a blue-sky perspective

G. Keith Douce

We're now in an era of computer revolution. As H. A. Simon says "the early stages of this revolution are every bit as fundamental as the early stages of the energy revolution that started with the industrial revolution."[1] Computer technology has already become established in banking, inventory control, and many other areas.

As the technology becomes more advanced, the hardware becomes more compact and less expensive. As the price of computer hardware comes down, the use of this technology will increase both commercially and privately. This reduced cost, combined with the increasing availability of useful computer programs, will result in more and more people acquiring computers and computer terminals for their use.

New Delivery System

With the increasing popularity of both portable, interactive terminals and home computers, the Extension Service has had a whole new medium for information delivery and instruction made available to it. Consider for a minute, the benefits Extension personnel have gained through TV, radio, and slide-tape series. These delivery methods were once new, and we in Extension had to develop methods to use them in our programs.

Computer technology opens even greater avenues for Extension because of the ability to process individualized information and let the user immediately respond to a program. The ability to update information efficiently and quickly for dissemination through a computerized system will also greatly strengthen the Extension delivery systems.

Once a computer program is operational, it can be accessed and used by hundreds of people through the county delivery system, with no more involvement by an Extension professional than he/she wants. Each county agent could have the latest information, as well as instant help, from dozens of subject-matter specialists available at a moment's notice through the computer.

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Benefits to
Individuals   The home computer (or computer terminal) is going to rival the hand-held calculator in popularity in the future. Therefore, Extension needs to prepare for, and take advantage of, this development. So, how will we in Extension use computer technology? We must consider three main areas in which computer technology can benefit individuals:

1. *Helping people in decision making:* People need to have information available to them to make intelligent decisions. They must be able to evaluate the possible alternatives to help them do more productive planning. Many people look to Extension for help in these decision-making processes, and properly designed computer programs could help us do our job better and more quickly.

2. *Information storage and retrieval:* Every Extension Service has thousands of bulletins, pamphlets, and other written information available to the users that could be cataloged, stored, and retrieved quickly and accurately using computer technology.

3. *Instruction:* Properly designed computer programs implemented through each county office could be effectively used to help people learn new things, at their own pace, on their own home computer or on a computer in the county Extension office.[2]

Perhaps the most troubling consequence of our lack of leadership in [computers] would be that our credibility with the public would decrease. We could justifiably be asked why we aren't involved in using computer technology in our programs! Can we afford not to incorporate this new delivery methodology into Extension programs?

A Must!   We in Extension will lose the support of the public if we don't take an active role in using this new technology in our educational programs. Several states have already begun to take advantage of this computer revolution. Examples of state systems include CMN,[3] TELPLAN,[4] FACTS,[5] AGNET,[6] and BUGNET,[7] to name a few. These systems use a methodology that could reach clientele anywhere a telephone is available. The content of programs on these systems covers most of the disciplines represented by Extension and involve decision making, information storage and retrieval, and instructional processes.

The future will see nearly every Extension Service in the country using some type of computerized information delivery system. The technology is already developed, and is expanding rapidly. It's up to every Extension professional to consider ways to take advantage of this technology, and reach out and develop innovative program applications for it. A well-organized and developed system makes dozens of subject-matter specialists available to the user instantly.

"Blue-Skying"

Now, I'd like to "blue-sky" some possible applications of computer technology to program needs in the Extension Service. Many of these program types are already available or are being developed for use on one of the above-mentioned computerized systems.

Information Retrieval

Not everyone wants to have a large number of Extension publications lying around the office or home! Why not let an individual access a list of available pamphlets from an Extension data file, and order the ones he/she needs from the local county Extension office? The local county agent could monitor the requests and type in some comments, or follow up at a later time with a visit or a telephone call.

The information on the pamphlets themselves could be transferred directly to the user's home computer, thus avoiding much paperwork and cost. Has the information been recently updated since it was last copied? The computer could easily answer that question for the user!

