A&e

Journal of Applied Communications

Special
Centennial
Issue

Official Journal of the Association for Communication Excellence
in Agriculture, Natural Resources, and Life and Human Sciences

The Journal of Applied Communications

About JAC

The *Journal of Applied Communications* is a quarterly, refereed journal published by the Association for Communication Excellence in Agriculture, Natural Resources, and Life and Human Sciences (ACE).

The *Journal of Applied Communications* is:

- Focused specifically on issues and topics relevant to agricultural and applied communication professionals.

- Peer-reviewed to ensure accuracy and quality.

- Indexed selectively in AGRICOLA; listed in Ulrich's International Periodicals Directory and ARL's Directory of Scholarly Electronic Journals and Academic Discussion Lists.

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Every article (not reviews) must contain an abstract of no more than 250 words. If applicable, briefly list the purpose, methodology, population, major results, and conclusions. Begin the manuscript text as page 1. Use appropriate subheads to break up the body of the text. List footnotes and literature citations on separate pages at the end of the text along with tables or figures, if used. Indicate in margins of the text, approximately, where tables/figures should appear. Include three to five keywords to describe the content of your article. Text for research articles, such headings as Introduction, Methods, Results and Discussion would be appropriate.

For literature citations, follow the style guidelines in the Publication Manual of the American Psychological Association (Sixth Edition). Within a paragraph, omit the year in subsequent references as long as the study cannot be confused with other studies cited in the article.

When statistical information is reported in an article, the author should contact the lead editor for special guidelines.

ACE Mission

ACE develops professional skills of its members to extend knowledge about agriculture, natural resources, and life and human sciences to people worldwide.

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Special Centennial Edition

In recognition of the 100th anniversary of the Association for Communication Excellence in Agriculture, Natural Resources, and Life and Human Sciences (ACE) and the 150th anniversary of the land-grant system, the Journal of Applied Communications editorial board requested submissions for a topical issue related to the history and importance of agricultural communications.

This special issue of JAC provides historical context about agricultural communications and considerations for the "next generation" of agricultural communicators. The issue features articles, book reviews, and commentaries on the history and future of agricultural communications, technology's role in agricultural education and communication, teaching agricultural communications history, and others.

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Authors should submit manuscripts online at:

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If the article is accepted, then the author will have to submit a final copy containing the revisions as electronic files (Word) that can be edited. These will be reviewed one final time by the executive editor.

The format for articles is as follows:

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- Separate title page listing authors' names, titles, mailing and e-mail addresses. Indicate contact author, if more than one author.

- Inside pages with no author identification.

- No more than six tables or figures.

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- Acknowledgement of any funding source.

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Categories are as follows:

- Research and Evaluation - These are the traditional, scholarly articles, using quantitative (e.g., statistical and survey methods) and/or qualitative (e.g., case studies) methods.

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- Commentary - These are opinion pieces. They speak to trends in communication or other issues of importance to professional communicators.

- Review - These are critiques of new books, journal articles, software/hardware, technologies or anything else that would be appropriate for the audience of the JAC.

All submitted manuscripts are considered for publication. However, prospective contributors are encouraged to be aware of the focus of this journal and manuscript requirements.

A manuscript is accepted with the understanding that the Journal of Applied Communications has exclusive publication rights, which means that the manuscript has not been submitted concurrently, accepted for publication, or published elsewhere.

While every effort is made to maintain an interval of no more than nine months from submission to publication, authors should be aware that publication dates are contingent on the number and scope of reviewer comments as well as response times during the review process.

All submissions are peer-reviewed (blind).

Commentary

Book Review

Research

Journal of Applied Communications

Commentary

Preparing for the Next 150 Years of Agricultural Communications

Tracy Irani and David L. Doerfert

Abstract

On the 150th anniversary of the land grant system, the authors examined the history, current situation and potential future of agricultural communications as an academic discipline. Their review highlights the past history of the field, focusing on the evolution of agricultural communications from print based journalism to a field that encompasses strategic communications, marketing and branding, public relations and online and social media. The authors also look ahead to the next 150 years, offering ideas as to how students will be prepared academically in the future and how the structure of academic departments may change to focus on inter and transdisciplinary "issue response teams" designed to more effectively address complex issues and problems across disciplinary boundaries.

Keywords

agricultural communications, history, influencing factors, future directions

Introduction

Agricultural communications is an academic discipline and a professional field whose historical roots extend as far back as the passage of the Morrill Act of 1862 and even earlier. It can be argued that the process of communicating about farm practices can be traced back to the early development of agrarian societies (Telg & Irani, 2012). For example, John Stuart Skinner began publishing the American Farmer, the first regularly printed farm journal, in 1819; the Farmer's Almanac was first published in 1792 and is still in publication today.

These early examples of what came to be called agricultural journalism, the precursor to agricultural communications, begin to illustrate how the field evolved from the need to provide isolated rural audiences with information on farming and home management topics (Tucker, Whaley & Cano, 2003). Over the next two centuries, agricultural journalists and editors expanded their role of providing primarily printed information to an audience comprised of agricultural producers, growers, and rural community members to include broadcast and eventually online dissemination to increasingly diverse audiences. Today, agricultural communicators include those who provide the news as well as those who advocate, publicize, and promote on behalf of agriculture and natural resources organizations in the private and public sectors.

Historical trends

Agricultural communications as a field of practice evolved from agricultural journalism, itself

a specialized form of print and broadcast news journalism that is strongly associated with science journalism and communications. Some of the first agricultural communicators were scientists in land grant universities who wrote about their research for agricultural publications targeted to lay audiences (Boone, et al, 2000). This was also the era when major newspapers began to employ farm writers and farm trade publications started publishing magazines that reached wide audiences. By the early 1900s, Iowa State University would offer the first course in agricultural journalism. In the 1920s, the development of radio made farm broadcasting a reality, first exclusively on radio, later also via agriculturally oriented television shows, many of which were produced and disseminated at land grant universities throughout the country.

This "golden era" of mass media-based agricultural journalism was short lived. According to Telg and Irani (2012), the introduction of new technologies like the personal computer in the 1980s drastically changed how agricultural communicators delivered their messages.

> Communicators once had to physically cut and paste clip art onto paper to make graphic designs. With the advent of the computer, software programs could be used to make graphics easily and quickly. Video producers had to learn to use computers to edit their video programs. (p. 8).

In the 1980s and 1990s, as an economic downturn precipitated consolidation of the farm broadcast industry, new communications technologies in the form of the Internet and the World Wide Web began to take shape (Tucker, Whaley & Cano, 2003). The advent of new technology-based communications channels led many companies and public sector agricultural organizations to hire communications practitioners and former journalists to help navigate this more complicated terrain and to advocate on behalf of their interests.

Today, as members of the public with a direct connection to agriculture continue to decline in numbers, the role of strategic communications in agriculture has become increasingly more important, and the skill set of agricultural communications practitioners has come to range from traditional journalistic writing and reporting to media production, print and web design, social media, public relations, advertising and marketing. This shift in the skill set of the modern agricultural communications practitioner has been made necessary, even essential, as a result of the major changes in audiences for agricultural information. Traditionally, audiences for agricultural information were agrarian/rural based, and they were looking for information and informal education on techniques and technologies to improve production agriculture practices. Extension educators delivered much of this information, using traditional channels, supported by communications practitioners who focused on tactical implementation of communications products such as newsletters, magazines, and pamphlets. The farm press contributed to this effort with publications and news shows aimed at producers, growers, and their vendors and suppliers (Telg & Irani, 2012).

