DOCUMENT RESUME

ED 425 015 PS 027 201

AUTHOR Swanson, Josephine A.; Mead, June P.; Haugan, Heidi L.
TITLE Using Internet Resources To Strengthen Community Programs and Collaborations for Children, Youth, and Families At Risk.
PUB DATE 1998-12-00
NOTE 13p.; In: Proceedings of the Families, Technology, and Education Conference (Chicago, IL, October 30-November 1, 1997); see PS 027 175.
PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Community Programs; *Computer Literacy; *Computer Mediated Communication; Computer Networks; *Computer Uses in Education; Electronic Mail; *Extension Education; Information Seeking; *Internet; Partnerships in Education; Training
IDENTIFIERS New York; Technology Integration

ABSTRACT

A New York State Cornell Cooperative Extension project for children, youth, and families is implementing electronic connectivity or Internet access to support the development of computer literacy among staff and program participants and to promote positive program outcomes in communities at risk. Reducing Risks and Increasing Capacity (RRIC) is a 5-year annually renewable Cooperative State Research Education and Extension Service (CSREES) and U.S. Department of Agriculture State Strengthening Project now in its fourth year of funding. The project supports eight targeted New York State community programs located in Chemung, Jefferson, Monroe, Oneida, Onondaga, Orange, St. Lawrence, and Tompkins counties; each program is led by a professional Extension educator. Through connectivity, volunteer and salaried educators can locate educational and other program and fund development resources. Internet access supports communication among multiple sites in a community project, among the eight New York State RRIC-targeted community programs, and across all parts of the RRIC project. Electronic mail and listservs are used for communication and information sharing. Connectivity allows all sites and the state project staff to interact on sustainability issues. The project has ongoing formative and summative evaluation strategies in place, including evaluation of Internet use. The RRIC project strives to tap the potential of the Internet to strengthen program outcomes and to integrate technology, wherever possible, within the educational activities conducted. A baseline and follow-up study were conducted on Internet use. Data on expectations of educators, volunteers, and collaborators for use of the Internet were gathered. Preliminary findings from the Year 1 follow-up survey include large gains in use of the Web for program support and increased project communication. Experiences in designing and supporting the computer applications of the project are detailed. (LPP)

Using Internet Resources to Strengthen Community Programs and Collaborations for Children, Youth, and Families At Risk

Josephine A. Swanson, June P. Mead, & Heidi L. Haugen ■

Abstract

A New York State Cornell Cooperative Extension project for children, youth, and families is implementing electronic connectivity or Internet access to support the development of computer literacy among staff and program participants and to promote positive program outcomes in communities at risk. This paper is a progress report on the connectivity initiative. Reducing Risks and Increasing Capacity (RRIC) is a 5-year annually renewable Cooperative State Research Education and Extension Service (CSREES) and U.S. Department of Agriculture State Strengthening Project now in its fourth year of funding. The project supports eight targeted New York State community programs located in Chemung, Jefferson, Monroe, Oneida, Onondaga, Orange, St. Lawrence, and Tompkins counties; each program is led by a professional Extension educator. Through connectivity, volunteer and salaried educators can locate educational and other program and fund development resources. Internet access supports communication among multiple sites in a community project, among the eight New York State RRIC-targeted community programs, and across all parts of the RRIC project: community sites, the eight county community programs, and Cornell University. Electronic mail and listservs are used for communication and information sharing. Connectivity allows all sites and the state project staff to interact on sustainability issues. The project has ongoing formative and summative evaluation strategies in place, including evaluation of Internet use. The RRIC project strives to tap the potential of the Internet to strengthen program outcomes and to integrate technology, wherever possible, within the educational activities conducted. A baseline and a 1-year follow-up study were conducted on Internet use. Data on expectations of educators, volunteers, and collaborators for use of the Internet are reported. Preliminary results from the Year 1 follow-up survey include large gains in use of World Wide Web for program support and increased project communication. Experiences in designing and supporting the computer applications of the project are detailed.

■

Introduction

A New York State Cornell Cooperative Extension project for children, youth, and families is implementing electronic connectivity or Internet access to support the development of computer literacy among staff and program participants and to promote positive program outcomes in communities at risk. This paper is a progress report on the connectivity initiative. Guided by the vision of strong families, competent kids, and caring communities, the Reducing Risks and Increasing Capacity (RRIC) project strengthens the organizational and local capacity of the Cornell Cooperative Extension system and its collaborators as they address the needs and issues facing families and youth in high-risk environments. RRIC has been critical to building stronger families and greater parent effectiveness, in addition to developing and strengthening assets in eight New York State communities.

