, physically, and cognitively.

After-school technology education is one method for providing these opportunities. According to the U. S. Department of Education 21st Century Community Learning Centers program, Americans want technology in their children's schools—now. Seventy four percent of respondents to one survey agreed that computers improve the quality of education. Parents also want their children to have technology opportunities in their school–based after-school programs. In a 1997 survey of parents who had children enrolled in after-school programs, 95 percent believed their child would benefit from an after-school program that included computer technology classes (U. S. Department of Education, 1999).

The 4-H/DESE project in Missouri is an after-school program located in several school computer labs that provides technology opportunities to upper elementary and middle school students during out-of-school hours. Because participating students self-select educational software for their computer activities, this after-school programming model is considered recreational. Assistance to the students comes from computer lab staff members, older students, and teachers who visit the lab. The Department of Elementary and Secondary Education (DESE) commissioned an Idaho 4-H specialist to conduct this evaluation to understand what happens when upper elementary and middle school students participate in such a program.

Data Collection

Data were collected from 16 school districts across Missouri between February and June, 2001. The evaluator visited the state monthly for one- to two-week visits in after-school computer lab programs. Data, collected from 25 of the 87 computer lab sites in Missouri, were gathered through limited surveys, in-depth interviews, observations, and examination of source documents. Site directors, students, computer lab staff, principals, teachers, other school staff members, parents, and Extension educators participated in the study.

Discussion

Results of this evaluation suggest that upper elementary and middle school students who participate in the Missouri recreational computer lab programs will make self-directed choices, be cooperative, collaborative, and

"We are past the day when teachers are the experts on everything and know everything. Kids who spend a lot of time on the computer, even if it's games, can teach. They can teach peers, they can teach the teacher, and that can be a resource for the teacher."

"For many students this is the only way they can learn about this technology."
—Site director and middle school teacher

"Software makes it fun for kids to learn and they don't realize they're really learning. It's really good for them, but they're learning while they're playing."
—Site director and media specialist

"Originally, the designed purpose of the computer lab program was to teach students more about local government. We found by going through and teaching kids how to develop cities and models they actually learn how cities operate. They learn about how local, city, county and municipal government runs and operates. The program culminated into a display where the kids provided basically a mock up city."
—Eighth grade social studies teacher and lab instructor

"One boy played Flight Simulator for several weeks and he was able to fly the planes. He said that the next time he was on an airplane he would have a better idea of the captain's procedures. He said that made him less tense about flying."
—Lab director and middle school teacher

"The group of boys that we have in our computer lab is the most competitive group of 4th grade boys I've ever seen. When they're on the playground and they're playing a game they're really competitive. Then you see them in the computer lab and they're all getting along and all working toward the same thing. It's kind of a different side to things. Instead of always being at each other or trying to beat one another, they're working together to beat the whole game."
—Lab Staff and 5th grade teacher

helpful. They will negotiate differences and solve problems, and they will instruct other students and adults on appropriate uses of the computer, Internet, and educational software.

"The reason students participate is simple. Make learning fun and young people will be attracted to it."
—Middle school principal

The findings indicate:

❖ Many of the students who participate in these programs do not have other access to technology.

❖ Play-based computer activities offer students opportunities to learn academic and social skills.

❖ Lab personnel and visiting teachers report that these academic and social skills transfer to outside interactions and classroom learning.

❖ Students are exposed to a range of educational subjects that moved beyond those they were exposed to in the classroom.

❖ Students demonstrate increasing fluency with computer skills and willingly shared their expertise with other students and adults.

❖ Students demonstrate willingness to share, take turns, and collaborate with other students.

❖ Students and teachers reverse traditional teaching/learning roles.

Conclusion

Upper elementary and middle school students who participate in the Missouri 4-H/DESE recreational after-school computer labs have educational opportunities that extend beyond the school day and learn academic and social skills with application in and outside the classroom. Students and teachers involved in these programs break out of traditional hierarchies of teaching and learning and learn together. Participating students build relationships with peers who might not ordinarily be in their circle of friends and collaborate in their learning experiences in the lab.

Taub, L. (1999). *Mixing education, play and technology in the after-school hours to address the current crisis in out-of-school care of K-12 youth.* Draft Report. UC Links. Graduate School of Education University of California, Berkeley. www.ced.appstate.edu/projects/5dClhse/publications/tech.html

U.S. Department of Education. (Summer 1999). *21st Century community learning centers: Bringing education to after-school programs.* www.ed.gob/pubs/After-School-Programs/Technology-Programs.htm Program Director: Linda Roberts, Office of Educational Technology Website: http://www.ed.gov/Technology/

U. S. Department of Education & U. S. Department of Justice. (1998). *Safe and smart: Making after-school hours work for kids.*