Today, however, digital online media have not only changed the tools of communications practitioners; they has also facilitated the advent of the 24/7 news information cycle and the "citizen journalist." News and information, both credible and not, are now freely available from a multitude of online channels. Consumers looking for agricultural information have both more—in the form not only of credible, science-based information, but also advocacy and public opinion taking various sides on agricultural and natural resources issues and practices, and also less—in that, as a result of consolidation and convergence of news, there are fewer farm beat reporters, news outlets and, ulti-

mately, trustworthy sources of unbiased information.

Currently, social and demographic changes, combined with the explosion in new communication technologies and the growth of the animal treatment and environmental advocacy movements have contributed to a significant perceptual and public opinion shift toward agriculture. In the past 150 years, opinion has shifted from understanding and support, based on the fact that, historically, most people grew up on or near a farm, to a lack of understanding and a yearning for mythical stereotypes of what a farm is. "Shoppers' perceptions of agriculture are largely based on clouded childhood memories, second-hand information and the occasional horror story in the media" (Godfrey & Wood, 2003). It has almost become a cliché to say that less than 2% of the U.S. population is employed in some form of agriculture, but in practical terms what this has come to mean is that there is a growing disconnect, what some have termed a "green divide" between those in agriculture and members of the general public. This green divide has begun to inspire the industry, through its communications practitioners, to strive to develop greater awareness and understanding between producers and consumers (Goodwin, Chiarelli, & Irani, 2011). That greater understanding is being built on a shared foundation of academic research and informed practice—the purview of modern agricultural communications academic programs in higher education. But while these programs have continued to grow and evolve, will they have the capacity and resources needed to make a difference for the next 150 years? How will historical and current trends in the political, scientific, social and cultural spheres impact agricultural communications as a discipline and a profession now and in the future ahead?

Current situation for the discipline

The first 150 years of agricultural communications saw our profession evolve along with the U.S. economy, the agriculture and natural resources industry, and the land grant system. As our nation transitioned from its agrarian roots through the industrial age to today's information-based economy, our audiences, their needs, and the channels used to meet those needs have also changed. Within the academy, academic programs in agricultural journalism have given way to "comprehensive" agricultural communications programs that cover strategic communications, new and social media, public relations and marketing in addition to writing, editing and production of mass media. The current number of such programs has increased, to more than 30 in the U.S. currently, and enrollment of undergraduates and graduate students into agricultural communications programs has never been greater.

But while these are good things to congratulate ourselves about, the profession faces many sustained, long-term challenges that must also be considered with the changes in the industry and the public. In colleges and universities in the U.S., the majority of agricultural communications programs are typically located in integrated agricultural education departments, where our discipline exists as a "concentration" or "specialization" through which students may take anywhere from a handful of courses to a full program of study. A few programs around the country are located in generalized social sciences departments or in departments within colleges or schools of journalism outside a college of agriculture.

In most cases, at both the undergraduate and graduate levels, agricultural communications students must take courses from other areas of the departments in which they are located, or in other schools or colleges to supplement their "ag comm" courses. This makes it harder to develop cohesion in curricula for students and harder for the relatively fewer agricultural communications faculty in

an integrated agricultural education department to impart to students the knowledge and expertise needed for modern practitioners. Typically, there are not more than two or three agricultural communications faculty members in a given academic department, with many programs still employing a single agricultural communications faculty member who serves as a "one-man (or woman) band" teaching all of the courses in the program. Given the diverse skill sets needed in modern communications practice, the success of this approach even in departments with more than one agricultural communications faculty member is difficult, given the typically heavy teaching loads of such faculty members and limited time for research or advising graduate students.

Further, because of the tightening of resources generally and the fewer available faculty in most departments who can teach agricultural communication courses, many departments have sought to create efficiencies through the dual listing of courses at the undergraduate and graduate levels or programs of study that rely on course work taken outside the department and college. Although this problem is not entirely unique to us, it is unclear what the potential consequences for our overall effectiveness may emerge from these efficiency efforts. Will this dilute our curricula making it harder to establish a philosophical foundation of our own? Will this weaken agricultural communications as a field that stands on its own to the point that it is just another form of applied communications that belongs in journalism and communications? Can we answer this question decisively and empirically? Doing so will be important if we want to maintain our identity as a discipline and a profession in the years ahead.

Another issue we face in agricultural communications is the influence of lack of seniority in the profession. Though we go back 150 years or more, we are still a relatively young discipline in the respect that there are very few senior faculty in our academic departments in the U.S. There are currently no more than a handful of full professors in our field, and that is a gradual improvement from just a decade ago. In most disciplines, full professors contribute greatly to the research imperative, becoming senior scholars who can inspire big ideas and greatly enhance the quality and impact of scholarly effort. In our field, full professors typically have heavy teaching/advising/extension appointments and often share in administrative responsibilities as well. As a consequence, much of our published research is the product of multiple author teams and graduate student led thesis or dissertation projects. Very few articles published in the *Journal of Applied Communications*, the acknowledged journal for academic researchers in agricultural communications, are single authored. Currently, very few of the small number of full professors in agricultural communications have significant research appointments and/or active research programs.

The good news is that significant progress on developing the quality and productivity of our research has been made by the young assistant and associate professors that have been hired in the past decade. These young faculty, schooled in graduate programs that emphasize the importance of research and rigor in methodological practice, will likely become our true scholars in the future. But for now, senior faculty members such as the authors of this article have been known to ask themselves, "Do we have any scholars currently? We have professors but do we have scholars?"

What does this mean?

Over the past 150 years, including our more recent past, we have seen countless changes in how agricultural communicators complete their work, including how we work in a higher education environment. This has created opportunities for us to grow our discipline, but this has not been without its challenges. Academically speaking, it is hard to nurture and develop top tier research faculty

when even college-level colleagues sometimes view us as communications-centric personnel who create brochures and web sites. The nature of our research sometimes contributes to this impression. Much of our research focuses on the processes of communication and the effects of media. The theories of communications we follow come from our parent disciplines and allied fields. There are no theories that relate specifically to agricultural communications; everything we do is applied. This might mean we may never be able to call one of our own a scholar in the true academic sense of the term, but despite the applied nature of our field, the authors of this article are optimistic about the quality of, and potential for, an increase in scholarship in agricultural communications.

As our practitioner colleagues will probably be quick to point out, there is a lot about what we do to communicate about agriculture that still needs to be discovered. We are in a time when agriculture has never been under greater pressure, when audiences have never been so varied and when the stakes have never been higher. The future of agriculture in this country may actually depend on our ability to understand how to communicate more effectively and convey the importance and value of agriculture to non-agriculture audiences. Yet, as communicators, we too often still use the one-way dissemination model, and are still conveying the twentieth century agricultural model of big production and heavy inputs, while our audiences want agriculture in a variety of different ways, including local, organic, and non-GMO. As a society, we are dependent on the food and fiber system, yet many in society have an uneasy relationship with it.

In the year 2163 (or 150 years from now)

So where do we go from here? The 1969 song by Zagar and Evans, titled *In the Year 2525*, warned of the dangers of technology, portraying a future in which the human race was destroyed by its own technological and medical innovations. For example, one verse goes:

"In the year 3535
Ain't gonna need to tell the truth, tell no lie
Everything you think, do and say
Is in the pill you took today."