Project Description

RRIC is a 5-year annually renewable Cooperative State Research Education and Extension Service (CSREES) and U.S. Department of Agriculture (USDA) State Strengthening Project now in its fourth year of funding. The project supports RRIC-targeted New York State community programs

located in Chemung, Jefferson, Monroe, Oneida, Onondaga, Orange, St. Lawrence, and Tompkins counties; each program is led by a professional Extension educator. Communities use two program delivery models—the Master-Teacher or natural volunteer leader model and the family support or home visitor model to reach at-risk children, youth, and families.

Through connectivity, volunteer and salaried educators can locate educational and other program and fund development resources. Internet access supports communication among multiple sites in a community project, among the eight New York State RRIC-targeted community programs, and across all parts of the RRIC project: community sites, the eight county community programs, and Cornell University. Electronic mail and listservs are used for communication and information sharing. Connectivity allows all sites and the state project staff to interact on sustainability issues. The project has ongoing formative and summative evaluation strategies in place, including evaluation of Internet use. While computer literacy in itself is a noble goal, the RRIC project strives to tap the potential of the Internet to strengthen program outcomes and to integrate technology, wherever possible, within the educational activities conducted. The first year of connectivity has, by necessity, focused on installing hardware and software and on training in computer and Internet literacy. The project has just begun to realize the programmatic benefits of connectivity.

Computers in Extension Community Education Programs

Computer and Internet use trends in formal or classroom education and in informal or Extension community education programming are similar. There are increasing numbers of desktop computers, improved access to the Internet, and incremental integration of computer applications in educational programs. A content analysis of trends in educational technology between October 1994 and September 1995 (Plotnick, 1996) included findings related to computer availability and applications. The literature studied revealed pervasive availability of computers in formal education settings, networking as the fastest growing application, policy groups advocating for use of technology in schools, and demands for teacher computer literacy. Eisenberg and Johnson (1996) acknowledged a widespread use of computer technology in schools and identified recent encouraging signs that computers are becoming more integrated into content areas rather than being taught in isolation. Cooperative Extension educators also seek to use the power of computer technology in their work.

During a transformational leadership workshop for western states' Extension staff, participants considered ways to serve and educate clientele in today's complex educational arena (Laughlin & Schmidt, 1995). Technology, including Internet access for both educators and learners, was seen as being convenient, supporting personal responsibility for learning, providing large amounts of information, and allowing time-shifting where learners participate at a time of their own convenience. Extension staff also saw the potential for technology to improve the connection and involvement of research programs in community education. Challenges identified included the need for maintenance of technology-delivered programs, the time investment required of learners, possible participant resistance, and fear of technology. In 1992, Oregon's Cooperative Extension and the Sea Grant program provided networking technical assistance and education to the Ocean Policy Advisory Council (OPAC), enabling members to draft policy recommendations to manage that state's portion of the nation's territorial sea (DeYoung, Harris, & Larsen, 1995). OPAC members accessed information and communicated across time and place via the network. The project principals suggested that the design and implementation of this policy education "virtual community" effort could be applied to other Extension program areas, including work with families, children, and youth. Steps to ensure success must address both contemporary program or content information and materials as well as technological support. The OPAC project upgraded hardware, provided software where necessary, provided toll-free telephone access to the Internet, and included a staff member for training and technical assistance.

Extension leaders also are looking to the Internet and the World Wide Web (WWW) to leverage dwindling support for the many resource materials available to citizens. Indiana Extension published the *Childhood Safety and Health Resource Guide* on the WWW in April of 1995 (Freeman, Whitman, Tormoehlen, & Embleton, 1997). The publication, produced since 1990, is a compilation of educational materials and organizations for use by educators and volunteers in community programming. Initially, the WWW version received limited

use. Results of a 1996 survey of Indiana county Extension professionals found that the majority were simply unaware of the resource and planned to access it in the future. Existing high costs of Internet access were also seen as a barrier. With additional publicity and the increased Web presence of related Indiana Extension projects and programs, the resource guide was accessed 425 times between April 1996 and March 1997.

