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Abstract: Cyber Town is a technology based after-school program that concentrates on reading and technology literacy. The program provides at-risk minority youth a safe environment where they learn skills that will make them competitive in the digital age. Qualitative and quantitative data are collected on all after-school program participants enabling program staff with the ability to individualize technology aided instruction. Youth are instructed at appropriate instructional levels these levels are determined through reading level assessment software programs, teacher recommendations, and reading scores. The program provides a model others can utilize in operating similar computer based programs. It illustrates that when working with youth, educators may discover deeper problems than originally anticipated and adaptations must be made to meet the needs of those young people.

Overview

Cyber Town at the Woodrow Wilson Community Center is an after-school program that was established to provide youth with technology skills and bridge the digital divide for rural youth. When the project began in 2002, it targeted youth who lived at the Crisfield, Maryland Housing Authority who had limited access to technology. At that time the local school system did not have Internet connection and the local public library had only two Internet-connected computers available for public use. The project was introduced as a prevention program because concerned community members such as teachers, parents, youth, and business leaders did not want young people in their community to fall behind in our computer driven society.

When Cyber Town initially opened, the primary focus was technology education. This focal point was based on a community assessment completed by Maryland Cooperative Extension for the PowerUp grant. According to the National Telecommunications and Information Administration (2000) report, "Urban households with incomes of $75,000.00 or higher are more than 20 times likely to have Internet access than rural households at the lowest income levels." A survey

conducted by Maryland Cooperative Extension on youth who lived at the Crisfield Housing Authority indicated that $\geq$ 1.3%, (n=47, SD=1) had access to the Internet.

Studies such as those conducted by Schauber (2002) showed many young people across the nation were becoming experts utilizing technology emphasizing the need for greater access to technology education. In Somerset County in 2002, many youth had never touched a computer. This was an alarming fact and had to be addressed in order to allow Somerset County youth to be competitive in the new age of technology.

Needs Assessment

An initial needs assessment was performed in coordination with PowerUp to assess the community's need for technology. This assessment was completed through community asset mapping, focus group meetings, meetings with local leaders, and surveys of community businesses, members, and leaders. The assessment revealed that the number of youth who had a safe after-school environment and exposure to technology was marginal. There were extremely low numbers of safe, structured after-school programs available to youth in Crisfield. Computer training was desperately needed by youth in this community. Youth focus groups revealed that young people wanted to learn simple word processing skills and how to use the Internet. The results of the assessment led the PowerUp organization to grant 20 computers and several educational software programs to our site. Furthermore, the recommendation was made that the Somerset County Educational Intervention Team be established.

Program Design

To organize the after-school effort, the Somerset County Educational Intervention Team was established. This team included business owners, teachers, youth, parents, community agency representatives, and Maryland Cooperative Extension (MCE) faculty and staff. The team developed plans to expose youth to technology and teach them computer skills. They believed this was the answer to "fixing" the technology gap in Crisfield. The delivery method selected was to establish an after-school program. This decision was based on the fact that limited after-school programming was available to community residents. The team also wanted to ensure that the youth participated in a structured program that had a focused, concentrated curriculum and would allow frequent daily contact with a designated group of youth.

Once the after-school program was established, educators and program assistants began to record qualitative data on the youth participating in the program. The qualitative reports indicated that youth were not learning to use the computers as quickly as expected. The members of the Somerset County Educational Intervention Team met and reviewed the findings and discovered that many youth who attended the program had poor reading skills (Johnson, 2002). According to Tompkins and Hoskisson (1991), a student's ability to read directly impacts his or her overall educational performance. Students with limited literacy skills face difficulty in all subject areas. Based on this research, the Somerset County Educational Intervention Team then placed an intense emphasis on building the youth's reading ability.

The team reviewed the research on reading to develop a concrete educational plan utilizing computers for instruction. Research supported the use of computers to teach reading and using computers would help bridge the technology gap that rural youth were facing. Castellani and Jeff (2001) state, "The critical reading processes that computer technology can support include:

- comprehension (annotating, linking ideas, etc.)
- idea generation (brainstorming)
- analysis (articulating and classifying positions reacting to others' comments)
- reflection (using an electronic journal to develop metacognitive awareness--reflecting on topics, tasks, learning strategies, etc.)
- composition (writing papers)
- communication (electronic mail)."

Computers are successful tools in teaching reading because they provide for a high level of interactivity, which means that there is two-way communication between the user and the computer (Meyer & Rose, 2000). Interactivity can be extended beyond one student using one computer to many students using many computers, such as with electronic journals which can be a method or a forum used to discuss student readings and share intellectual thoughts. A high level of interactivity and sharing thoughts with other students encourages students to become more actively involved with what they are reading and builds comprehension skills (Leu, 2000).

