

A Proprietary Information Dissemination and Education System

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With constantly changing and increasingly complicated technology in agricultural science, adults who are involved in agricultural occupations demand various types of information and education. A multitude of both private and public agencies and institutions disseminate information and deliver education about these new agricultural technologies not only to farmers, but also to individuals who provide farmers with information as well as education. There is little consensus about who will inform whom about what (Nowak, 1988). Agencies and institutions engaged in information dissemination and educational activities often continue to operate without clearly specified goals with overlapping responsibilities. Personnel specifically charged with informational and educational responsibilities also have information and education needs.

The Pennsylvania Crop Management Association (PCMA) is an educational resource organization which disseminates information to its member farmers who pay for consulting services rendered by crop technicians. Currently, 10 local crop management associations throughout Pennsylvania employ 16 technicians who consult with more than 500 farm clientele who collectively farm more than 85,000 acres. The purposes of the PCMA are to protect the environment while simultaneously maintaining optimal economic production. The PCMA provides information and education about how to better manage crops through new technologies.

Which agency or institution can most effectively design and deliver programs that will aid technicians to carry out their roles as professional consultants? Will farmers' management practices improve if technicians' information and education delivery methods improve? Should educational programs for technicians be enhanced by focusing on information and educational delivery methods? A major question facing the Association was which agency or institution could best provide inservice

education and workshops to meet the needs of the technicians.

According to Riesenber and Gor (1989), survival in the agricultural industry "often depends on having an edge on information related to the market, efficient allocation of available resources, and use of new or innovative farming practices" (p. 7). Knowing farmers' preferences for receiving information helps program planners transfer information regarding innovative farming practices more effectively. Reisenber and Gor recommended that program planners become aware of the patterns in farmers' preferences and design informational and educational programs accordingly. They concluded that farmers prefer to learn via interpersonal methods rather than by mass media methods, especially if they are older, have less acreage, and have no college of agriculture experience.

Obahayujie and Hillison (1988) determined from a sample of Virginia farmers that in disseminating information or educating people, the uniqueness of the audience must be considered. They concluded that the methods used by educators should correspond with the clients' maturity, educational level, background, and objectives. Although research generally has indicated that using interpersonal methods of communication are more effective, farmers also rely on mass media for information.

Different methods of communication are used in the different stages of the adoption process (Reddy, 1987). For example, mass media types of information sources may play a more significant role in the awareness and interest stages of the adoption/diffusion process and interpersonal methods may be more important in the trial, evaluation, and adoption stages. Lionberger and Gwin (1982) suggested combining mass media and interpersonal communication methods to hasten the adoption process. Change agents must know target audiences to tailor their educational strategies

and more effectively deliver information to benefit particular audiences (Rogers, 1983).

Purpose and Objectives

The purpose of this qualitative study was to examine the educational role of Pennsylvania Crop Management Association (PCMA) technicians and their perceptions of farmers' sources of information regarding new concepts and ideas. The objectives were to:

Describe technicians' perceptions of their role as professional consultants.

Identify information sources used by technicians to stay current with new technology and concepts.

Identify technicians' perceptions of how farmers learn about new concepts and ideas.

Identify technicians' perceptions of why farmers are motivated to make changes.

Procedures

The population for this study was all 16 Pennsylvania Crop Management Association technicians. Fourteen of the 16 technicians (88%) who served the 10 crop management associations in Pennsylvania participated in two focus group sessions that were scheduled in conjunction with their annual winter inservice during January 1992.

This study utilized two focus group sessions to obtain qualitative data about perceptions and opinions using five open-ended questions. Collecting this type of data would be difficult using other methods and focus groups allow for quicker data collection than do quantitative methods (Lederman, 1990). The participants in the two focus groups shared a common occupation and the sessions were designed to encourage open discussion and interaction among the technicians (Krueger, 1988; Kirk, 1986; Lederman, 1990).

Each of the five open-ended questions designed to accomplish the objectives of the study were asked in each focus group session: 1) What is your role as a crop management association technician? 2) What resources do you use to keep current on changes within the agricultural industry?