Goode and Elliott (1992) surveyed 476 state, area, and county Mississippi Extension specialists, educators, and secretaries to determine the involvement of staff in computer applications and their perceptions about responsibility for staff development related to technology. Personnel with the most education and computer experience saw individualized study as more desirable than those persons with less experience. Most specialists, individuals with state or regional program responsibilities, saw themselves as being accountable for staying current. The researchers recommended that supervisors encourage county educators and secretaries to take more responsibility for their computer competence and to participate in training. They also urged that training resources be provided during and after work hours for learning and practice. While not unique to programming using computer applications, these experiences point out the importance of including staff training and ongoing technical assistance and internal and external program marketing for Extension efforts. Program publicity must be developed for educators and their learner audiences that describes the programs and resources available through computer technology. Learners may also need support via "help" documentation and access to educators, either by telephone or in person, if needed.

Extension community projects such as RRIC are intended to build community and individual learners' capacities through educational experiences. According to Schuler (1994), Internet visionaries and community activists all over the world are joining forces to develop community-oriented electronic networks in order to advance social goals, encourage community involvement in decision making, provide access to social services, and provide economic opportunities to disadvantaged, at-risk populations. Schuler believes that in order for the Internet to realize its potential, it will be important for those interested in community empowerment to adhere to a set of, what he calls, "guiding principles." Schuler defines these principles in terms of equal access, service, democracy, world community, and a "humanely" defined use of technology for the future. In Baym's (1995) study of sustained participation in computer-mediated communications, there is an emergence of a sense of expanded communities, with enhanced forms of expression, communication, and interaction based on shared group purpose and the "like-minds" of the participants. Most educators recognize the value of learners and educators being able to navigate in a computer environment, while the meaning of computer literacy is variable. To be democratic and empowering, the community education program with computer applications should support meaningful learner involvement. Educators do have a responsibility to develop a program's scope and sequence, including programs supported by computer technology. In Extension program development, this development is best done in partnership with the community educators and collaborators who deliver the program and with the learners or participants themselves. By designing computer-assisted educational experiences around the needs of the learner, Extension staff can support interaction among learners in groups, expand communication across localities, and build communities' cohesion.

RRIC Connectivity Implementation

The one-time electronic connectivity component in RRIC Project Year 3 is designed to provide Internet access for county-based staff and youth and adult program participants. Funders sought to promote access to the latest electronic information and educational materials and to move Extension and the larger society from a distributive information system to a system of creating access to information for all people (Cooperative State Research Education and Extension Service [CSREES], 1995). Connectivity was implemented to support projects' access to the National Extension Children, Youth, and Family Network (CYFERNet), *http://www.cyfernet.org,* as well as access to resources of other agencies and organizations to support program success and sustainability. Twenty-four personal computers were purchased or upgraded for the RRIC project. Each community project has at least two computers, one in the county Extension office and one or more in the community at a collaborating agency's or organization's site. Collaborators agree to provide access to

the computers first for program use by educators and participants and then for use to support other agency work. In addition, there are funds for training and technical assistance.

An information and technology coordinator oversees and implements several training and communication strategies to help make connectivity work in the RRIC project. Extension staff held three training sessions for the RRIC Extension staff and community collaborators. An electronic connectivity newsletter (*Hot Lines from Heidi*) goes to all staff and collaborators to help people merge connectivity into their programs. An RRIC Web page serves as a storage and browsing site for individuals and also gives information about other sites. (URL: *http://www.cce.cornell.edu/youth/rric/rric.html*).

"Telephone Talk" is a monthly telephone conference providing RRIC partners with the chance to ask burning technical questions, discuss an Internet topic of interest, ask for help in searching for resources on a topic of interest, provide feedback to Extension staff at the state level, and generally feel more "connected" to others across the project sites. Other support via telephone (and e-mail) makes up a large part of the day-to-day support given to various people in the project. Finally, an electronic listserv was set up to distribute the newsletter and to provide a means of cross-county communication.

The three training sessions covered orientation to Internet access and basic software use followed by more in-depth workshops. The first training session also provided the opportunity for the Extension electronic training educator to set up much, and sometimes all, of the hardware and software for each site in that county. Further training was provided to each of the sites by the RRIC information and technology coordinator. Participants in these training sessions received a more in-depth introduction to the Internet (e.g., SMTP, telnet, FTP), e-mail and mail servers (e.g., Eudora Pro, e-mail lists, netiquette), and the World Wide Web (e.g., URLs, Netscape 3.0, search engines, searching techniques, CYFERNet), with time for questions and answers and practice in searching. Participants also had the opportunity to share their Internet experience (if any) and engage in an "Internet Concerns" discussion. A national Extension Web training site has been useful in delivering staff development: Communicating Electronically—Internet Education for Children, Youth, and Family Life Professionals (URL: *http://www.cas.psu.edu/docs/cyfernet/cetrng.html*).

