

ENGAGING OUR CLIENTELE: EDUCATIONAL TECHNOLOGY

“If Cooperative Extension is to expand its role as a "brand name" quality source for unbiased, research-based information and education, it must be cognizant of the growing Digital Divide throughout the United States and be a proactive source of change.” (2005 Elbert & Alston Survey of Extension administrators)

The University of Nebraska–Lincoln Southeast Research and Extension Center (SREC) faculty and staff strive toward the advancement of information technology through transformational extension teaching and learning which is vital to the future of Nebraska. In order to achieve measured success, in the area of technology over the next five years, we must have a clear understanding of what technologies are available and what the expectations are for using those technologies.

Current Situation

Access to the Internet and other digital technologies has rapidly become a necessary tool to function in today's information-rich society. In order for an individual to advance economically, educationally, and socially, being digitally connected is even more vital. "A large number of Americans regularly use the Internet to conduct daily activities; people who lack access to these tools are at a growing disadvantage. Therefore, raising the level of digital inclusion by increasing the number of Americans using the technology tools of the digital age is a vitally important national goal." (U.S. Department of Commerce, 2000)

Internet usage is increasing in Nebraska. This represents an opportunity for Extension to reach a broader audience with resources and educational opportunities. As recently as 2000, just 37% of Nebraska households were using the Internet, placing Nebraska in the bottom third of states with internet access. In four years, Nebraska households with internet access jumped to more than 55%, placing Nebraska in the top half of states (Source: Nebraska's online usage rising, *Lincoln Journal Star, Sunday, December 11, 2005*).

The Nebraska Information Technology Commission reports as of May 1, 2006, 93.37% of the State’s population centers have broadband accessibility:

State of Nebraska	Population Total ¹	Population w/Access to Broadband	% Availability
Urban Population	1,324,719	1,322,445	99.83%
Rural Population	386,544	275,327	71.23%
Total Population	1,711,268	1,597,772	93.37%

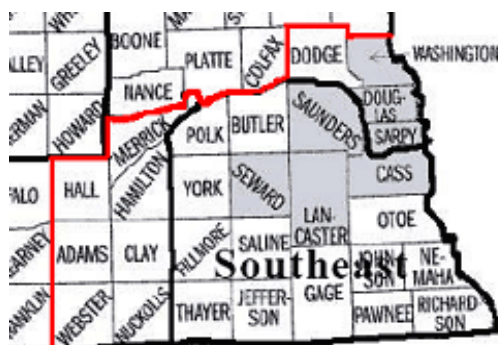
¹Population figures are from the 2000 US Census and agree with figures posted on the Nebraska State Highway Map. Map locations with no stated population are not included on this chart (See Appendix) *Urban Population* figure is the sum of all the population centers. The *Total Population* is the sum population of all Nebraska Counties. The *Rural Population* is the difference between the two, calculated down to each county level.

Nationally, Internet penetration has reached 73% for all American adults. The survey also found Americans who have broadband connections at home has now reached 42%, up from 29% in January 2005 (Source: Pew Internet Life Project - April 2006). Ninety-nine percent of public

schools in the United States had Internet access in 2002 (Source: Department of Education's National Center for Education Statistics). Ninety-five percent of public libraries provide access to the Internet (Source: American Library Association).

Extension Clientele

In 2005, Elbert & Alston survey of Extension administrators indicated 4-H youth development should serve as a mechanism for technological innovation. This idea was supported in a study conducted by Kolodinsky, Cranwell, and Rowe (2002) who reported 4-H teens training senior citizens on the Internet resulted in a positive learning experience for both groups. A recent study by Barker & Meier (2005), found 96% of Nebraska 4-H youth have access to computers and that 92% had the Internet at home. This research also clarified 4-H youth were looking for more project areas in technology and basic computer skills.



The 2004 *ConsumerStyles* survey by Porter Novelli, a communications firm with expertise in social markets and the source of all phases of research (under contract by USDA) for the new MyPyramid Food Guidance System revealed the Internet was a top media source for health and nutrition information. They found usage for this purpose didn't vary greatly among lower-income consumers and the general adult population. For example:

- Forty percent of low-income women aged 20 to 40 uses the Internet for health information daily to monthly.
- Fifty-one percent of low-income women aged 20 to 40 turn most often to the Internet, compared with 47% of all U.S. adults.

In introducing the 2005 MyPyramid Food Guidance System, USDA chose an Internet-based version for its initial introduction to the general public. This was due to the high number of people they found having Internet access at home, through school or at libraries.

Although the rate of Internet penetration among rural households (54.1%) is similar to urban areas (54.8%), the proportion of Internet users with home broadband connections remained much lower in rural areas than in urban areas according to the U.S. Department of Commerce (2004).