3) Of the resources you have just mentioned, which ones are most beneficial? 4) How do farmers learn about new farming concepts and ideas? 5) How are farmers motivated to make changes in their farming operations?

Two focus group sessions were conducted with seven technicians participating in each session. The sessions were tape recorded for subsequent data analysis and the researchers served as the moderator and co-moderator for the two sessions. Transcripts of the focus group sessions were made by the researchers. A report of the proceedings was compiled from the transcriptions and conclusions based upon agreement between the two groups.

Findings

Objective One: Role of the Technicians

Technicians almost unanimously believed that they were providers of information to help farmers maximize their profits. Specific responses from participants included:

"I try to give them a better crop or yield for less money . . . if I can provide information to do so."

"I think we're providers of information and we are also sounding boards."

Some technicians perceived themselves to be filling the role of educators and even described their strengths and weaknesses in fulfilling this role. One of the strengths they perceived that they brought to the educator's role was individualized instruction and assistance. They felt that individual contact was very important because the more the farmers felt they were being treated individually, the more likely they were to respond to the ideas presented by the technicians. Interestingly, technicians indicated that providing individual attention was a characteristic of influential teachers they had encountered in their own lives. The technicians reported:

"I consider myself an educator . . . My skills are deficient and that's something I'd really like to improve upon."

"Besides keeping your interest, which you need to have in a teacher, they deal with

you as a person and not a number. You are an individual and each person is different and you need to deal with them in that way because everyone's personality is different."

"You've got to tailor (information) to the individual. . ."

"You can't treat everybody the same way."

"I guess one of the strengths we have is that we understand the farmer and the position he's in. You have a lot of legislators that don't know the front end from the back end of a cow, but they're up there making rules or laws. We understand, we know current situations, what they're going through. We know each farm that we work with, just the management that's there. We can work with specific farmers with their farm and not just make one general statement and say it has to apply to all farmers."

The technicians noted a lack of communication skills as one weakness they have in fulfilling their educator role. Sample responses included:

"If you consider yourself an educator, you need excellent communication skills . . . which I'm greatly lacking . . . You have to explain your ideas, your reasoning very clearly, very concisely . . ."

"A weakness is our inability to communicate that to them . . ."

The communications skills . . . are very important . . ."

The technicians described their interpersonal communication skills as part of the total package of communication skills in which they desired training to improve their speaking and writing skills.

Objective Two: Information Sources Used by Technicians

Technicians indicated that the farmers for whom they work were the major resource they used to remain current with new technology and

concepts; they use the farmers to gain this information. Some typical responses were:

"I probably get as much information working back and forth [with] the farmers as [I do] from any other thing. And being there to watch it, the results from whatever you tell them to do or they do. That's where you get more information than anything else, really."

"You go from farm to farm and see what practice works and [other farmers] will try something new because it's working for their neighbor."

"I get a lot of information from the farmers themselves. They are a great source of information. If one guy knows something, you can pass it on to another person -- you're sort of a liaison between the farmers so you are able to pick up information from them. It's really quite amazing."

An additional source of information useful to the technicians were extension agents and university specialists. The technicians indicated that they used the agents more often because of their availability, but believed specialists offered valuable information as well. An additional human resource used by the technicians was information gained from each other from the meetings and workshops presented during the Association's programs. Sample comments included:

"I use advice from fellow consultants."

"Coming down here to the workshops, being with the other technicians [helps]. We talk about things. That helps me to learn."

In addition, written materials were also identified as an important source of information. Technicians used information from university and farm-related publications:

"I try and use trade magazines. Some of the ones I'm on the mailing list for are the . . . which gives me a background as far as the chemical industry."

"I subscribe to . . . which gives me a background to the alternative agricultural segment of it."

"I read . . . magazine which is more oriented to farmers . . . and . . . which is also oriented to farmers. So I try to get a variety of background."

We subscribe to some of the magazines like . . . and . . . so we can present both ways to the guys, let them decide which [way] is best for them."