The information and technology coordinator also held two, Cornell-campus-based beginners' workshops on Web page creation for Extension staff and community collaborators. Participants learned how the Internet works and how browsers read documents that have been coded with HyperText Markup Language (HTML) tags, how to code electronic documents in HTML using word-processing software (Notepad) and an HTML editor (HomeSite 1.2), how to add graphics and pictures to their pages, and how to make links from their page to others on the Web.

Hot Lines from Heidi, the electronic connectivity newsletter, is a means of disseminating information on computing; the "Technology Tips" includes information on saving and storing e-mail messages, making signatures and e-mail filters, accessing electronic newsgroups, attaching documents to messages, making bookmark folders in Netscape, finding CCE-RRIC-L listserv messages on the RRIC Web page, and installing HTML editing software. All newsletter issues also have a section on useful Web sites on some "focus of interest" that came from the Extension staff or community collaborators' questions. Foci for this section have included these topics: sites for children, learning about the Internet, families and communities, work and employment information, parenting, "special events and special requests," diversity, computer and technology information, health and nutrition, government and activism, and CYFERNet resources.

A draft RRIC Web page was developed early in the connectivity initiative by students enrolled in an upper-level Cornell communications course. Now redesigned and maintained by the information and technology coordinator and an undergraduate work/study student, the RRIC Web page serves as a storage facility and browsing site for RRIC-involved individuals and also gives them information (including people pictures) about other sites (*http://www.cce.cornell.edu/youth/rric/rric.html*). Extension staff and community collaborators also recommend Web sites, and these are included in the newsletter and put up on the RRIC site in the appropriate category. As a result of training on WWW page creation, RRIC participants will be able to create their own sites, which will "live" on the larger RRIC Web site when completed. CCE-RRIC-L, an electronic listserv for the RRIC project, was

set up in February 1997 to distribute the electronic newsletter and to provide a means of cross-county communication. Although this listserv has not been used to its fullest potential, plans are in the making for increasing its use and relevance.

The "Telephone Talk" monthly telephone conferences, besides addressing specific questions from the sites, have covered these major topics: Introductions and Connectivity Status (January 1997), Children and Child Safety on the Internet (February), the RRIC Web Page—Planning (March), Gender and Technology Use (April), Internet Skills/Competencies (May), Online Chat (June), the World Wide Web (July), and Web Page Making (August and September). Ongoing technical support is provided through e-mail and telephone communication. For the Extension hardware specialist, phone support during 1996-1997 consisted mainly of talking Extension staff and community collaborators through reinstalling dial-up networking after they had "done something" to make it not work. This problem occurred about six times, with about an hour per caller to get the problem fixed. Calls also came in regarding network identification accounts and passwords that were simply lost or that had changed due to a change in Internet provider in that county. For the information and technology coordinator, phone support consists of helping to set up software preferences, e-mail filters, and attachment folders; to open attached documents from e-mail programs; and to download and install freeware (for HTML editing). The information and technology coordinator is often asked to help individuals use e-mail functions, find Web sites on a specific topic (e.g., evaluation or community development), make an e-mail mailbox and save mail, subscribe to an electronic mailing list, find a free counter for Web pages, and find instructor material for teaching Internet technologies to others. Telephone and e-mail together often provided a means for discussing programmatic strategy around connectivity as well.

Connectivity Progress

A baseline and a 1-year follow-up study were conducted on use of the Internet by Extension educators, program collaborators, and the program participants in the RRIC project. Partial results from the follow-up study are currently available. Participants were asked to complete the RRIC Connectivity Initiative Users' Perceptions and Expectations Survey before the beginning of each of the eight community orientation training sessions. State RRIC staff also completed the survey. A total of 59 respondents completed the baseline survey. At the start of the connectivity initiative, 73% of the respondents accessed computers more than once a week, while 16% used computers less than once a week or never. Only 14% of the respondents used the Web more than once a week, and 71% had never used the Web. Similarly, 59% of the respondents had never used e-mail, and only 25% used e-mail more than once a week.

However, respondents anticipated changing their use of computers as a result of being in the project (Table 1). The vast majority (91%) saw computers as an access tool to program resources and for project communication, and most also envisioned that adult (71%) and, to a slightly lesser extent, youth participants (62%) would use computers as well.