Why not have the county office order pamphlets, bulletins, and other supplies from the state office directly by computer, and avoid a time delay and paperwork?

Do you need to know how to control the cotton bollworm? Our current method is to either remember or obtain a pamphlet that tells us how and when, what to treat with, cautions, and other necessary control information. Why not retrieve the control information, the insect population levels that necessitate a chemical application, weather data, and other pertinent information and let the computer help in that complex, decision-making process?

Admittedly, you're capable of making the decision yourself, most of the time, but what about those times you're unsure? Have new chemicals become available, or have some currently used chemicals become ineffective? Simply ask the computer!

Training

Another area of potential usefulness is agent training. Rather than try to get all of the county personnel to a central

location, why not let them take a "correspondence" course on a computer in their office? Or, if they prefer, use a terminal in their home at night to complete the course!

Programmed Instruction

What about 4-H projects? Computers lend themselves nicely to programmed instructional processes. As an additional learning tool, why not let a 4-Her "grow" a calf on the computer in a few minutes and learn the consequences of poor management and the advantages of good management before trying to grow a calf on the farm? These applications could be programmed on an Extension system and transferred to a home computer or a county office computer when needed.

Marketing Information

Do you have a farmer who needs up-to-the-minute marketing information? Include this information on a county computer for the farmer's easy access. Let's develop a simulated marketing program and let the county agents and farmers "market" their commodities, change prices, storage costs, etc., and experience the consequences of their decisions in minutes without actually selling any of their crops. Isn't this education

Communication

Have you ever experienced difficulties contacting a specialist (or county agent) from whom you need to obtain urgent information? Chances are you left a message to return a call, and were out when the call was returned. It was late Friday afternoon, and you were stuck until Monday, right? Not necessarily! If you had a message sending and receiving capability on a computerized system, you could have left a written message for the specialist or agent. The specialist (or agent) in turn could reply and leave a written message for you to retrieve via your computer.

Family Use

Perhaps a homeowner needs to purchase a new stove. Where do consumers get the necessary information to choose which stove to buy and how do they decide what options they need and can afford? Could our Extension specialists catalog this type of information and provide education to homeowners on budgeting, financing, etc., via the computer? Should the Extension Service develop and implement educational program on home budgeting and financing for the public? If so, what better way than with the aid of a computerized system that could be used in the county office, or in a shopping center, or in a client's home?

Should Extension develop programs that will take the actual income and expenditures of a family over time, categorize them, and develop an end-of-the-month summary?

If the programs were developed properly, an Extension agent would be able to go over each item point by point with the user, either via the computer program, or by following up with personal contact to help families better manage their budgets.

In the agricultural area, many types of computer-assisted programming are being used now. Interactive programs are available for least-cost feed rationing, grain drying, market information, irrigation scheduling, insect control methods, and so forth.

Summary

It's but a small step to make the programs and information more available to users through their own computers in their homes or offices! However, in the process, we must develop strategies to ensure that Extension personnel have the ability to update the information as necessary and use these capabilities to further educate the users.

We must also ensure that we don't weaken our current delivery system. I believe that a computerized system, if properly developed, will greatly strengthen our county delivery system by expanding the available information and the capabilities of the county personnel to better serve clientele.

If the Extension Service doesn't address these kinds of applications and take the lead in using computer technology, somebody else will. We won't have control over the programs that these people develop. Although they may not have the strong research base to support the programs that Extension has, their programs will be widely used by the public and a lot of money will change hands in the process.

Perhaps the most troubling consequence of our lack of leadership in this area would be that our credibility with the public would decrease. We could justifiably be asked why we aren't involved in using computer technology in our programs! Can we afford not to incorporate this new delivery methodology into Extension programs?

Footnotes

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7. John A. Jackman, "Insect Models in Texas Extension Pest Management Programs," in *Proceedings of National Pest Management Workshop* (Gainesville: University of Florida, Institute of Food and Agricultural Sciences, February-March, 1978), pp. 75-76.