The last stanza of the song suggests mankind undergoes a continuing cycle of birth, death and rebirth. Perhaps this is the case with agricultural communications in that we are about to experience a new birth within our discipline. Our early history grounded exclusively in print and face-to-face communication practices evolved into one driven by changes in technology used to share information. Are current forces creating a yet undelivered rebirth for our discipline? If yes (and the authors contend this is the case), what might that new discipline look like? It is safe to say that today's technologies have connected the citizens of this planet in ways never before seen to the point of us witnessing how the use of social media can influence behavior on issues and problems previously thought to be out of reach (e.g. the political uprising in Egypt in January 2011). This political uprising was not led by professionally trained journalists but by individuals equipped with technology. With this in mind, the phrase "think globally, act locally" has evolved into "think AND act globally" and may serve as the new DNA for our discipline.

If we apply this new DNA to our research efforts, what will we find? You will find a discipline that is moving out of our single-focused box to one that is involved in transdisciplinary teams tackling the issues and problems associated with the challenges of a growing planet. For example, to

feed the 2.4 billion people that the United Nations estimates (2011) will be added to the planet by 2050 will require changes for agriculture, given that no additional land resources are likely to emerge and that feeding this expanded population would increase water demand 70 to 90 percent without improved agricultural methods. We must admit today that no one discipline, including ours, is going to solve this problem and that disciplines will need to combine their talents and resources to achieve success.

Preparation of professionals

For our discipline to be successful in these transdisciplinary teams, we must alter the DNA of our graduates, including our future faculty. While we have been arguably successful at evolving the skills set of the graduates over the past 150 years, we have done so in the isolation of our discipline. While we must understand and adjust our efforts to increase the capacity of our graduates to operate within transdisciplinary teams—whether the graduate is a university faculty member or is employed in another capacity outside the ivy walls of our campuses.

To achieve this end, we need to move beyond the limitations of our own departments and programs to "think AND act globally." As such, we must break the traditions associated with the locally delivered, locally served model to better utilize the talent and expertise found across ours and other disciplines to improve instruction at undergraduate and graduate education. Current means such as visiting fellows or electronically sharing courses begin this process of sharing expertise across institutions, but these likely represent the tip of the proverbial iceberg. To understand how much more is possible begins with the motivation to uncover what remains hidden from our current understanding. Regardless of the means, when we make the effort to see what might be possible, we can realize a greater number of true agricultural communications courses at both the undergraduate and graduate levels leading to an improved DNA for our discipline.

And, although we use field, discipline, and profession interchangeably to describe where we are in agricultural communications, we need to thoughtfully examine the distinction between these terms and what that means to the future preparation of our faculty and practitioners. Refusing to do so may be a barrier to fully reaching our future potential.

Structure

But let us not limit the restructuring of our DNA to our academic preparation. If we examine the structure of our administrative homes, we may find ourselves in a multi-unit apartment complex, versus a single family home living and working towards a singular goal. If we are to be actively involved in transdisciplinary teams, then how university departments are structured should reflect that work approach. As such, we may see a shift from a structure clustered around degree programs to one that allows individuals to focus their collective talents and abilities on issues through their research and potentially multi-disciplinary instructional efforts. Figure 1 illustrates the potential of this center-like structure, creating the potential for issue response teams with representation from each of the human dimensions in that department. These teams could then seek to combine with others external to the department to address current and future issues facing agriculture and society.
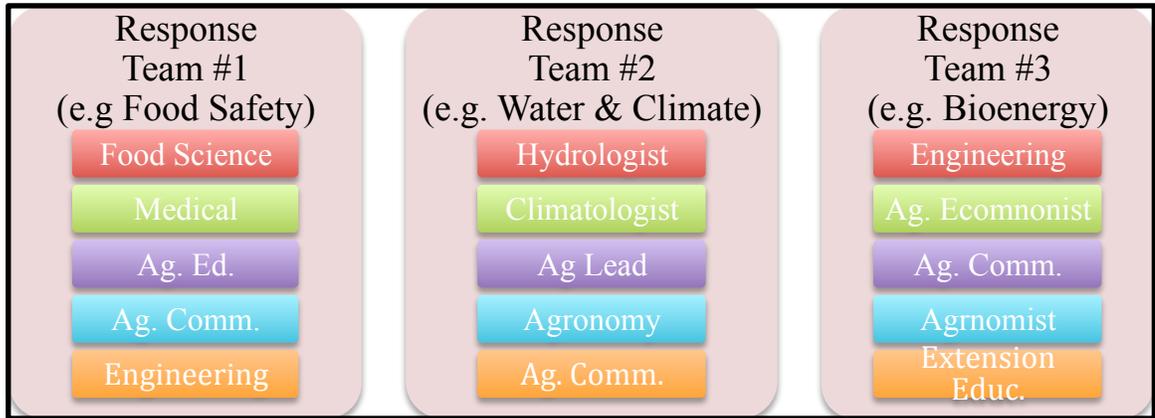
Figure 1

Figure 1: Potential Restructuring to Facilitate Transdisciplinary Research and Teaching at the University Level

    While Zagar and Evans leapt from the year 2525 to another 7,070 years into the future, we will not attempt such an Olympian feat. Rather, we hope that our words serve to stimulate thoughtful discussion of our future. With the belief that our future will be different from today, we must lead and shape that change, versus waiting for undesired changes to be placed upon us. Let us begin the discussion with the mindset that our work must evolve, our department structures need to change, and our degree programs must change to meet the needs of today of tomorrow. Perhaps in 150 years, our descendants will write the next version of Zagar and Evans song.

    In the year 2163,
    What we envisioned is now for all to see,
    While technologies have come and gone
    Agricultural communications is still growing strong!

References

Boone, K., Meisenbach, T., & Tucker, M. (2000). Agricultural communications: Changes and challenges. Ames, Iowa: Iowa State University Press.

Godfrey, J. & Wood, H. (2003). The consumer's perception of agriculture and how we can influence it. RASE Journal, 164. Retrieved June 28, 2006, http://www.rase.org.uk/activities/publications/RASE_journal/search.asp?ShowYear=2003

Goodwin, J. N., Chiarelli, C., & Irani, T. (2011). Is perception reality? Improving agricultural messages by discovering how consumers perceive messages. Journal of Applied Communications, 95(3), 21-33. Retrieved from http://journalofappliedcommunications.org/2011/12--volume--95--no--3.html

SongLyrics (2013). Zager & Evans - In The Year 2525 lyrics. Retrieved from http://www.songlyrics.com/zager-evans/in-the-year-2525-lyrics/

Commentary

Telg, R. & Irani, T. (2012) Agricultural communications in action: a hands-on approach. Delmar Cengage Learning, Clifton Park: NY.

Tucker, M., Whaley, S.R, & Cano, J. (2003). Agricultural education and agricultural communications: Striking a proper balance in the academy. Journal of Agricultural Education. 44(1), 22-30.

United Nations, Department of Economic and Social Affairs, Population Division (2011). World Population Prospects: The 2010 Revision, Highlights and Advance Tables. Retrieved from http://esa.un.org/wpp/documentation/pdf/WPP2010_Highlights.pdf

Harnessing Science to Strengthen Communication of Scientific Findings

K. Robert Kern

Remembrances of an ACE member who was around when it started to happen.

Extension appointments accounted for most of the agricultural editors from the early days of activating the Smith-Lever Act (1914) that created the three-way sponsorship of agricultural extension¬. A lot of experiment stations had research editors before that, but interest was stronger in serving other researchers than users of new technology. Some state extension services had editors already, mainly at the state\agricultural college. In fact, some of these editors had created their own interest group in 1913—before the Smith-Lever Act was passed; they called it the American Association of Agricultural College Editors; AAACE—Ace long before the name changes of the 1970s and later. Most of those writer-editors in AAACE came to the college offices from backgrounds in commercial print media or from journalism departments at the sponsoring colleges. Along with the research and organization specialists they served at state and county levels, extension appointees, including the writer-editors, understood the two goals they were charged to support under the federal extension act: (1) to disseminate "useful and practical" information and (2) to "encourage" its application.