Objective Three: How Farmers Learn About New Concepts and Ideas"

The primary information source that technicians perceived farmers use to learn about new concepts and ideas included a variety of publications including trade journals, farm publications, and the popular press.

"Most of these guys who are going to try [a new practice] have read about it somewhere . . . Basically, it seems like they pick most of it up in their periodicals."

"I think farm magazines and papers are probably one of the biggest influences on farmers."

"I think most of my fellows pick up the idea from the popular press . . . A lot of the farmers do quite a bit of reading."

The next most common answer to where farmers got information about new concepts and ideas was from the technicians:

"The idea is picked up . . . and then they come to us and ask how we'd suggest they implement it."

"They do bounce off a lot of what they learn [that's] new off of us . . . before they make decisions. They like to bring us in on their decisions."

"I think they get information from us. I think what our job is they ask us [about] what they read in the newspaper or hear from other people and we help put that into

perspective for them as far as their specific farm . . ."

The technicians were in almost total agreement that farmers obtained information from each other. Word of mouth was a very good source of information.

"[Word of mouth] is faster than anything else going, if [the practice or innovation] works."

"The idea gets picked up from their neighbors . . . they do quite a bit of discussing among themselves."

"Word of mouth is still the biggest influence of any farmer activity there is. If some concept works, it usually gets passed on . . . It's more word of mouth than anything else after they get an idea . . ."

The technicians thought farmers received information from extension personnel during educational activities and meetings. Test plots or field trials and local feed stores and dealers were additional sources of information for the farmers. They perceived that their clientele attended meetings that benefited them most.

"What's real good, a county agent . . . sets up a field trial and the farmers can take a look at it . . ."

"They only have x-amount of time to go to meetings . . . [they've] got to keep [their pesticide licenses valid] because they are going to have to spray some, so you know they're going to go to those meetings first; [credit meetings are] going to be their priority."

Objective Four: Why Farmers are Motivated to Make Changes

Economics was the most common answer given by technicians to describe what motivates a farmer to make behavioral changes in the way they run their operation. The technicians felt their clientele made changes to maximize profits.

"The major thing is they are trying to stay in business . . ."

"I think the bottom line is money, really. Most good environmental practices do save money. They may be environmentally aware, but I think it all boils down to what kind of profit they can make."

"If you can't make any profit, you're not going to do it . . ."

"I'd say [the] number one [reason] would be economical . . ."

"A lot of [changes are] economically driven . . ."

Environmental factors also play a role when farmers make management decisions. A majority of the technicians agreed that their clientele cared about the environment, although they were not always aware of when they were causing damage. It was the group's perception that fear of environmental lawsuits was forcing some farmers to change their practices.

"I think if they knew they were causing environmental damage, I know a lot of them would do different practices . . . I don't think they know specifically if they are or not . . ."

"The average farmer is very environmentally sound, but that one percent [that isn't] has created a lot of havoc . . ."

"Lawsuits and money have changed the outlooks of farmers more than anything else . . ."

"I think there is a little bit of an environmental tinge . . . some of them are getting a little bit nervous about nutrient management. It hasn't hit them hard enough yet to . . . put that into their driving factors, but they are beginning to realize that the manure and the over-fertilization of fields [is not environmentally safe]."

Implications and Recommendations

The technicians who participated in the two focus group sessions viewed their roles more as information providers and professional consultants than as educators. As a group, they seemed to understand their individual audiences and could use

interpersonal methods of communication to effectively convey information. As a group, one of the greatest shortcomings was a lack of sound communication skills. They were almost unanimous in expressing both a need for and desire to enhance their interpersonal communication skills. They had an earnest desire to be better able to present their ideas to their farm clientele and, ultimately, to market the crop management association concept to other farmers who were not yet clientele. These skills would not only allow them to provide better information and research findings to their clientele, but also to individually tailor their messages and other communications to potential clientele.

