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## **Communications on Agricultural Research, Development, and Extension Teams**

**Donald L. Esslinger and Constance M. McCorkle**

### **Introduction**

Domestically and internationally, agricultural research, development, and extension (ARD&E) programs are experiencing a resurgent interest in interdisciplinary collaboration as a more effective approach to enhancing farm productivity and human well-being. This collaboration typically takes the form of a team of specialists and researchers from various physical and biological sciences, the social sciences, and agricultural extension.

Constant and effective communication, both internal and external to the program, is a criterion of success to operate an ARD&E effort. Effective communication becomes even more critical—and more problematic—when people from a variety of disciplines are expected to contribute to an integrated team effort.

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## **Professional Jargon**

If nothing else, the professional jargon of different disciplines can sometimes close the door to effective communication. This is not surprising, since on occasion we even experience difficulty communicating within our own disciplines. When we try to work across disciplines, the terminology problem is magnified. The jargon barrier is one example of communication breakdowns that ARD&E teams commonly encounter.

Closely related is the understandable tendency of each discipline to identify, define, and address agricultural problems according to its own methods, models, and outlook. For example, plant breeders may see a new variety as the ideal solution to a given cropping problem. Hydrologists may instead think that more water, or more timely delivery of water, is the key. Economists may argue that pricing alone can resolve the matter. Anthropologists may say it is best to do nothing at all!

This diversity of opinion and approach is not bad. Quite the contrary—it is the overriding strength of an interdisciplinary approach. Ideally, it should lead to solutions that are more socioculturally and technologically appropriate, ecologically sound, and cost-effective. The work will better fit the complexity of the real world.

## **Communication Across Disciplines**

Communication across disciplines is essential. Yet experienced professionals who have spent years acquiring a profound knowledge of their field are naturally inclined to work within the scope of that expertise. Venturing into the no-man's-land between disciplines can be a difficult and confusing experience, as we leave behind our tried and true disciplinary paradigms. Furthermore, there is often little to motivate the scientists to embark upon this extradisciplinary journey. Our university's reward systems rarely encourage interdisciplinary interaction. Academic positions are usually defined in precise subspecializations, and the most prestigious journals are often the most narrow and field-specific.

This article addresses the need for more and better communication on the interdisciplinary ARD&E team. Although there is a healthy literature on team-building communications

in fields like business management and industrial psychology, it is not always directly relevant to agricultural concerns. While there are many well-known formal models of communication (e.g., Berlo 1960, Schramm 1961, Shannon and Weaver 1964), these are not always readily translatable into useful, hands-on strategies.

Here, we instead offer some insights and practical suggestions based on our own professional experiences on ARD&E teams. While these experiences derive largely from international agricultural development programs, the same lessons apply domestically. Our aim is to examine the everyday communicative activities of this many-headed monster—the ARD&E team—with a focus on where and how communications can be improved. In the latter regard, we have organized our suggestions into four categories phrased in terms of increasing the quality, frequency, intensity, and variety of channels in communicative events.

### **Where Communications Can Be Improved**

We have observed several very basic areas where improved communications could be of great benefit. The following three areas hardly exhaust the list, but they appear to be especially common problems in ARD&E.

One of the first places communication breakdowns occur is in team members' views of project objectives. It is all too easy to assume that everyone shares the same perspective on project priorities. Such an assumption is dangerous. At the outset of a project, one of the first communicative chores is to hold a team discussion of the written project objectives. (If not written, this becomes a prior task.) This should include a free-ranging exchange about the overall situation and background of the program to make sure that everyone has the same information and understanding. This is the time to seek clarification from superiors, to seek further explanation, to re-check the outcomes or products expected of the team, and so on. Sometimes even the definition of program subject matter and aims can be problematic. What seemed straightforward enough, at least as conceptualized in the office or the lab, can shift radically when confronted with the reality of local farming systems.

## **Common Understanding**

Equally important is reaching a common understanding about team, and overall program, objectives. If scientists see the team objective only in terms of their own expertises, something like the reverse polarity of magnets can ensue, and the team will fragment. How each discipline can best contribute to team objectives needs to be negotiated and spelled out as clearly as possible. Team objectives must take priority over individual agendas. In the process, team members must also reach a consensus about their respective roles in group action and decision making. Critical to both these processes is a mutual respect for the various disciplines involved.

Interdisciplinary teams commonly operate under a team leader. Sometimes this role is poorly handled. A dictatorial leader can easily stifle input from some members. Conversely, one who is too laissez-faire may not provide enough structure for effective team communication and action. One of the most important jobs of a team leader is to stimulate activities that promote the productive flow of information and ideas among team members.

## **Variety of Nationalities**

Cultural differences too, can affect the way a group works. It is not unusual to find a variety of nationalities on an ARD&E team. Their attitudes toward team communication may vary accordingly. Some nationalities expect to have a lively exchange of ideas by speaking out, confronting one another with new facts and insights, and even arguing. In contrast, others place a premium on downplaying open conflict, and discourage the frank expression of individual opinion.