From the beginning, then, the extension writer-editors understood that they focused on behavioral change in target audiences—they were not simply news reporters. They looked largely into their own upbringing to know and understand behavior of their primary audiences—many agricultural editors were reared on farms, home economics editors in farm homes; their strategy for communicating and influencing through communication was home-grown. Their application of science might have included the Scientific Method to state and analyze a problem, consider alternative solutions, then choose and activate one (or more) of those solutions.

That was the "science" that Hadley Read, one of the great AAACE innovators of the mid-20th Century, brought to his ag journalism class at the University of Illinois in 1948.

Some people in other fields were exploring science in search of ways to influence audience behavior. Political scientists seemed the most prominent. The journalist-columnist Walter Lippmann had in 1922 written of stereotypes as behavioral factors, people's short cut to making sense of complex policies and people—pictures in their heads. A PR man named Lee had converted the image of Robber Baron John D. Rockefeller to a kindly old grandpa by having him hand out shiny new dimes to kids. George Gallup, at the University of Iowa, had created the Gallup Poll for gauging public opinion; German immigrant Dr. Rudolf Flesch, and some others, were studying how to improve understandability of the written word. These people were using science to study communication. A nephew of Sigmund Freud, Edward Bernays, had pulled together his scientific views on how to influence people in a small book in 1947 under the title of *The Engineering of Consent*.

The big boom in communication science in this country came as an adjunct of the World War

II effort: the Yale studies of human communication yielded experimental data about factors of communicator credibility; relative strengths in order of presentation for influencing audiences, and lots more. Several publications were using science to measure factors affecting audience attention and readership. One of the earliest and most successful of these was an Iowa friend of George Gallup, Don Murphy, editor of *Wallace's Farmer* magazine, created years earlier by ancestors of the fabled family of Henry A. Wallace, the New Deal Secretary of Agriculture. Not all editors took to the idea: one, Ben Hibbs, editor of *Saturday Evening Post,* I think, wrote his opinion under a title something like, "You can't edit a magazine by arithmetic." (Of course, he had to admit later that "arithmetic" had a lot to offer.)

I did my own first searches for scientific literature in human communication in 1951. I remember reading Rensis Likert's first article, getting interested in, and using the Likert five-point scale for measuring attitude. Attitude scales and Chi-Square for statistics seemed our useful tools. However, as a grad student and staff member at Iowa State, I soon came under the spell of Snedecor's *Statistical Methods*—Snedecor, of course, was the fellow who created the F Test of significance for the Britisher, Fisher's, analysis of variance, the workhorse for measuring confidence in experimental results.

At the time, a number of land-grant universities were offering courses, some giving degrees, in agricultural journalism—Iowa State's was the first with a course in 1907 and a degree after 1914. Only a handful had research programs going—essentially to serve those who were after advanced degrees in the field and had to write a thesis. Wisconsin and Cornell seemed to lead the pack at the time, as far as I knew. Iowa State was in it to a degree, although it had no committed researcher on its journalism faculty.

The Wisconsin Ag Journalism people, led by the legendary Bryant E. Kearl (a Ph.D. in political science) were doing some process research and a lot of what Bry called "administrative studies:" who was getting and reading newsletters?, what were dairymen's information sources?, what was the best time to reach farmers with radio?, etc.

It must have been 1952 when I got almost a 70% return to a mail survey on where farmers learned of an outlying research farm field day—using personalized follow-up letters. Lester A. Schlup, then head of the information group in Federal Extension Service, included my little article in his weekly newsletter to the state editorial offices. Such reports were showing up now and then, also in the infrequent AAACE newsletters.

Interest in communication research was popping up in many places; like bits of yeast in bread dough, pockets of fermentation started. In 1952, Dutch Elder, the editor in Iowa and one of AAACE's gifted statesmen, got a USDA contract to produce and broadcast a series of economics programs on the then-new television medium: could you "teach" economic principles on television. I was assigned part-time to do the audience research—concurrent telephone surveys of samples drawn by then-new area-sampling techniques invented by a student of Snedecor at Iowa State.

That project, and Dutch Elder, got me a research-reporting slot on a regional AAACE meeting at Purdue University (shortly after Ralph Reeder began his time there); also on the program of the national meeting at Berkeley in 1953. I think it was at Berkeley where we had a small research committee session; one of the guys there was Minnesota's Phil Tichenor, then a grad student at nearly Stanford University—there were others whom, sadly, I no longer remember; one was probably Bob Ames from Cornell, a stalwart in the ag communication program there—his chief, Bill Ward, was AAACE president that summer.

These were the times when some dreamers in AAACE began the process that led to the major

introduction of science into operations of land-grant (and USDA) editorial and communication services, The National Project in Agricultural Communication. (If you haven't already, you should look for Mason Miller's treatment of this historic introduction of communication science to AAACE.)

The first I heard of what became NPAC came from Francis Byrnes, then editor at Ohio State, at a less-than-regional gathering of staffs from eight Midwest states for an informal weekend of professional-improvement interaction. We met at White Pines State Park in northern Illinois; most of us could take a state car to the border, then just drive on the rest of the way into Illinois. Byrnes, Elder (who later chaired the board of NPAC), Read, Kearl, Harold Swanson, Minnesota, and others talked about a program that would introduce AAACE members to this emerging science of human communication.

With financial backing of the Kellogg Foundation, Battle Creek, MI, NPAC was created and its key staff of five began work in about 1956—Byrnes was one of that staff, associate director. By 1957, when I was on a Kellogg fellowship for doctoral studies at the University of Wisconsin (in the National Agricultural Extension Center for Advanced Study), NPAC was a functional center. Its research director, Dr. John Parsey, had launched a search for published and fugitive reports of research related to communication in agriculture. He created *Agrisearch,* a 4- to 6-page publication in which he (and grad students at Michigan State—including Hal Taylor, Don Wells, Bob Crom, Mason Miller, and others) reviewed studies on a specific aspect of communication, such as role of color in a pamphlet, measuring readability of printed material, the diffusion process, etc. In addition to reporting study method and the review of findings, the research staff gave its rating to each reported finding, ranging from strongly supported, still questionable, to not-supported. These periodic reports went in bulk to the editorial offices, perhaps the first time many AAACE members had been targeted with such information. Not everyone was supportive. Some old-timers were heard to remark, "Hell, I could have told you that without the expense of a study." And we might remark, "And it's nice now to know that you were right."

The great leap forward, in my opinion, came from the workshops offered by NPAC to the states and federal offices. The first workshop series—and probably the most powerful of all—was *Basic Communication.* NPAC had been established at Michigan State University—just a year or so after it shifted from MSC to MSU. Its academic home was in the College of Communication, whose dean was Gordon Sabine, a former faculty member from the Journalism Department of the University of Iowa.

NPAC brought advisory contingents to East Lansing to contribute on matters of content and teaching approach for the workshops. As a grad student at Wisconsin, I was invited to one of these sessions, over a long weekend—among probably a dozen others, including George Axinn, who was the first AAACE member to earn a Ph.D. from the extension project in Wisconsin, Roger Lawrence, extension training specialist in Iowa, and others from around the country. That planning group also included the cluster of communications, sociology, and psychology people at Michigan State, as well as, from Iowa State, George Beal and Joe Bohlen, the pair who did more than any others (before Everett Rogers) to collate and disseminate the findings of numerous rural sociologists who studied the field of diffusion of agricultural practices.