In reality, the technicians serve their farmer clients in a much broader, more sophisticated manner--as nonformal adult educators in agriculture. To assist these technicians in meeting their clientele's demands and expectations, inservice workshops and educational support activities should be planned and designed around these perceived shortcomings. Seminars and on-going activities should include basic communication skills, effective interpersonal communication, marketing and the promotion of ideas and concepts, as well as basic instructional techniques useful with adults. This could provide opportunities to expand the role of agricultural educators to become involved in and provide leadership for the training, preparation, and updating of technicians who are employed by commodity management associations.

Technicians found human information resources to be the most valuable source of information. Interpersonal contact was still a necessary component of information dissemination and education. Technicians realized that they had an important influence on their clients and strived to make the most of this contact by understanding the characteristics and attitudes of their particular farmer clients.

The flow of information between the technicians and their farm clients occurred in both directions. Farmers shared information with the technicians about different management activities that they performed, had read about, or had heard via work of mouth. Technicians provided their clientele with information based on their own experience and education. The technicians obtained valuable, practical information from

farmers who did the work about what practices were successful or failed. This, in turn, was shared with other farmers. As a result, local adaptations were perceived to be more important than university research results because of the applied nature of the management practices. Walters (1991) referred to this point when he suggested that private advisors may have less need to appropriate LGU (land grant university) credibility if there is less reliance on public research. Perhaps this give-and-take, nonjudgmental relationship between technicians and their farm clientele motivated farmers to learn more freely about new concepts and ideas. An ability to identify farmers' problems, address them appropriately, and provide alternatives is a basic communication and educational technique that all educators must possess to remain a viable and valuable commodity to the agricultural community.

Technicians believed that farmers learned about new concepts and ideas from a multitude of sources. In order of importance, the technicians ranked their sources of information as publications, other farmers, extension personnel, and meetings. Despite the top-rated response being a nonhuman resource (publications), the technicians indicated that farmers asked other farmers what they had read before making management decisions. Although farmers developed ideas about new concepts and practices from publications, they most often learned about them from human sources of information. When presenting workshops or using other means of face-to-face personal communication with farmers, adult educators must provide relevant and accurate information about new concepts, ideas, and technologies. These are the stages used to inform and describe farmers about cutting-edge technology and management practices.

The technicians believed that farmers only attended those meetings that would benefit them the most. Since technicians perceived that farmers implemented changes because of profit motives, educators must emphasize the relevance of an educational program's impact on the farmer's potential economic situation. To maximize a program's potential impact on a target audience, it would be beneficial to the programmer to promote to the farmer the economic benefits accruing from attending an educational program.

Technicians perceived that their clientele's farming practices could potentially become more environmentally sound but it would happen only if farmers were motivated to change their farming operations as a result of economic incentives. The majority of technicians perceived that although farmers cared about the environment, farmers did not always understand the relationship between their practices and environmental pollution. Most technicians were aware of alternative agricultural methods and had suggested to farmers how to incorporate them on their farms.

Since their clientele also learned from other sources of information, the technicians felt that alternative farming practices must be advertised primarily because of their economic viability. Educational workshops that show farmers both sound, profitable environmental practices were essential to inform farmers of ways to change practices. Information that is readily available and directed towards farmers must be targeted through different multi-media to motivate farmers to implement environmentally safe and economically viable practices. Extension agents, university specialists, technicians, and other adult educators must work collaboratively to assist farmers in implementing environmentally sound and economically rewarding farm management practices.

Although extension once provided extensive one-to-one interactions, the need for a knowledgeable local professional has expanded beyond the organization's capacity to meet such needs. Crop management association technicians are responsible for disseminating information and ideas as well as for providing nonformal education to their farmer clients who pay for production information services. Specific opportunities to solve farmers' management problems have given rise to the effective interpersonal communication channels now used by the technicians. These private, nonmass media sources may escalate in both number and importance as farmers demand more highly-specialized, site-specific information to fit physical, economic, and social environments. With the support of agricultural educators working cooperatively with farmer-led organizations, not only should production information that improves the physical, economic, and social environment of farmers increase, but also alternative solutions for promoting a more sustainable agriculture be more widely disseminated.

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