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Evolution of the Penn State Farm Management Extension Computer Lab

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Evolution of the Penn State Farm Management Extension Computer Lab

Abstract

The computer information processing revolution created an outreach education need to train agricultural producers in the use of computers and software applications. While initial computer workshop training efforts by county agents were frustrated by lack of consistent, portable lab equipment, a joint effort by Pennsylvania Farm Credit and Cooperative Extension led to the successful creation of a highly successful portable computer lab. During 1997-2000, Extension agents conducted 101 workshops for 821 paid participants on topics ranging from basic computer operation to record keeping. Success has led to the development of additional regional labs and agents' specialization in specific computer applications that now reach both farm and non-farm groups.

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Introduction

With the advent of computers, Extension had to first develop internal expertise in use of digital information processing technology before meeting the challenge of providing outreach training to clients in the use of computers and their application to farm and family needs. Penn State Cooperative Extension has met with both success and failure in adapting computer-based technology to training, and educational efforts.

A notable success in meeting requests for client training in computer applications was provided by the development of a portable computer lab. Outreach programming by primarily farm management and agricultural production Extension agents began in 1997. By 2000, Extension agents had used the lab resource for 101 workshops with 821 participants. Penn State Cooperative Extension's experience provides an excellent example of providing rural residents individualized training on computer utilization.

Background

Beginning in the mid 1980's, Penn State Cooperative Extension offices were outfitted with Apple computers to improve county agents' access to information and to facilitate internal communication processes. While initially on the technology cutting edge with Apple computers, many Pennsylvania Cooperative Extension offices soon found themselves with an interface problem because most clients had acquired DOS and Windows-based computers through the early 1990's.

Often the reasons for acquiring computers were not well defined at the farm/family level. Rural users frequently could not operate their computers or understand the application's programs. The new information-management tool was relegated to the role of a gadget for computer games and E-mail device for the children rather than of an aid to management. Many county Extension advisory committees consequently identified computer training as an outreach program priority. While the clientele were expressing the need for computer training, Extension agents were in a quandary as to how to meet hands-on training needs in terms of available equipment and knowledgeable manpower.

Initial Computer Workshop Challenges

Farm Management specialists began developing computer-training material in the late 1980's for county training programs on DOS and Windows-based applications. The first round of computer workshops required participants to bring and set-up their own computers in county Extension office training areas. However, the problems involved with this approach were numerous.

- Workshop locations had to have adequate wiring for 10 or more computers.
- Moving bulky desktop computers was difficult for participants. The computers were of different makes and hardware capabilities.
- Application instruction was difficult because individuals had different software versions.
- When individuals did not possess a particular software, loading it on a participant's computer presented a licensing problem.

Because these problems severely limited the suitability and popularity of these workshops, the bulk of computer training educational needs went largely unfulfilled. In spite of all the above-mentioned constraints, county offices took another big step toward committing to a standardized computerization by shifting to Windows-based technology, which, in turn, led to the development of a portable computer lab.

Portable Computer Lab Issues

To conduct successful training, there was a need for access to a computer lab equipped with identical portable Windows-based computers with identical licensed software versions and a video projector. Because a critical need for computer information processing relates to business decision-making, farm management and marketing Extension specialists developed the proposal for a lab resource. Administrators questioned the investment and unseen expenses related to a lab:

- Was there enough demand to justify purchase of the computers?
- Who would be in charge of the computers?
- How would the computers be maintained?
- How would they be transported to workshop sites?
- How would maintenance, repairs, and program upgrades be funded?

It was imperative that these concerns had to be met before the administrators would authorize the computer lab.

A Simplified Lab Management Approach

A survey of county agents indicated that a portable computer lab would be heavily scheduled for workshops from December through April, with limited use during summer months. The lab would be placed under the direction of a farm management specialist in the Department of Agricultural Economics and Rural Sociology at University Park. A secured storage area for lab equipment would be provided by the department.

In order to minimize transportation costs, Extension agents would assume the responsibility of transferring the computers between the university and county training sites. This low-cost solution, eliminating specialized transportation needs for the lab, subsequently proved to be very workable. As time went on, agents from one region would coordinate scheduling to reduce frequency of equipment transfer across counties. A fee of \$10 was charged to cover the cost of maintenance, repairs, and software upgrades.

Initial funding cost was shared through the establishment of an outreach partnership in which the Pennsylvania Farm Credit System contributed 50% of the cost of the lab equipment. The FCS was progressive in recognizing that computerized information processing was becoming essential in agriculture and viewed that assisting Extension in creating the computer lab would contribute to improved business management techniques beneficial to the overall farm economy. The support

from Farm Credit was essential to convincing Extension administrators to approve funding for the computer lab.

The 12 computers purchased in the fall of 1997 were equipped with licensed Windows 95®, Quicken®, and MS Word® processing and spreadsheet software. Computers were not initially set up for Internet connections because of the cost of modem cards and because few locations would have enough phone connections to connect more than a couple computers. Scheduling the use of the portable computer lab through the Department's Web site ensured fast and equitable access by county agents.

1997-98 Program Year

During the 1997-98 initial lab-use year, 10 agents conducted 15 workshops for 125 participants on computer basics, Quicken, spreadsheets, and dairy feeding (Table 1). The number of actual participants was greater than 125 because official numbers were based on computer fees. In the case where two individuals from one family used one computer, only one participant was counted.