This workshop may not have been the origin of the (David) Berlo communication model, but it diffused it over the U.S., perhaps smoothing the way for Dr. Berlo's textbooks and world-wide academic contributions.

Another workshop was produced for visual communication; and there may have been a third

round. These workshops introduced an innovation in training within the land-grant colleges: to participate, each college paid a significant "enrollment" fee, designed to pay for the materials and staff required to teach the workshop—and included materials for its own Train-the-Trainer effort (another NPAC innovation). My colleagues and I at Iowa State did not take part, although several of us had been involved in the development and planning. That was the sticking point: our dean and director pointed out that his budget had paid travel costs and given staff time of at least four of his faculty for the planning: he was not going to pay again for what his staff contributed! A questionable logic, but one that stuck and kept us out.

NPAC was not the lone motivator of interest in harnessing science to strengthen communication of scientific findings. Much was happening in the business world, especially related to influencing customers through advertising and public relations. Dr. Gearhart Wiebe, director of research for the CBS Network, published an article in the early 1950s that got wide coverage: *Can You Market Citizenship Like Soap?*" Wiebe spoke on the annual-conference program of the Iowa Cooperative Extension Service.

It was 1954 when I chaired the annual-conference planning committee for the Iowa Extension Service. A major feature of that program was a presentation by Beal and Bohlen on four giant (4 by 8 feet) flannel-boards of The Diffusion Process. They had reviewed the research on diffusion for the North Central Regional extension sociology committee, whose director-sponsor was Dr. Marvin Anderson, associate director of the Iowa extension service. The publication that resulted became the basis for their presentation—the inspiration for the staging came from a colleague who had seen the flannel-board, dual-presenters model when Candace Hurley, Iowa State home ec editor, and I developed it for training sessions with Iowa extension staff.

Dutch Elder was program chairman for the 1955 AAACE conference at Omaha—he didn't get to attend it because he was the major support staff handling the tour by the first delegation of Russians who came to see modern agricultural practices in the United States. He had booked Beal and Bohlen to lay out The Diffusion Process for AAACE members. I recall Beal reporting, when he and Joe came to my hotel room for a breather after 40 minutes of post-presentation time with audience members, that they were already booked for state extension conference presentations in four states! An interesting sidelight was that their presentation took them before countless industry and educational audiences around the nation.

NPAC ended when the original agreement and funding ran out. Efforts to extend it did not bear fruit. But many dozens of AAACE members and state and federal extension staffs had been exposed to the emerging science of human communication. One convert was Ralph Reeder, head editor at Purdue University. Following his participation in the workshop, Reeder set off for East Lansing, where he enrolled to earn his master's degree in communication. His practice in communication never lacked its foundation in science and scholarship. Dozens of others unknown to me were encouraged into graduate work; for some, research and scholarship became the leading passion in their work as communicators. Many stayed on in the departments of their advanced study; they became contributors to the science of their field.

The case of Everett Rogers gives some sense to the expansion of science to applied communication. Rogers, who did his academic work in sociology at Iowa State—and did a diffusion study for his doctoral dissertation—was on the Michigan State faculty when NPAC ended. Its research director, Parsey, had canvassed academic institutions and personnel for studies related to agricultural communication. In his files were reports (ranging from refereed journal articles to so-called fugitive

papers) of at least 521 studies. Rogers was offered these files, and he accepted them. The result was the first edition of his *The Diffusion Process*. From that beginning, he continued to gather diffusion studies literature, widening his screen beyond agriculture to industry, education, marketing—wherever scholars studied diffusion of practices or information, including the burgeoning literature from international sources.

In the middle 1970s, several of us (including Reeder) asked for an AAACE task force to look into ways of contributing a scientific emphasis for our colleagues in AAACE. NPAC had ended nearly two decades ago, but the research and scholarship had doubtless extended the frontier of the science NPAC brought to us. Cordell Hatch, Penn State, another who got his Ph.D. at the Wisconsin center, was ACE president (for the name change); he appointed the task force.

We on the ACE task force assumed that literatures had expanded with research and scholarship related to applied communication. We proposed a short-term reactivation of the NPAC model: gather the information, conduct a workshop.

Don Wells, an AAACE member from the early 1950s and more recently the head of graduate studies at Iowa State's Journalism and Mass Communication Department, served on the task force. With inputs from others, Don and I laid out a three-year program for updating current ACE members. We proposed to recruit, for each of the key areas of scholarship, a current scholar whom we would finance for a limited period of time in which he/she would review the current status of science in that area. The scholar would then take part in one or more workshops for sharing that current status with ACE members.

With only a single director and secretary, employed for a period of three years, the project would assemble the scholars, process written documentation, and plan a limited series of workshops to share current status with ACE members. Then we would close down the program.

The budget that Don and I put together would have required in 1980-83, about $3 million. We didn't find an angel for such an ACE production. Don stayed with his role in graduate-study supervision; I took early retirement from Iowa State and moved toward the following 22 years of fascinating work in international agricultural and environmental communication.

Before that move, to show some return for the task force investment, Hal Taylor, then leading the information group in USDA, and I worked out a project. Using the interagency option of one agency seconding staff of another agency, I took leave from Iowa State, rented a flat in Rosslyn, VA, and spent more than five months reading in the Library of Congress. Despite the Library's antiquated (pre-computer) lending system at the time, I reviewed periodical literature in a dozen and a half fields of scholarship. My focus was on what's new in scholarship in this field—that is, what do the scholars know now that they didn't know in 1960? The result was a fat issue of *ACE Quarterly*, one article under the title (if I remember correctly) "At Liberty in the Library of Congress."

Much has happened since 1980, of course. Several institutions have built research more centrally into their applied-communication teaching programs. ACE has evolved to have researchers play a significant role in annual conferences and in providing content for its *Journal of Applied Communication*. The University of Illinois, which didn't have an ag communication major when I graduated there in 1948, maintains and builds a remarkable document service available to all who are interested.

It's a different world than I knew in 1950. Perhaps an ACE member today has all the research and scholarship support she/he needs. But I wouldn't bet on it.

The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl

Courtney Meyers

Book Title
The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl

Author
Timothy Egan

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Summary

During the summer of 2012, nearly 80% of all U.S. agricultural land was impacted by drought, which the USDA's Economic Research Service (2012) labeled as the "most severe and extensive drought in at least 25 years" (para. 1). Drought conditions during this timeframe made many people draw comparisons to the Dust Bowl of the 1930s (Botelho, 2012).

In June of 2012, I was making preparations for a graduate level course I teach called "Foundations of Agricultural Communications." The purpose of this course is to explore historical foundations of agricultural communications including selected philosophical concepts, how the field has changed over time, where it is today, and what it may look like in the future. The course also focuses on selected communication theories and their application and relevance to current issues in agriculture and agricultural communications.

I had started to contemplate the various assignments in the course and learned of the book selection for Texas Tech University's President's Reading Program – "The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl." It was a serendipitous choice. Although the book does not directly address the history or philosophy of agricultural communications, it does contain details and stories of one of the worst ecological disasters in American history. Additionally, it had direct connections to agriculture and to the South Plains area of Texas, where the university is located. Graduate students should be challenged through reading assignments to make connections to broader concepts or theories and this book provided an opportunity to do so. Because the book is not a straightforward history of agricultural communications, it encouraged students to adopt a more comprehensive view of this event in American agriculture history and more deeply consider the role of communication efforts.