Still further cultural and socioeconomic differences can be a hurdle to good communications. Team members may vary in age, sex, marital status, religion, education, salary, social position, place of residence, and so forth. This disparity can exacerbate disciplinary differences and impair communication flows if no steps are taken to cope with it explicitly.

## How Communications Can Be Improved

This could be a full curriculum or just a few tips to take home and put to use. We have chosen the latter.

*Quality.* Many qualitative aspects of the communicative process could be considered here, but we want to point to one that is too often overlooked—listening skills. As many communication experts have noted, if we would just listen better, this alone would lead to more successful communication. Some authors believe that listening is at once the most-used and least-appreciated aspect of daily communication. For example, a frequently cited report (Nichols, 1957) finds that many of us spend 70 to 80 percent of our waking time in some form of communication, of which nearly half (45 percent) is devoted to listening. (Of the remainder, 30 percent is spent in speaking, 16 percent in reading, and 9 percent in writing.)

According to Nichols, we can improve our listening skills through three simple exercises. 1) Anticipate the speaker's next point; this will let you know whether or not you are understanding the message correctly. 2) Identify the supporting elements of a message, as represented in explanations, emotional pitch, factual illustrations, etc. 3) Make mental summaries periodically as you listen. These exercises make listening an active rather than a passive communicative event.

*Frequency.* Simply increasing the number of opportunities for exchange of ideas and information is an obvious starting point for improving team communications. The more communicative events there are, the more likely that messages will be sent, received, and understood. One important function of a team leader is to provide for regular interaction among team members. Regular meetings of the full membership—the more often the better—are essential.

However, if team members are geographically scattered, other strategies must be sought to keep up the frequency of communications. For example, on one project on which the second author worked in West Africa, team members were posted in different regions, as much as 400 km apart. Moreover, they were faced with uncertain transportation and unreliable or no phone or wire service. To offset this communication gap, a monthly report was instituted. In it, each team member described research accomplishments, problems, insights, immediate plans, logistic or other needs, pro-

fessional contacts made, etc. When the team reunited for its irregular meetings in the capital, these in-house reports served to focus discussions and save time in catching up on each others' doings.

### **Semi-Formal Colloquia**

Aside from regular project meetings and written reports, another useful strategy is to establish a series of semi-formal colloquia on work in progress, with team members taking turns at reporting. Such colloquia serve as a forum for reacting to each others' work in an organized way, providing constructive criticism, and exploring concrete touchpoints between disciplines. Colloquia can also be used to invite speakers from other projects or special guests who can provide fresh perspectives on the team effort. On one project in the second author's experience, such colloquia rotated among all team members' homes, with spouses welcome to attend. Preceded by cocktails and followed by dinner, these soirees provided an especially congenial atmosphere in which to discuss team progress.

This last example suggests that not all team communications need to be structured or formal. A great deal of successful communication takes place in the equivalent of hall-walking, over meals, at parties, in visiting one another's homes, or in situations like having a drink or engaging in games and sports together. Team members and leaders should both contribute to the frequency of such events. The more casual and social situations often open up freer-flowing lines of communication that are blocked in formal contexts. Also, informal events can do much to overcome cultural and status differences, and build a solid sense of teamship.

*Intensity.* Increasing the intensity of communicative events reinforces and, especially in long-distance situations, can partially substitute for the frequency of communication. By intensity we simply mean close communicative contact for hours on end across days at a time. This category includes gatherings like retreats, team trips, workshops, conferences, and lengthy special-purpose sessions, e.g., for project planning, evaluation, or review.

Retreats are especially intense communicative events. On the Missouri campus, we do a lot of retreating. There are teaching retreats, department chair retreats, deans' retreats, and even small ruminant retreats! Sometimes a retreat, where

you physically remove yourself from the usual manifold interruptions, affords the only opportunity to work past the many communicative barriers, really concentrate on a given task, and see it through. Team travel provides essentially the same opportunity.

Workshops also promote intensive communication. Theme-oriented workshops can be especially useful in tackling specific research and extension problems from an interdisciplinary stance. An example drawn from the first author's experience is the once-a-year, week-long, essentially day-and-night internal review of all ongoing activities at the International Rice Research Institute. Although sometimes grueling, such sessions may be essential to continued project integration and research coordination.

*Variety of Channels.* Communication can take place through a variety of channels—written, oral, visual, and kinesic/proxemic. In sending and receiving messages, the greater the variety of channels used the more likely the information will get through. We have already mentioned various written and oral strategies in team communications, but we would like to suggest some uses for visual and kinesic/proxemic channels as well.

With regard to written channels, the need for regular reporting of individual and joint team activities cannot be over-emphasized. Some people view this as merely a useless bureaucratic nuisance. However, regular reports are one way for interdisciplinary teams to communicate the real substance of their differing activities and to keep track of how well, or if, they are meshing. Sometimes it is helpful to draft a standard outline for project reports.

Another strategy in the written channel is to coauthor papers and articles. This is one of the best, if not the easiest, ways we know to promote truly inter- versus multidisciplinary interaction. A project publication series for coauthored papers is a good motivator.