In keeping with the participatory nature of the RRIC project, we also asked how educators wished to use technology (Table 2). As with their perceptions about how use would change, the majority of respondents (90%) wanted to use computers as a program resource tool. They also identified the value of technology in finding answers to specific questions for program clients (83%). Importantly, over half wanted to use computers for recreation and to interact with others across time and location.

In general, community collaborator respondents saw the primary advantages of the connectivity initiative in terms of having greater opportunities for community networking, collaboration building, linking to university resources, sharing of program resources, and accessing information. Several of the community collaborator respondents also envisioned that the project would help make computer technology more available to other community members and thus "help to bridge the gap between the have's and the have not's." Some community collaborator respondents also reported that having computers would help them reach new audiences and provide improved or enhanced services to their present clients. For example, one community collaborator reported that the computer at her agency would be used to help community members improve their job skills and career opportunities. In sum, the community collaborator respondents expected that the primary advantages of computer technology would be to empower program participants, helping them feel more self-confident and thereby lessening the sense of

isolation experienced by many limited-resource families.

Table 1

Perception of Changes in Computer Use: Baseline Survey

Perceptions: How the use of computer technology may change	No. of respondents	Percentage of the total no. of respondents ($n = 58$)
Computers will be used more frequently as resource tools—for information, materials, learning, etc.	53	91%
Computers will be used more frequently for communication in RRIC, with other programs, organizations, resource people.	49	84%
Computers will be used by the youth involved in RRIC	36	62%
Computers will be used by the parents involved in RRIC	41	71%
Other: "Volunteers will access." "Computers will be used by neighbors."	2	3%

RRIC staff respondents reported that the primary advantage of having computer technology would be realized in terms of helping others in the community to become computer literate. They felt having access to computers would strengthen their linkages with community agencies and facilitate the sharing of program resources.

Similarly, Extension staff respondents expected that gains would be realized in terms of "co-learning" and strengthening relationships with community agencies. They envisioned (a) expanded community access in limited resource neighborhoods, (b) increased opportunities to share innovations and to network, and (c) an enhanced ability to locate both program-specific and educational materials. In addition, they saw expanded possibilities for workforce preparation, as well as opportunities for both computer and reading literacy development.

Almost all the community collaborator respondents reported that for the connectivity initiative to be successful, continuous support and ongoing technical assistance would be necessary. Several of the community collaborator respondents felt that in addition to ongoing training and the purchase of more computers, it would be important to have a contact person either at Cornell or at their local Extension office to answer questions. Another important issue raised by the community collaborator respondents was the need to market the connectivity initiative. As one respondent reported, "We must let the community know that we have connectivity and that it is available for their use." Several respondents emphasized the need to strengthen communications between the collaborators and the larger community. In order for the project to succeed, the community collaborator respondents perceive the following to be important benchmarks: (a) successful installation of computer hardware/software, (b) training and ongoing support for successful access/use of the Internet, (c) promotion of the availability of the computers within the communities agencies, and (d) possible upgrading of the computer hardware/software over time. One respondent summarized what is needed in order for the project to be successful: "Everyone who is a part of RRIC needs to work together and continue to keep the connectivity [project] up and running."

Table 2

Expectations for Computer Use: Baseline Survey

Expectations: How respondents would like to be able to use computer technology	No. of respondents	Percentage of the total no. of respondents (n = 58)
As a program resource tool	52	90%
To do research	41	71%
To find specific information for clients	48	83%
To communicate with others	49	84%
Just for fun!	38	66%
Go to an online "chat" room to discuss community issues	33	57%
Other (see below) [Extension Staff] To help expand clients' knowledge. [Extension Staff] Maybe create a Web page. [Extension Staff] To help others help themselves. [Collaborator] Assist in employment. [Collaborator] For a tool to continue my education. [Collaborator] To obtain recovery and 12-step information. [Collaborator] For us, I think it will be hard to stay within 100 hours per month! [Collaborator] As a tool to empower parents. [Program Participant] To be defined.	9	16%

The RRIC staff respondents agreed that ongoing support from campus would be necessary for the project to succeed. They suggested that it would also be important to provide additional and periodic training and to distribute suggestions and recommendations on how community agencies and program participants could use computers to become more comfortable and confident with them. This skill would help them meet the challenges faced by children, youth, and families in their homes, at work, and at school. The Extension staff respondents also perceived a need to "market the program through the media to draw attention to it." In addition, the Extension staff respondents echoed the other respondents in seeing the need for continued training; continued communication with campus computer support personnel; and ongoing dialogue with Extension Administration and campus resources on how computer technology might be used and is being used to improve the lives of children, youth, families, and communities.