The author, Tim Egan, is a New York Times journalist who has written several other books. "The Worst Hard Time" won the 2006 National Book Award for Nonfiction, attesting to the quality of research and writing. Egan is a talented writer who delivers a powerful story through his gift for prose. The book provides first-hand accounts of several families who lived through the Dust Bowl and is organized into three sections – Promise: The Great Plowup, 1901-1930; Betrayal, 1931-1933; Blowup, 1934-1939. The majority of the book is dedicated to the Blowup timeframe. In each section, connections can be made to the agricultural practices and the variety of communication methods used before, during, and after the Dust Bowl era.

Students in the course were required to read the book and focus on how communication efforts both encouraged the intensive farming practices that lead to the Dust Bowl and how communication was used to eventually help preserve the area's natural resources. At the end of the course, students wrote a reflection paper that addressed three questions: 1) How did the book make you feel? 2) What connections to agricultural communications did you find? 3) What additional historical research in agricultural communications is needed? For the first two questions, students had to provide three specific examples from the book on which to elaborate. The response to the final question could be something related to the book's content, or another topic altogether.

When asked to provide examples of agricultural communications, students mentioned many items but most focused on four key aspects: (1) newspapers, (2) movies and newsreels, (3) photography, and (4) persuasive communication.

One of the most colorful characters described in the book is John L. McCarty, who was the owner and editor of the "Dalhart Texan" newspaper in Dalhart, Texas. McCarty practiced questionable journalism in order to encourage and sustain Dalhart's population growth during the early 1900s.

> It steamed John. L McCarty, sitting in his editor's office at the Texan, working to keep alive the Dalhart vision. The town had nearly eight thousand people now, almost double what it was ten years ago. In McCarty's mind, it would double again by the end of the 1930's. But Dalhart needed to be slapped to its senses time and again, and it was the job of the loudest voice in the Panhandle to do just that. (p. 94)

The students were able to identify McCarty's lack of objectivity while acknowledging his persuasive ability. He was able to rally nearly 2,000 people to a fenced field in Dalhart to club to death thousands of jackrabbits. When he learned of approaching hazardous dust storms, he would bury the news inside the paper instead of giving it prominent coverage. As the newspaper editor, he used a column in the paper to add his "spin" to the news of the day while remaining a steadfast promoter of Dalhart. Students frequently discussed the gatekeeping and agenda setting theories in relation to McCarty's ability to use the newspaper to influence public opinion.

The second prominent aspect of the books students often mentioned was the use of movies and newsreels to show the Dust Bowl to those who did not live in this region of the country. One particular movie was discussed in detail – "The Plow That Broke the Plains." This documentary film by Pare Lorentz was originally intended to be a Hollywood motion picture, but when Hollywood refused the film, the U.S. government provided funding. In 1935, Lorentz and his crew filmed the ravaged areas in six states, with the most disturbing footage coming from the Panhandle region of Texas. Lorentz captured the aftermath of years of intensive farming and drought. Egan writes that the film "would be one of the most influential documentaries ever made, the only peacetime produc-

tion by the American government of a film intended for broad commercial release" (p. 252).

This film was distributed widely to show audiences in other parts of the country the ruination of the Great Plains. The cinematic portrayal was able to convey the suffering and desperation in a more emotionally impactful way than news reports or even photographs could. Students in the course discussed the inherent strengths and weaknesses of various forms of media to convey messages.

In addition to the visual impact of motion pictures and newsreels, students focused on the use of photography to capture and demonstrate the tragic circumstances for the Great Plains region and the people who lived there. In his chapter on Black Sunday, Egan includes the story of an AP reporter, Robert Geiger, and photographer, Harry Eisenhard, who were in the Oklahoma that fateful day April 14, 1935. Eisenhard took a photograph of the approaching dust cloud, estimated at several thousand feet high; the photo appeared in newspapers all over the world. In fact, Geiger actually coined the term "Dust Bowl" in one of his reports.

'Three little words, achingly familiar on a Western farmer's tongue, rule life in the dust bowl of the continent – if it rains.' The three little words did not stick as much as the two, and thereafter, headline writers, politicians, and newsreels referred to the airborne part of the southern plains by its new name: the Dust Bowl. (p. 222)

Another aspect of photography highlighted in the book was Roy Emerson Stryker's efforts to document the Dust Bowl through a team of photographers working for the Farm Security Administration. The photographs were originally requested for propaganda purposes to support President Roosevelt's campaign for a second term, but "the government photo unit provided to be one of the lasting and most popular contribution of the New Deal, far outliving its propaganda purposes" (p. 248). Egan explained that many newspapers and newsreels included images of the dusters, but they often overlooked the impact of these storms at the ground level. "It was rare to see the lines in a sandblasted face, or look into the eyes of a broken nester, or see a woman nursing her child slumped next to a jalopy loaded with all her worldly goods" (p. 248). The FSA photographers captured these images, some of which are now quite famous. Students recognized the emotional quality these photographs conveyed while admitting it was heartbreaking to see the faces of those so impacted by the devastation.

The final major aspect students frequently mentioned was the use of persuasive communication. In the 1800s, this region of the country suffered from a negative perception as being the "Great American Desert." Stephen Long used these words in 1820 to describe the area and wrote: "In regard to this extensive section of the country, I do not hesitate in giving the opinion that it is almost wholly uninhabitable by a people depending upon agriculture for their subsistence" (p. 23).

In order to attract investors and settlers to the area, many syndicates and salesmen used communication efforts that contained misleading or completely false information. In the early 1900s, the Southwestern Immigration and Development Company used pamphlets and fliers to promote the availability of arable land in the south plains. This company used blatant lies to encourage settlers to move to the panhandle area of Oklahoma and Texas.

Hope died the first time people laid eyes on Boise City, Oklahoma. It was founded on fraud. Even the name itself was a lie. Boy-City, the promoters pronounced it, from the French words le boi – trees. Except there was not a single tree in Boise City. Nor was there a city. (p. 32)

Egan explained that the company sold lots for a town that did not exist. The brochures promoting the city had images of paved streets lined in trees with businesses already established. Everything was a lie and the settlers who paid for lots did not even know until they arrived to find nothing, not even the hint of an established city. The aggressive and often erroneous sales tactics lead to the rapid settlement of the Great Plains and eventual ruination of the native grasses that had kept the soil from being moved by the fierce winds. Students discussed the ethics surrounding these tactics and noted the involvement of the federal government that endorsed claims that the area was ideal for plowing and planting.

In addition to highlighting references to agricultural communications, students were asked to provide suggestions for historical research in our discipline. This book encouraged those discussions because it is an excellent example of in-depth research. Egan provides extensive notes to document his years of research efforts that included interviews and document analysis. While reading this book, not only do students learn more about this period in history, they are also exposed to the amount of time, energy, and research that went into the writing process. Egan keeps record of the sources for this information and students were able to understand the sheer volume of references necessary to write a high quality research project.

"The Worst Hard Time" is an excellent read for those interested in agricultural history. I thoroughly enjoyed reading it, and I know my students did as well. I will continue to require students in the course to read the book because it demonstrates the influence communication can have on what we know, do, and believe. I strongly recommend others read this book and think about how it could be incorporated in their own profession.

Students in my course were able to make connections to the overarching themes of the book and we addressed a variety of thought-provoking questions: Are we headed to another Dust Bowl if we do not change how this area is farmed? What communication efforts will it take to change farming practices? What can be done to help those who are not directly involved in farming better understand the complexity of the industry?

In 1936, the Great Plains Drought Area Committee provided a report to President Roosevelt to explain why the Dust Bowl had occurred and what could be done to prevent the area from becoming any more desolate. The report concluded by saying:

> "The situation is so serious that the Nation, for its own sake, cannot afford to allow the farmer to fail…We endanger our democracy if we allow the Great Plains, or any other section of the country to become an economic desert" (p. 269).