Table 1.
Penn State Cooperative Extension Farm Management Computer Workshops
1997-2000

Workshop Topic	Number of Participants	Number of County Workshops	Extension Agents Instructing
1997-98 Totals	125	15	10
Computer Basics	13	2	2
Dairy Feeding Programs	5	1	1
Quicken	72	8	5
Spreadsheets	35	4	2
1998-99 Totals	351	38	25
Business Applications	20	2	3
Computer Basics	111	12	5
Farm Records	10	1	1
Intro to Computers	74	7	2
Quickbooks	49	6	3
Quicken	69	7	6
Quicken-Advanced	11	2	3
Spreadsheets	7	1	2

1999-2000 Totals	345	48	21
Computer Basics	47	5	2
Dairy Programs	12	1	1
Day Care Management	43	6	1
Farm Management/4-H	9	1	1
Intro to Computers	17	2	1
Quickbooks	110	17	7
Spreadsheets	39	6	3
Windows	51	7	4
Word Processing	17	3	1

Agents conducting the computer lab found participants to be highly receptive to the computer lab. They reported the workshops were important in learning to apply computer software in managing their farms. In addition, agents found that they were reaching an under-served audience in that more than 54% of the participants had not attended an Extension workshop the previous year (Parsons, Hanson Beck, & Martin, 2002). Quicken® proved to be the most popular workshop topic. Agents reported that while some participants needed to learn basic computer operation, many participants were interested in learning off-the-shelf record keeping applications (Groover & Bruce, 1998). Quicken®'s low cost and ease of operation made it a popular choice among the farmers and agents.

1998-99 Program Year

In the second year of operation, increased interest had agents reserving the lab 6-9 months in advance. By October 1, the computer lab was fully reserved from mid-November to mid-April. Agents conducted 38 workshops for 351 participants on business applications, computer basics, farm records, introduction to computers, Quickbooks®, Quicken®, Quicken-Advanced, and spreadsheets.

The most popular courses were introduction to computers and basic computer operation, with 19 workshops and 185 participants. There was also substantial interest in record keeping applications. Quicken® workshops attracted 80 participants, including 11 who attended an advanced Quicken® workshop. The importance of record keeping applications led to the purchase of Quickbooks® software which led to six workshops for 49 individuals. The use of the lab also extended to other groups as two workshops were held for non-farm business participants.

1999-2000 Program Year

Again the lab was fully reserved by October 1 for 48 outreach workshops that attracted 345 paying participants. Basic computer operation was still a priority. Sixty-four participants attended seven computer introduction and basics workshops, and 51 attended seven workshops on Windows®. There was also a good deal of interest in spreadsheet and word processing, with 56 attendees across nine workshops. Computerized record keeping had 110 participants over 17 workshops on Quickbooks®.

The 1999-2000 program year saw the development of two major changes in lab workshops as compared to previous years. First, there was a decline in the number of agents conducting workshops on basic computer operation. Several individual agents were developing specialty areas and conducting multiple workshops in their multi-county region and had begun to develop specific templates and exercises to aid instruction. The specialization appears to have led to fewer agents directly involved with the computer lab but a higher level of training proficiency.

The second change was an unexpected spin-off of the lab. A family resource agent recognized a need for financial management among operators of day care centers. As a result, six workshops

were held on spreadsheet operation and Quickbooks®. Obviously, the audience in these workshops was not the traditional clientele we had catered to before. But it did show the resourcefulness of Extension agents identifying an under-served population with a specific education need that could be met by the computer lab.

Program Expansion

By 2000 the computer lab had become a key Penn State Extension program component, but there were requests to keep up with technology. Agents using the lab indicated that Internet training was requested by many participants. To meet that need, each computer was updated with additional memory and phone modems in 2001. Just as the Internet is currently being used to train county Extension agents (Lippert, Plank, & Radhakrishna, 2000) and students (Hanson, Shinkle, & Dupin, 1999), it will also be used increasingly to train producers. Equipping computers with modems will not solve the problem of inadequate phone line access at many workshop locations (Samson, 1998); however, this situation is improving as more Extension offices are being wired with DSL connections. There was also increased interest among Extension agents in the use of instructive CD-ROM tutorials for various subjects (Swann et al., 2000).

The computer lab had become such a key program component that there was now a greater demand for computer training than lab availability. As a result, two Extension regions decided to purchase laptop computers for their own regional laboratory, which to some extent relieved some of the pressure on the original lab. If continuing deployment of similar computer laboratories in other regions is an indication of a successful program, then we are confident that we have indeed identified a very important and effective Extension resource that scales well with evolving customer needs.

Challenges for the Future

The development of the Penn State Farm Management Computer Lab has been a major success. Few Penn State Extension programs have shown the success of providing *personalized* instruction in 100 workshops attracting more than 800 participants during a 3-year time-span (Balliet, personal communication, 2000,). The lab represents an excellent example of Extension recognizing and fulfilling a rapidly evolving educational need. Important keys to the success of the program are the impetus provided by the extramural funding from the Pennsylvania Farm Credit System and the expansion brought about by the development of additional regional portable labs, which helped in coping with the growing demand for training within the state.

Foreseeable challenges that lie ahead are:

- Updating computer basics and specialized software training skills of county agents,
- Updating laptop computer capacity, and
- Developing new methods to promote the training so that it can better benefit rural residents.

Limited growth in Extension budgets typically translates into doing more things with fewer people. The complexity of training in computer applications requires increased specialization and human capital building of county agent workshop leaders. Finally, many producers and rural residents are still being by-passed in the information processing revolution. We cannot underestimate the importance of identifying new and alternative approaches to attract under-served and often isolated rural residents to basic computer literacy training. Use of the Internet to both publicize and implement computer application training represents a unique opportunity to extend the benefits of educational outreach. However, incorporation of the fast-changing Internet Web site and CD-ROM resource into Extension programming will likely require an even greater emphasis on computer specialization at the county agent level.

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