When asked about what they hoped to gain from their participation in the connectivity initiative, the community collaborator respondents reported that they hoped (a) to increase their own computer skills; (b) to broaden their spectrum of contacts on various issues pertaining to family resiliency and support; and (c) to empower children, youth, and families by sharing access to information and computer skills with program participants.

Similarly, the RRIC staff respondents hoped to gain a "greater comfort level with computer technology and the ability to impart that to limited-resource families." The Extension staff respondents hoped (a) to improve their ability to access materials from the Internet and the World Wide Web, (b) to

increase their capacity to mentor new learners, (c) to discover ways to build collaborations via the Internet, and (d) to broaden access to resources and sharing of programs and ideas.

After 1 year and several cycles of training and ongoing technical assistance, we see good progress in the application of technology to our RRIC project and in the general development of computer literacy.

We created a short questionnaire, "Reflections on Using Computers in the RRIC Project." This questionnaire was designed to enrich our understanding of program participants' experiences using computer technology. Forty-eight surveys were administered. To date, we have received 20 responses—a response rate of 42%. Some of the preliminary findings based on these responses and a comparison to the baseline survey results are reported. Most respondents are the RRIC project staff. Collaborator respondents are less represented in the follow-up (Year 1), returns to date comprising only 15% of the sample (Table 3).

Table 3

Year 1 and Baseline Respondents (Preliminary)

Relationship to the RRIC project	Year 1: Percentage of the total no. of respondents (n = 20)	Baseline: Percentage of the total no. of respondents (n = 59)
Extension Staff	50%	29%
RRIC Staff	25%	5%
Community Collaborator	15%	53%
Program Participant	5%	10%
Other	5%	3%

Strong increases in computer use, suggesting both increased literacy and program application, are emerging (Table 4). Seventy percent of the respondents now (Year 1) report using a computer daily, and 20% report using one more than once a week—a total of 90% reporting use more than once a week, compared to 73% reporting use more than once a week at the start of the project.

Table 4

Year 1 and Baseline Computer Use (Preliminary)

Frequency of computer use	Year 1: Percentage of the total no. of respondents (n = 20)	Baseline: Percentage of the total no. of respondents (n = 59)
Daily	70%	[Not asked]
More than once per week	20%	73%
More than once per month	5%	10%
Less than once per month	5%	8%
Never	0%	8%

Much more dramatic is familiarity with and use of the Web (Table 5). After 1 year of the RRIC project, 55% reported WWW use more than once a week, while only 14% used the Web more than once a week previously.

Similarly, respondents are now using e-mail frequently (Table 6). Fifty-nine percent reported never using e-mail at the start of the project, and now a total of 85% use it more than once a week.

In order to gauge the extent to which the RRIC project has been successful in the connectivity initiative in terms of increasing program participants' computer skills, we asked respondents to describe themselves in relation to eight skills "BEFORE" becoming involved in the RRIC project and "TODAY" since being involved in RRIC. The respondents used a 5-point scale where 1 = very true of me; 2 = true of me; 3 = partly true of me; 4 = partly untrue of me; 5 = not true of me at all; and N/A = not applicable. For each of the eight skills there was a positive change in the direction of improving skill levels. Table 7 presents the preliminary results ($n = 20$).

Table 5

Year 1 and Baseline Use of World Wide Web (Preliminary)

Frequency of computer use	Year 1: Percentage of the total no. of respondents ($n = 20$)	Baseline: Percentage of the total no. of respondents ($n = 59$)
Daily	15%	[Not asked]
More than once per week	55%	14%
More than once per month	15%	5%
Less than once per month	15%	10%
Never	0%	71%

Table 6

Year 1 and Baseline E-mail Use (Preliminary)

Frequency of computer use	Year 1: Percentage of the total no. of respondents ($n = 20$)	Baseline: Percentage of the total no. of respondents ($n = 59$)
Daily	45%	[Not asked]
More than once per week	40%	25%
More than once per month	5%	8%
Less than once per month	5%	7%
Never	5%	59%

Next, we asked the respondents in Year 1 to indicate how often, on average, they accessed each of the five National Extension Networks (CYFERNet). The percentages in Table 8 represent the total number of respondents ($n = 20$) in each category of use.

During Year 1 of the connectivity initiative, we began distributing the electronic newsletter. Eighty-five percent of the respondents reported that they received the newsletter, and 94% found it "helpful" or "very helpful." In addition, we asked how helpful the monthly "Telephone Talks" with county collaborators and RRIC staff were. Sixty-seven percent rated them as "helpful" or "very helpful."