This noble statement demonstrates the significance of this period in our American agricultural heritage. We should learn from the lessons of this tragic historical event so we do not relive it.

References

USDA ERS (2012, December 11). U.S. Drought 2012: Farm and Food Impacts. Retrieved from http://www.ers.usda.gov/topics/in-the-news/us-drought-2012-farm-and-food-impacts.aspx

Botelho, G. (2012, September 15). Drought of 2012 conjures up Dust Bowl memories, raises questions for tomorrow. Retrieved from http://www.cnn.com/2012/09/15/us/drought-by-the-numbers/index.html

Chalkboards to Virtual Environments: Technology's Role in Expanding the Classroom to Provide Professional Development and Education for Agricultural Communicators

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Abstract

Agricultural communications education has evolved over time, shifting in an effort to meet the needs of students through new approaches, new methods, and new technologies. The purpose of this paper was to examine the influence of educational and communications technologies on agricultural communications education. A literature review related to the history of the processes, methods, and technology uses in education and more specifically in agricultural communications education was conducted. Technology was identified as enhancing learning in settings that included secondary education, university settings, continuing education, Extension programming, and professional development. Only a limited number of articles specifically addressed the use of technology to teach agricultural communications. The high rate of change in communication technologies was identified as a critical reason for considering the role of technology in the agricultural communications education context. A virtual environment to teach crisis communications was shared as an example of successful educational technology use. Continued research focusing on teaching methods and tools related to agricultural communications education is needed. New technologies have the potential to encourage innovative learning experiences; however, the ongoing challenge to educators will be to harness the technology for the good of the learner.

Keywords

agricultural communications, education, technology, distance education

Introduction

Communications education, and more specifically agricultural communications education, has evolved over time, shifting in an effort to meet the needs of students through new approaches, new methods, and new technologies. As articulated by multiple authors (Boone, Meisenbach, & Tucker, 2000; Tucker, Whaley, & Cano, 2003), agricultural communications emerged more than 200 years ago as a result of the need to reach diverse audiences with agricultural information, while the field and teaching of agricultural communications did not emerge until 100 years later.

In 1922, Adams summarized the teaching of agricultural communications as "the training of students … who will have to write in farm and home terms on agricultural and domestic science topics,

to think honestly and straightforwardly, and to express themselves according to … Accuracy, Brevity, and Clearness" (p. 40). While the basic premise of this statement remains true today, the field of agricultural communications has expanded far beyond the written word to include areas such as public relations (Sitton, Cartmell, & Sargent, 2005); social media and its impact on beliefs, attitudes, and behaviors (Allen, Abrams, Meyers, & Shultz, 2010; Graybill-Leonard, Meyers, Doerfert, & Irlbeck, 2011); changes in the agricultural industry audiences; and changes in communications practices and technologies related to agriculture (Doerfert & Miller, 2006). This history of expansion from print-only roots continues to challenge agricultural communications educators as they strive to reflect the agricultural industry's shift to more technology integration into their delivery of education.

The delivery of effective instruction has arguably been found through a focus on teaching and learning strategies that account for student's abilities to construct knowledge based on previous experiences (Kort, Reilly, & Picard, 2001). Beyond the student's educational experiences, it is critical to recognize that learners have also changed due to the influx of technology in their personal lives including, but not limited to, television, the Internet, gaming devices, and mobile communications technologies. Resultantly, learners in today's classrooms are foundationally different in how they process information and reason through issues (Prensky, 2001), and the technology used in the classroom exposes students to bodies of information and tools for practice more than ever before (Darling-Hammond & Bransford, 2005). Awareness of how technology can be used to enhance and extend learning within the context of agricultural communications education is critical for our discipline if we are to be successful in adapting to what is required to prepare graduates for entry into our profession and the broader agricultural industry and global society.

Purpose

The purpose of this paper was to explore the evolution of the use of technology in agricultural communications education in regard to processes and methods. Understanding the past provides guidance for the future, and it is the purpose of this paper to provide a concise look back at and a purposeful look forward to educating individuals in the field of communications, specifically in agricultural communications.

Methodology

To accomplish the purpose, we conducted an integrative literature review (Torraco, 2005) related to the history of the processes, methods, and technologies in agricultural communications education because, often times, forward movement benefits from a review of the past. Torraco (2005) suggested conducting an integrative literature review to provide a new way of thinking about old topics or to discuss emerging research. "The integrative literature review is a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated" (Torraco, 2005, p. 356). The history of the processes, methods, and technology uses in agricultural communications education fits into both categories proposed by Toracco (2005) because of its existence since the 1920s and the continuously changing communication technologies and mediums used in the agricultural communications profession (Boone et al., 2000).

Agricultural communications programs were created because of the need to disseminate agricultural information efficiently and effectively (Duley, Jensen, & O'Brien, 1984). As agricultural science, technology, and communications media evolve, the need for current curriculum and teach-

ing methods and strategies increases. Further, agricultural communications educators are concerned about preparing students with the most up-to-date communications skills without losing sight of the importance of teaching students technical agricultural information. Because of the focus on summarizing and documenting agricultural communications teaching methods and processes, the critique process was based on identifying elements that had been documented regarding teaching processes and technology uses.

As the basis of this literature review, we reviewed four journals that publish research articles related to agricultural communications education— *Journal of Applied Communications, Journal of Agricultural Education, Journal of Extension,* and the North American Colleges and Teachers of Agriculture publication, the *NACTA Journal.* Initially, each journal was reviewed for articles that specifically related to the teaching and learning processes, methods, and technology uses in agricultural communications. However, the search was widened to include articles from a broader perspective of teaching and learning to allow for a more comprehensive picture of teaching and learning methods, processes, and technology uses. The journals were searched using specific key words: *agricultural communications history, teaching agricultural communications, technology impacts on education, multimedia, online video conference, agricultural communications education, instructional design, teaching strategies, and learning strategies.* In some instances, the search terms were combined to locate articles of interest. Additionally, a broad search utilizing Google Scholar was conducted to identify a variety of additional journal articles related to the key words. Articles had to meet at the least one of the following criteria to be reviewed:

- Historical context of agricultural communications;
- Mention of technology use in agricultural communications;
- Study of teaching methods in the context of agricultural communications or general agriculture; and/or
- Use of technology to teach agricultural communications or general agriculture.

Each article was examined for information that could explain uses of technology as a teaching tool, processes of teaching, or methods to facilitate learning. Only a limited number of articles specifically focused on these topics in the context of agricultural communications. Additionally, information related to teaching crisis communication was used to provide one example of an approach to teaching an agricultural communications topic.

Findings
Historical Background

As shared by Doerfert and Miller (2006), "[t]he first course in agricultural journalism was taught in 1905" (p. 18). Substantial change has occurred since 1905, including both content of courses and teaching methods. The role of technology in the form of print publications, radio, and movies shaped agricultural communications (Tucker et al., 2003) into what it is today much like technology is shaping the way that education in being delivered.

As early as 1989, Extension employees recognized that technology was emerging and that it would alter the way information was distributed. Technologies such as "television, telephone, radio, and data transmissions" (Ezell, 1989, p. 1) were predicted to merge into one communications network with several facets instead of individual networks. Ezell (1989) stated that "the real issue is

how Extension professionals will interact with technology" (p. 4), instead of the technology changes themselves.

A nationwide study conducted by Murphy and Terry (1998) regarding technology use for instruction concluded that "[e]lectronic communication, information, and imaging technologies [would] improve how we teach in agricultural education settings" (p. 34). While the authors agreed that various technologies would be adopted at different rates, technology was predicted to increase access to information and provide "teaching aids to … meet the needs of the diverse learning styles of students" (p. 31). In fact, the delivery of courses via distance education technologies has become common across agricultural education departments (Roberts & Dyer, 2005).

