Creative Use of Technology with School-Agers

by Ina Lynn McClain

Megan and Rachel are industriously taking apart a computer. They have tested the hard drive of the computer they are now disassembling to find out why it does not work. The case comes off the computer and they locate the hard drive and examine how they will remove this part of the computer. They formulate a plan. With tools in hands, they chat about their task as they proceed to remove the hard drive. They are only aware of the others around them when they need information from an older youth or adult in the group. Once the hard drive is removed, they begin to do the same operation on another computer. Their goal is to swap the hard drives. They extricate the hard drive from the second computer, slip it into place in the first, and secure it. Eagerly, they put the case on the computer and test the hard drive. They squeal with delight when it works.

Megan and Rachel (nine and ten years old) are part of a 4-H Hardware Project. This project helps demystify the machine for youth involved by allowing them to take surplus computers and physically upgrade the hard drive and/or add memory to the machine to handle their favorite software. It also provides a mechanism for putting computers into communities, providing youth and families with more access to computers. Bill Past,

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educational technologist with the Missouri 4-H Youth Development Program, states: "This project helps youth who do not have computers at home have *more opportunities to learn* with and about computers. Most elementary and middle school-aged youth only have one to two hours per week working with computers during school time. Increasing access to computers during out of school times allows youth to spend recreational time learning about math, science, geography, and other academic topics."

Non-Formal Educational Settings

The purpose of this article is to provide examples of creative use of technology programs are using with school-age youth in non-formal educational settings — after-school care; computer labs at community centers; or other youth group settings such as 4-H, Scouts, or Campfire Boys and Girls. Such settings provide opportunities for youth to participate voluntarily and to follow their interests. As a result, a very positive interaction occurs among the youth, staff, and volunteers who become a community of learners.

Increasing Access to Computer Technology

Another twist on increasing access to computers is to open computer labs located in the schools during the out of school hours. Missouri 4-H Youth Development Programs and the Missouri Department of Elementary and Secondary Education are working together to help middle schools create community learning centers. This is the same concept of the *21st Century Learning Centers* of the United States Department of Education. "There are three critical elements to creating a successful computer lab experience for school-age youth," states Alison Copeland, the project director with Missouri 4-H. "Easy access to the computer lab is essential for youth and families. Quality software (see <www.nnst.org> for a *Software Selection Guide* published by the National Network for Science and Technology of the Cooperative Extension System) and educational and technical support for both the hardware and software keeps problems to a minimum and enhances the learning experiences for the youth and family members."

Enhancing the Learning Experience

At Fort Leavenworth, Kansas, the School-Age Services (SAS) program theme for last year's summer program was *The Oregon Trail*. The trek of settler families taking the Oregon Trail West began at Fort Leavenworth, Kansas. Learning experiences for the youth integrated a variety of content areas —- food preparation and safety through campfire cooking, dramatic play, games and other recreation, and hiking the portion of the trail on the Army installation. The staff used the computer lab in the SAS program to enhance the learning experiences for the youth.

The software, *The Oregon Trail* by MECC, helped the youth build a context for other learning experiences. The youth developed geographical concepts of where the trail began at St. Joseph, Missouri, and the end of the trail at Willamette Valley, Oregon. The software allowed the students to make choices about provisions to purchase for the journey and the software provided feedback as to whether these choices were wise or not. Weather and illness variables plagued the youth in the simulation as they did the actual pioneers so many years ago.

Another software package titled *StoryBook Weaver*, also by MECC, allowed the youth participants to chronicle their Oregon Trail experiences. A group of girls were intrigued by an authentic diary at a local museum of a young girl chronicling her experience on the trail in which she described her moral dilemma of who should take the last of the quinine medicine when she and her younger sister were both ill. Having chronicled their own experiences on the trail, the girls were interested in reading an authentic diary. The subject of the diary entry provided the staff and youth an opportunity to dialogue about the moral dilemma facing the girls and examine what they might have or have not done given the same situation.

Creating Supportive Connections

The United States Departments of Agriculture (Family, 4-H, and Nutrition) and Army created a collaboration called the Army/USDA School-Age and Teen (ASA&T) Project to enhance the youth development experiences for the youth on Army installations. Computer labs accessible to school-age children and teens are an integral part of the project. This project created a *Computer Lab Operations Manual* for School-Age and Youth Services staff but is available to the public at <www.USDA-Army-asat.org>. Barbara Brown, school-age coordinator, says: "This manual instructs staff on how to create computer labs that foster positive youth development. A list of approved software is included in this manual as well as a tool for evaluating software."

Youth on installations created home pages describing activities, opportunities, schools, and other topics of

interest to youth. As youth move from post to post, they can learn about their new location prior to arriving by browsing these home pages. The technological link allows youth and staff to proactively reach out to the youth prior to and at arrival to welcome them to the community. This helps the families make more positive transitions to a new location.

Taking Time to Explore the Technology

An eclectic collection of sounds were emanating from the computer lab. Animal sounds could be heard from some machines, music from others. The whoosh of jets came from the machines with aerospace software. Who was creating all this noise? — participants at the National School-Age Child Care Alliance annual conference. Participants spent an average of an hour and a half at the lab. Many indicated that this was the first time they had the opportunity to explore the software.

Researchers emphasize the importance of hands-on experience to create an in-depth knowledge of programs (Wright, 1994). Such knowledge would enable the educator to use the program to enhance the educational program. Providing youth with open-ended projects rather than free exploration was found to increase the interest of children to actively seek multiple ways to solve the task (Lemerise, 1993).

And the Children Shall Lead

Another school of thought to overcome barriers to use technology, educational software, and the World Wide Web is to develop a community of learners. The youth participants become the teachers of the adults and other youth. The adults become collaborators with the students. In this environment, youth are not sitting alone at the computers under the silent watchful eye of a teacher-manager. The educator is interactive, helping youth interpret and create meaning out of the information.

Beyond a Print-Base Paradigm

To effectively create this community learning environment of youth and adults, the emphasis needs to be taken off the technology and shifted to the information it accesses for the youth, educators, and parents. Much as we teach children to read and write to access information, we need to be thinking about using computers and the Web resources as tools of access. This is thinking beyond a print-based paradigm for communication. Information and communication technology should become as integral a part of our lifestyle as a means of meaningful inquiry as a dictionary, encyclopedia, or calculator.

References

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