As explained in a report co-authored by the Departments of Agriculture and Commerce (April 2000), cable modem and DSL technologies were found to be less likely to serve rural areas for varied reasons including lack of population density and geography. However the report concluded wireless technologies such as satellite and MMDS (fixed wireless) are promising technologies for increasing broadband use in rural areas. They are better suited at present than cable or DSL for providing high speed Internet access in areas where population density is low. The report found even at this early stage of wireless deployment, rural households are slightly more likely than urban households to have satellite or MMDS.

In 2005, the Center for Applied Rural Innovation conducted a survey of rural Nebraska counties to determine the perception of rural respondents regarding computers and Internet connectivity issues. The survey was divided by district and metropolitan counties were not included (shown in grey).

SREC - Rural Counties

- Fifty-eight percent of respondents were using dial-up connections at home.
- Thirty-five percent had DSL connections at work.
- Sixty-one percent reported using the internet for work or business was important.
- Persons with higher levels of income are more likely than persons with lower incomes to have acquired Internet access.
- Information searches and email are the most important reasons for having an internet connection.
- In general, rural Nebraskans say their satisfaction with various features of their internet connection has increased during the past ten years.
- Persons living in or near the larger communities are more likely than persons living in or near the smaller communities to say their satisfaction with the speed of their internet connection has increased during the past ten years.

Extension Faculty and Staff

In the 2005 Elbert & Alston survey, Extension administrators were uncertain if the university Extension system in the United States, as a whole, was adequately prepared to address the current digital divide. Additionally, they stated county Extension offices should be equipped and staffed to serve as centers of learning for technology. Moreover, they indicated a need for Extension personnel to receive more training in the area of information technology. They felt Extension personnel must be highly equipped and trained if they are to act as change agents in society, serving as models of innovations and practice (An Evaluative Study of the United States Cooperative Extension Service's Role in Bridging the Digital Divide, Journal of Extension, October 2005).

Emerging Trends/Issues

In 2006, Jim Emal, Professor and Director, Strategic Technologies, University of Nebraska and Ann Byers, Community IT Manager, Nebraska Information Technology Commission published a list of emerging technology trends.

- Technology is becoming more personalized.
- Technology is enabling instant communication.
- Technology is becoming more mobile.
- Technology is facilitating the creation and sharing of content.
- Technology is increasingly being used to facilitate social interaction and collective action.
- Micro-commerce will become more widespread.
- Video, voice, and data will further converge.
- Devices will increasingly communicate their (and our) location and status.

A changing world. "Technology will continue to change how we communicate, socialize, and work, creating a more personalized, instant, mobile, creative,

Implications for Extension

Survey of SREC Faculty & Staff

Summary: In the fall of 2005, University Specialists and SREC faculty and staff participated in a roundtable discussion on educational technology. This resulted in the development of an on-line survey for SREC faculty and staff to help determine current usage and needs for educational technology. Feedback from staff was very positive with 102 surveys submitted.

Clearly, the biggest issue among those surveyed was the need for on-going technology training opportunities. Only 47% of staff believed they were adequately prepared to use technology in a teaching situation. Fifty-six percent reported they do not have all the technology resources and skills to do their jobs. Yet, 99.9% of SREC faculty and staff believe keeping up with new technologies is critical if extension is to remain a viable resource for Nebraskans.

The survey found staff preferences for training were regularly scheduled training updates with hands-on training. Technology updates at meetings/retreats or on demand also scored high compared to the status quo. More than 25% of respondents need training opportunities or want to learn more about 27 different technology software applications. Forty percent requested help to learn more about graphics editing, desktop publishing and database web applications. Thirty percent desired advanced skills using Microsoft Word, Excel, University Web templates, Web surveys, graphics editing/arcssoft, PowerPoint, GPS software/devices and more.

Several survey respondents expressed willingness to help work with staff to help teach basic technology applications such as word processing, spreadsheets and more.

Of 102 staff surveyed, improved connectivity was rated the lowest need among the majority of Extension offices in the SREC District.

See Appendix: 2006 SREC Educational Technology Survey of Faculty and Staff.

Recommendations

Professional development is key to effective technology integration and increased student learning. Educators must have ongoing technology training and support to learn how to integrate technology tools into their teaching strategies (US Department of Education, 1996).

If technology is to be utilized as an educational tool, Educators must possess the confidence, understanding and skills to effectively incorporate technology into their educational practices. Properly trained extension faculty and staff ensure that both the University and the citizens of the state of Nebraska receive maximum return on their technology investments.