Early in the project, we recognized the need for computer technology training in conjunction with the connectivity initiative. The survey respondents indicated that 65% have participated in the introductory training session (summer 1996); 45% participated in the "Searching the Web and E-mail" training sessions; and 50% participated in the "Home Page" authoring and HTML training sessions (summer 1997).

Table 7

Participants' Computer Skill Development

BEFORE becoming involved in RRIC		**TODAY** since being involved in RRIC	
Variable	Mean (Std. Dev.)	Variable	Mean (Std. Dev.)
7a. I knew how to use a computer.	2.15 (1.35)	7a. I know how to use a computer.	1.70 (.80)
b. I used the World Wide Web to get information.	3.65 (1.31)	b. I use the World Wide Web to get information.	1.95 (1.00)
c. I used electronic mail (E-mail).	3.20 (1.70)	c. I use electronic mail (E-mail).	2.25 (2.22)
d. I used the computer as a tool for finding information, curriculum, resource materials, program activities, etc.	3.85 (1.46)	d. I use the computer as a tool for finding information, curriculum, resource materials, program activities, etc.	1.95 (1.10)
e. I used the computer to do research.	4.05 (1.32)	e. I use the computer to do research.	2.30 (1.34)
f. I used the computer to find specific information for program participants.	4.20 (1.15)	f. I use the computer to find specific information for program participants.	2.30 (1.22)
g. I used the computer to communicate with others interested in improving our community.	4.45 (1.05)	g. I use the computer to communicate with others interested in improving our community.	3.35 (1.50)
h. I used the computer to go "online" to discuss community issues.	4.80 (.70)	h. I use the computer to go "online" to discuss community issues.	3.95 (1.15)

Table 8

CYFERNet Access

National Network	Several times a week	About once a week	About once a month	Once or twice a year	Never
a. Child Care	10%	20%	25%	15%	30%
b. Family Resiliency	10%	30%	20%	15%	25%
c. Decisions for Health	0%	15%	20%	15%	30%
d. Science & Technology	0%	15%	35%	15%	35%
e. Collaboration	0%	20%	25%	15%	40%

When asked what types of future computer/Internet training were of interest to them, the respondents (n = 20) indicated interest in the following:

- 20%—Web page (HTML) training.
- 15%—Web page training on the editor "HomeSite."
- 70%—Computer maintenance and trouble-shooting.

- 50%—Internet training on special topics (e.g., downloading files and extensions or dealing with spams).
- 50%—Buying and using database software.
- 10%—Buying and using accounting software.
- 50%—Basic Windows 95 training.
- 20%—Other (e.g., PhotoShop software, publishing for families, learning how to make "Kids Books," and PowerPoint software for training presentations).

Respondents to the Year 1 survey identified these benefits of providing computer technology to community collaborators:

- computer literacy to more youth and adults who would otherwise not have access,
- breaking down isolation barriers, and
- learning skills that translate into becoming more employment-ready and marketable.

In order for connectivity to be successful, the respondents said that RRIC should:

- get more people involved, offer more trainings, more computers, expand the availability of computers; and
- provide easier access as well as get "mentors" to work more intensively with youth and adults.

Finally, when asked to reflect on personal gains by being involved in connectivity, the respondents volunteered comments such as:

- "I've improved my networking ability within and outside of the community. I've increased, broadened my knowledge of family issues and gained a sense of fulfillment by assisting families improve their lives and increase their self-sufficiency by working with them, long-term on broad family issues."
- "I've been able to assist community grassroots people in opening up new resources for their uses so that these people do not need to leave their neighborhood to connect with the world."
- "Before getting involved in this project, I had no knowledge of computers. I have gained a lot, and my new abilities have opened a new world of future programming for support in our city."

Describing Two Success Stories

The RRIC project can report important community outcomes in its fourth year of operation due in some part to the addition of the connectivity initiative. In Onondaga County, the RRIC project is strengthening grassroots projects in a neighborhood classified as the twelfth poorest in the nation. At one of the connectivity collaborator sites, the "Hayden Library" is providing a safe, secure environment for children and youth in a neighborhood where over 44% of the families live below the poverty level. This grassroots program has successfully integrated computer technology with traditional 4-H Club activities, teaching children nutrition, food safety, and plant and animal science curricula. There is evidence that 10 to 12 children who are participating in this program have gained computer skills, improved their reading ability, improved their school attendance, and improved their school grades. Importantly, this program has lessened the sense of isolation often experienced by those who live in poverty. The children and their families report feeling supported and connected to the larger community. This volunteer-run program is based in the home of a former teacher's aide. With only one computer and the support of county Extension staff, this program is transforming young lives. One child in the second grade did not know how to write his own name when he first came to Mrs. Hayden's home. Today, he is using the computer and encouraging his mother to learn with him.