### **Integrative Technique**

Relatedly, jointly designing, and later, jointly applying research instruments has proved a successful integrative technique on several projects known to us. Not only does this strategy get team members working together on a concrete task, it also begins to build some knowledge of and respect for their differing expertises. Even better, it helps ensure that

data gathered by one discipline will be sensitive to issues and information needs in other disciplines on the project.

Reading, as well as writing, papers and articles together offers another means of communicating across disciplines. On some teams we have worked with, we have found that instituting a regular reading group, or even exchanging key articles, can do a lot for the jargon problem.

A further team-building reading strategy is systematic sharing of project-related correspondence, memoranda, and trip reports. This can be easily organized in a number of ways: routing slips, reading files, or copy distributions. These techniques are real time and memory savers. Like regular meetings and reports, they keep people current on project events, ensure equal access to important information, save significant person hours in discussions or updates, and keep communication open and above-board.

### **Choice of Language**

With regard to the oral channel, we will comment on just one factor—the choice of language used. On teams with an international composition, this can be a critical consideration. Members who are less fluent in the project *lingua franca* may feel left out or at a distinct disadvantage in expressing their ideas and arguments. This can indirectly exacerbate disciplinary or other differences. In such cases, the team as a whole should take care to see that, by translating or by shifting languages, messages are getting through to their membership. Translation takes time, but it can help team members make their best input to the communication exchange. The same is true for language shifts. Moreover, occasional code shifts avoid the negative cultural and psychological ramifications of always using only one of a team's shared languages.

Joint hands-on activities are an immensely important communicative resource in team building. They simultaneously incorporate oral, visual, kinesic, and sometimes written channels. One of the most common settings for these events is the field visit. The research and extension concerns of different ARD&E teams become much more comprehensible if team members can see, handle, and comment on their real-world correlates together.

Even when such shared, hands-on events are somewhat less than successful, they can dramatically point up where

and why better communication is required. This was illustrated in a field day the second author attended in Tunisia. Soil and water scientists, plant geneticists and pathologists, agricultural engineers, and socioeconomists and farmers participated in the field day. Its stated aim was to explain to farmers the rationale and results of on-going field trials. In the process, it became embarrassingly obvious that too little team communication had been taking place. For example, when farmers raised a point about the salty soil of one field, the plant pathologist began to contest it, until the soil scientists mentioned that they had already taken samples and that, indeed, the farmers were correct.

### **Findings Unreported**

No one had reported the findings of the soil analyses either to the farmer who owned the field or to the rest of the team! An agricultural engineer complained that one field had been plowed down the slope, without his knowledge. The input from socioeconomists into the selection of the farmer/collaborators was not at all clear. Finally, it was also evident that technical scientists could have benefitted from some tips from social scientists on how to conduct farmer-researcher dialogues in a more organized and egalitarian fashion. At the conclusion of the field day, there was a real sense for the need of increased team communication.

Visual aids seem to be a relatively less explored resource in team communications. Of course, we are all accustomed to the use of slides, graphs, charts, chalk boards, overhead transparencies, etc. Here we would like to comment on the rich potential for increased use of videotapes and films.

Videotapes of team members doing or explaining their fieldwork on location could be particularly apropos where the teams are dispersed across sites and have little opportunity to visit. Videotapes could conceivably do more for understanding different disciplinary thrusts as they evolve on the ground and for identifying touchpoints among project disciplines than any other technique short of being there. Moreover, these visual documents will come in handy for all kinds of team-external communication needs as well.

### **Interdisciplinary Understanding**

Ethnographic films about the client audience can also pro-

mote interdisciplinary understanding by introducing technical scientists to some of the social, cultural, ideological, and economic realities with which their extension and social science teammates will be grappling, and will ultimately confront the design and delivery of appropriate technology. (Heider 1983 provides an annotated listing of 1,575 such films.)

Finally, we mention one further communicative channel: kinesics, or body language. This is a somewhat touchy and very culture-specific channel. However, it is one in which we are all, everywhere, constantly sending out messages—usually unconsciously. This is not the place to review the fascinating cross-cultural literature on kinesics and the related field of proxemics—the study of the cultural meaning and communicative use of space (cf. Hall 1959, 1966). Here we will simply mention culturally appropriate eye contact, non-threatening body postures, a pat on the back, a touch on the arm, a special handshake, an egalitarian and interactive arrangement of chairs in a meeting room. These can do much, in formal and informal communicative contexts, to put across the message you are sending and/or to defuse interpersonal tensions.

## Conclusion

To conclude, we would like to emphasize along with Shaner et al. (1982) that “the key ingredient for true interdisciplinary is interaction.” One of the four critical components in their model of interdisciplinary synthesis and synergism is “frequent and open communication.” However, as we suggest here, communication should also be of high-quality, occasionally intense, should utilize as many channels as possible, and should take place in informal as much as formal contexts. Exploiting this full range of communicative options will improve any ARD&E team’s functioning.

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