1. Develop a proactive approach for extension faculty and staff to adapt to and utilize evolving educational technology. The key to this strategy will be to develop plans supporting the efforts of the five-year plans for the SREC Issue Teams and efforts to engage clientele while remaining flexible to adapt to changing technology. The strategy must address the evolving needs of both extension staff and clientele.

a. Work Group. Establishment of a SREC Educational Technology Work Group comprised of District staff and Extension Specialists. This collaborative team will develop a vision, mission, goals, and objectives focusing on the use of technology for extension teaching and learning. The action team will monitor trends in educational technology, evaluate the changing needs of learners, and continually re-evaluate/modify plans to meet the changing demands of clientele and staff. The Work Group will also explore the possibility of an urban survey for counties not included in the 2005 CARI study.

Fiscal Impact Consideration: Minimal impact if travel is limited and on-line technologies utilized for work group planning. Resources can be explored through technology grants offered by Extension. The urban survey may require funding.

b. Coordinator. Appoint an educational technology coordinator for SREC. The coordinator will ensure the action plan is implemented and serve as a catalyst for communication between staff, action team members and administration.

Fiscal Impact Consideration: The position may require a change of appointment or percentage of appointment dedicated to the position.

2. Implement sustainable professional development opportunities. Every staff member in the Southeast District must have easy access to professionals with expertise in technology and pedagogy.

a. Reduce the barriers to on-going professional development. Extension leadership must reestablish relationships within Communications and Information Technologies (CIT) to support on-going professional development training and resources for extension staff.

Considerations: SREC does not determine staffing or programming policies for CIT. At the time of this report, CIT does not offer on-going technology training, but a recent training for extension faculty and staff on WebEX (NUSkills) may lead to more opportunities for CIT to offer training.

b. Establish relationships within other University departments for staff training, resources and support. This may include Information and Technology Services on the main University campus, College of Engineering & Technology, College of Education and Human Sciences, J.D. Edwards Program

Considerations: Due to limited funding and reduced support for professional development resources for extension staff from CIT, SREC leadership must broaden the scope of resources available to Extension staff for technology assistance, and educational technology professional development.

c. Peer-to-Peer Coaching. Extension staff are willing to mentor and work with peers who wish to integrate technology or have specific technology questions. A resource list of extension mentors will be developed and made available on the SREC Web site. This list could expand to include the Institute of Agriculture and Natural Resources (IANR) faculty and staff with expertise. This will involve an extra commitment by staff willing to serve as mentors.

Consideration: Mentors will be making an extra commitment to help staff with technology resources and training. Volunteer mentors would be able to create an educational objective and evaluate impact to include on their Annual Report of Faculty Accomplishments.

d. Peer-to-Peer Sharing. The Educational Technology Action Plan team will develop and implement an on-line bulletin board forum for staff to communicate new ideas, share resources and resolve technology issues. This sharing will create a virtual learning community for extension staff.

Fiscal Consideration: Depending on the technology used for the forum, minimal costs are expected if SREC explores software that is readily available. Moderators for the on-line forum will be staff volunteers and CIT technology specialists.

3. Reduce obstacles that hinder progress and success. It is difficult to focus on integrating technology to support learning if Educators and staff cannot overcome basic technological equipment and facilities issues.

a. Assess the technical support staff allocation for the District. Lancaster and Douglas-Sarpy Counties have their own county paid technical support staffs. Dodge, Washington and Saunders counties are supported by staff at the Agricultural Research and Development Center (ARDC). The remaining counties must rely on one technical support staff member who is housed at CIT. This individual also supplies virus and computer support for four other units.

b. Continue to improve internet access for county offices. All county offices should have wireless capabilities and high-speed access to the internet.

c. Cost-sharing. SREC has aggressively offered county cost-share which has aided in Extension staff staying current with computer hardware, laptop computers and PowerPoint projectors. This strategy should continue when the District and state budgets allow.

Consideration: University Computing Services recommends replacing 25% of computer hardware each year in order to stay current.

d. Administrative/Campus support. Encourage leadership, support and sustainable technology resources within CIT.

Fiscal Consideration: Develop a budget where SREC staff can participate in training to keep pace with ever-evolving technology and clientele needs.

e. County Web Template. Extension staff must have access to an easy-to-use, reliable, *sustainable* Web site resource for county offices. The county Web sites have not been evaluated, revisited since implementation of the first design. Since that time the University has implemented standards for all University Web sites. The current design of the county Web sites does not meet the University's standards.

Considerations: Funding will be required for the technical support staff and cost-sharing of equipment. Priorities and funding of positions within CIT are not determined by SREC faculty and staff. However, SREC leadership should continue to work with administration to address the professional development and sustainable technology needs of Extension faculty and staff. It is imperative SREC Web sites comply with the University standards with a sustainable Web resource.

Outcomes

"If we teach today as we taught yesterday, we rob our students of tomorrow."

–John Dewey, noted educator

Lifelong learning applications using digital technologies and distance education offer limitless possibilities for extension. By following the recommendations outlined in this report, the Southeast District will evolve and improve in order to support the vision of the University as a place where good practices and technological tools help Educators teach and learners learn...better.

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