By combining research-based reading instruction with technology education, the design of Cyber Town crystallized. Cyber Town at the Wilson Center is currently the educational hub of a primarily African-American community, providing a safe and productive learning center for the families living in Woodrow Wilson Housing Authority. Its purpose is to help youth: Increase their computer literacy skills, strengthen their ability to complete homework, build reading comprehension, and learn to use e-mail, the Internet, and the World Wide Web. Cyber Town at the Wilson Center after school program is directed towards:

- Youth who live in the Crisfield Housing Authority
- Members of the Cyber Town 4-H Club, youth who attend the Woodrow Wilson Community Center after-school program
- Fifty four youth (approx.), ages 8-12
- Race – 85% African American, 10% White, 5% Hispanic

The computer lab is open daily as an after-school program site for children to gain instruction in reading, help with homework, and assistance with research. The children attend the lab from 3:30 pm to 6:30 pm. The hours of operation reflect the needs of the user. Recreational options such as interactive computer games, e-pals, and basketball are provided. The participants' first responsibility is to complete their homework. When the youth arrive, their homework agenda is presented to the computer lab program assistant who first provides the youth with homework assistance and then checks their work for accuracy. Once youth have completed their homework, they are provided with individualized computer-aided instruction to build their reading comprehension skills.

The computer software programs allow students to read stories and answers questions about what they have learned. Computer-generated prompts analyze the children's reading level and give them challenging reading scenarios. The educator and program assistants work with the students to provide additional support in reading and writing. Instruction is closely monitored for each child. Participants are encouraged and taught how to use word processing to write

stories and keep electronic journals. The educator and program assistant have taught the children to utilize e-mail and often write the youth messages of encouragement to help build self-esteem. The lab also provides a lending library for the children, invites community leaders to read stories to the children, and promotes family reading events.

Evaluation

The Cyber Town evaluation design incorporates several methodologies to assess program process and capacity. Student outcomes are evaluated using:1) teacher assessment; 2) report cards; 3) attendance records; 4) GPA; 5) software assessment. The after-school program is evaluated utilizing the following methods: 1) focus groups; 2) participant surveys; 3) comment cards. The evaluation includes interviews with key stakeholders, the after-school program coordinator, referral teachers, as well as information from focus groups. Cyber Town was evaluated using a formative evaluation using a pre-post test methodology. Students filled out a pre-program evaluation at the beginning of the year and then completed a post-program evaluation at the end of the program. The program impacts were evaluated through a pre and post program entry test.

The students who participated in the Cyber Town program reported a sense of accomplishment and strong confidence in their ability to be successful in school. The students commented that they felt they could read better, had stronger communication skills, and actually liked attending school more they were not afraid of the unknown as they had felt in the past. They believed that these feeling were a direct result of their participation in the after-school program.

The success of the after-school site's ability to increase reading comprehension was measured using a pre- and post- entry test. As each individual entered the lab they were given an age appropriate reading test. After one year of treatment the group was then given an age appropriate post reading test. Descriptive statistics reveal that the pre-test scores had a mean of 52% (SD=22) demonstrating that the test scores had a wide variance but overall were low. The highest score that could be achieved was 100%. Overall the youth did not perform well on the pre-test. After participating in the Cyber Town after-school program, the youth were tested and the mean score was 73% (SD=8). This demonstrated that the youth scored much higher on the test. Their scores were a good deal closer to the mean illustrating that more students scored nearer to the average. The percentages also showed that overall scores increased by 21%.

Participants in the Cyber Town program were reported to have fewer school office referrals then youth who did not attend. This data was recorded and reported by the principal of the local elementary school. In addition to better behavior, teachers reported that youth who attended the Cyber Town after-school program turned in complete and accurate homework. The final report cards of youth who participated in the program showed a continual increase in student GPA's over the nine month grading period.

Cyber Town Descriptive Statistics

Pre-test		*Post-test*	
Mean	52.14	Mean	72.67
Standard Error	3.17	Standard Error	1.98
Median	56	Median	76
Mode	56	Mode	77
Standard Deviation	22.19	Standard Deviation	6.88
Range	78	Range	56
Minimum	9	Minimum	43
Maximum	87	Maximum	99
Sum	2555	Sum	3561

Sustainability

The program is community focused and develops leadership skills in participants by teaching skills to implement change. Darling and Randel (1999) determined a healthy community has three dimensions:

- residents hold a common vision
- leaders identify and resolve issues
- organizations adapt to an ever-changing environment.

The long term sustainability of this program is promising because leadership is being developed in the local community members and they are being taught how to seek funding and report success to stakeholders. The Somerset County Educational Team is committed to providing support and sustaining the program.

Conclusion – Replication

Across the nation, safe educational after-school programming is needed by families to support working parents. The Cyber Town project has been successful and seeks to continually improve. It has provided a wealth of knowledge on community strengthening, technology literacy, and building reading comprehension. This program is important for other professionals because it is a practical demonstration of the national goals of the 4-H youth development program which include: developing volunteers, strengthening and expanding the 4-H club program, and outreach to underserved and under-represented youth. After-school programming is greatly needed by working families across the nation. This program provides a model others can utilize in operating similar computer based programs. It illustrates that when working with youth, educators may discover deeper problems then originally anticipated and adaptations must be made to meet the needs of those young people.

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