Through the Tompkins County project, approximately 130 at-risk, inner-city youth (55% female, 45% male), ages 5 through 18, are involved in a wide variety of positive youth development activities. Adult community volunteers and agency collaborators act as informal trainers, mentors, and resources. Through this asset-based, empowerment model, youth assist in program development while building on the assets they already have. Youth are excited about themselves, their futures, and their community. Self-reports from parents indicate that there is evidence that the youth involved in this program have improved school grades and attendance. Youth have become active learners and are applying their newly acquired computer literacy skills (e.g., using the computers for homework, school projects, 4-H record keeping, and working at the Science Center). By helping to conduct a community needs assessment, the youth learned participation action research (PAR) skills

(e.g., data collection and analysis). Youth are now working on community issues identified through the needs assessment and are active in community development and policy-making projects. Youth are knowledgeable about local resources. They have learned job preparation skills (e.g., resume writing, interview skills) and have gotten summer jobs.

These programs follow an assets-based, ecological model with strong support from local community agencies and parents. Recent success in acquiring a Literacy Grant points to the sustainability of the program. There is evidence that in addition to gaining computer literacy skills the youth involved in these programs have learned and practiced skills such as reading, math, science, communication teamwork, problem solving, leadership, and community service. These youth have developed sustained positive relationships with their parents or other adults through participation in these programs.

Summary

Computer applications within an Extension education project for children, youth, and families in at-risk communities are beginning to provide evidence of positive learning outcomes. The project can attribute some of the program success to the use of computers and the Internet. At the same time, the project has realized gains in computer literacy for educators, collaborators, and program participants. As in previous Extension projects and in keeping with educational trends in general, successful use of computer applications requires attention to both the technology and the program content. The RRIC project team recommends that community education projects with connectivity form a partnership with local educators and collaborators and incorporate meaningful learner involvement. In this way, needs can be addressed for training, low-cost and convenient access, and relevant content. Ultimately the partnership should result in a democratic and empowering experience that strengthens communities.

Acknowledgments

This paper is based upon work supported by CSREES, U.S. Department of Agriculture, under special project #94-EYAR-1-2004 (Reducing Risks and Increasing Capacity—RRIC Project); Stephen Goggin, Project Director.

References

Baym, Nancy K. (1995). The emergence of community in computer-mediated communication. In S. G. Jones (Ed.), *Cybersociety: Computer-mediated communication and community.* Thousand Oaks, CA: Sage.

Cooperative State Research Education and Extension Service (CSREES). (1995). *Renewal state projects to strengthen community programs for children, youth, and families at risk.* Application Packet. Washington, DC: U.S. Department of Agriculture.

DeYoung, Bruce, Harris, Peggy, & Larsen, Lori. (1995). Virtual communities and university outreach. *Journal of Extension, 33*(1).

Eisenberg, Michael B., & Johnson, Doug. (1996). *Computer skills for information problem-solving: Learning and teaching technology in context.* ERIC Digest. Syracuse, NY: ERIC Clearinghouse on Information and Technology. (ERIC Document Reproduction Service No. ED 392 463)

Freeman, Steven A., Whitman, Scott D., Tormoehlen, Roger L., & Embleton, Karla M. (1997). Internet childhood safety and resource guide. *Journal of Extension, 35*(2).

Goode, Donald Z., Jr., & Elliott, Graydon Ed. (1992). Who's responsible for computer competence? *Journal of Extension, 30*(4).

Laughlin, Kevin M., & Schmidt, Janet L. (1995). Maximizing program delivery in Extension: Lessons from Leadership for Transformation. *Journal of Extension, 33*(4).

Plotnick, Eric. (1996). *Trends in educational technology 1995.* ERIC Digest. Syracuse, NY: ERIC Clearinghouse on Information and Technology. (ERIC Document Reproduction Service No. ED 398 861)

Schuler, Douglas. (1994). Community networks: Building a new participatory medium. *Communications of the ACM, 37*(1), 39-51.

■

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☐ This document is covered by a signed "Reproduction Release (Blanket) form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☒ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").

EFF-089 (9/97)