Technologies can be used in many different ways and combinations for teaching and learning, and not just for distance education. In studies that compared traditional instruction with instruction utilizing multimedia, the latter have been found to reduce student learning time (Marrison & Frick, 1993) and improve information retention (Shanthy & Thiagarajan, 2011). "Increasingly, many concepts and ideas cannot be taught without the aid of technology to represent and manipulate them" (Molnar, 1997, p. 5). However, the use of technology to teach is not without barriers as a study conducted by Irani and Telg (2001) reported the need for distance education training for faculty. Time, resources, and motivation were shared by faculty as critical elements that impact the actual implementation of distance education.

Technology Integration into Education

Research focused on technology use for educational purposes has primarily been conducted in traditional educational settings and has not included a substantial number of studies related to agricultural communications education. Teaching methods and processes have evolved mirroring the evolution of technology from the use of hand drawn images to overhead projectors; video players to YouTube; and face-to-face simulations to online sessions via the Internet. Technology was identified as enhancing learning in settings that included secondary education, university settings, continuing education, Extension programming, and professional development.

A review of the *Journal of Agricultural Education* revealed articles focused on technology use and distance education. "Use of Computer Technology by Teacher Education in Agriculture Programs: Student Experiences and Programming Applications" (Bowen, Mincemoyer, & Parmley, 1983) is an early example of an attempt by researchers to document technology use for education. Since then, multiple articles focused on different areas of distance education [e.g., faculty perceptions (Murphrey & Dooley, 2000), perceptions of technologies for teaching (Dooley & Murphy, 2001) and student perceptions (Kelsey, Lindner, & Dooley, 2002)] have been published. More recently, studies have addressed student preferences related to specific technologies. Murphrey, Rutherford, Doerfert, Edgar, and Edgar (2012) found that students accepted content management systems as a "useful educational technology" (p. 56) while other technologies (i.e., Second Life, social networking, and Twitter) were not as accepted. Strong, Irby, Wynn, and McClure (2012) evaluated student satisfaction with courses delivered online and found that the creation of social presence could impact student satisfaction, and the authors recommended the use of social media technologies. However, Settle et al. (2012) reported that instructors should be aware that students hold "discrepant" (p. 137) views of social media when used for educational purposes; those students who are familiar with it are more positive than those that are not.

A review of articles within the *Journal of Extension* revealed a plethora of articles related to using

technology to teach specific topics. Recently, the *Journal of Extension* reported several topics that have been taught using technology (e.g., pork production (Bates et al., 2012), agritourism (Rich et al., 2011), food safety (Mathiasen, Morley, Chapman, & Powell, 2012), livestock bio-security (Stevenson et al., 2011), and agricultural safety (Schwab & Freeman, 2011)). The technologies to enhance instruction reported in these examples varied widely. In the study conducted by Rich et al. (2011), webinars were assessed to see if this technology could meet training needs and researchers found that this form of delivery was able to enhance programming efforts. Mathiasen et al. (2012) focused on the use of training videos to impact awareness and practices related to food safety. They reported that the videos helped meet the training needs.

Thomas, Davis, and Moss (2008) used a combination of elearning tools (i.e., WebEx, Basecamp, iPod, Camtasia, Audacity, Aggregator, Skype, and blogs) to facilitate learning for professionals about the "knowledge economy" and to guide Extension efforts in the use of distance education tools. They found that the tools were well received by participants. Individuals in the study were carefully selected and trained to encourage quality engagement and assessment.

A review of the *NACTA Journal* also revealed a significant number of articles related to teaching with technology. Topics included soil science (Mamo, Kettler, Husmann, & McCallister, 2004), agribusiness (Schurle, Stroade, & Grunewald, 2004), and landscape construction (Henry, Midden, & Lieske, 2004). Further, a study conducted by Jepson et al. (2005) to evaluate workshops intended to increase faculty use of technology in the context of animal science found these workshops to be successful.

However, only a limited number of articles were found that specifically discussed using technology to teach agricultural communications. Elefson (1992) investigated methods of improving agricultural writing but did not refer to the use of any technology. Rhoades, Miller, and Edgar (2012) investigated the use of a capstone course in improving learning, but, once again, this study did not address the use of technology. As noted previously there are many examples of how technology has been assessed to increase learning in other areas. As it has in past years, the way in which technology is used to accomplish instruction continues to evolve.

Agricultural Communications Education

Much like other disciplines, teaching in agricultural communications has evolved from chalkboards and erasers to new and innovative delivery tools. Within the literature, studies exist that have focused on the content that should be included in agricultural communications curriculum, which is guided by educational needs and competencies in the profession. Miller (1995) provided a historical retrospective that explained how agricultural communications programs and focuses have changed over time and how certain projects, associations, and organizations (e.g., The National Project in Agricultural Communications, the American Association of Agricultural College Editors) have impacted the profession.

Several authors have addressed education in agricultural communications (e.g., Adams, 1922; Boone, Paulson, & Barrick, 1993; Elefson, 1992; Reisner, 1990b) and the workplace skills graduates need (e.g., Morgan, 2012). Sprecker and Rudd (1998) reported that "communication skills … are more important than subject-area knowledge" (p. 31) when preparing students for agricultural communications. Methods of teaching agricultural communications have also been addressed. In an article by Hayes (1990), "role-playing and vigorous class discussion" (p. 9) was reported as a method for teaching ethics in agricultural communications. The authors reported that this process helped

students understand the topic. Researchers have also studied critical thinking (Bisdorf-Rhoades, Ricketts, Irani, Lundy, & Telg, 2005) and learning styles (Cartmell, Majors, Ashlock, & Sitton, 2007) in the context of agricultural communications. Bisdorf-Rhoades et al. (2005) found that agricultural communications students were "highly innovative in their thinking" (p. 25) but not necessarily critical in their thinking. This study spoke to the fact that educators need to encourage and facilitate the critical thinking process of students to better prepare them for the workplace.

As indicated by Edgar, Rutherford, and Briers (2009) in a review of research themes in the *Journal of Applied Communications* from 1997 to 2006, there is a need for research on teaching methods and technology uses in agricultural communications. The authors reported that articles related to distance education, electronic media, professional development, and instructional and program delivery approaches were limited. Further, they reported that even secondary research themes revealed only one article focused on curriculum and program development and three focused on instructional and program delivery approaches. One interesting point is that the authors identified "information sources and technology" (p. 29) as the topic that was most highly researched, once again showing the important role of technology.

Considerable attention has been paid to documenting various competencies needed within the agricultural communications field. Sitton et al. (2005) provided a list of public relations proficiencies that agricultural public relations professionals reported as most important in agricultural communications' curriculums. Computer skills (as well as skills in human relations, editing and writing) were mentioned as frequently used skills by professionals. A study conducted by Doerfert and Miller (2006) focused on gaining input from industry to prepare students for jobs in agricultural communications. Two themes revealed in this study relate to the topic of this paper: "response time for communication-related activities continues to shorten" (p. 27) and "[i]mage is increasing in importance for the agricultural industry and agricultural communications professionals" (p. 27). Both of these themes are directly impacted by ever-evolving communication technologies as information is shared almost instantaneously around the world; thus, impacting the way individuals view the agricultural industry. In fact, a competency study by Morgan (2012) revealed the need for students to have an "understanding [of] how new media is changing the industry and how to use that media effectively" (p. 17).

Technology Integration into Agricultural Communication

Part of what is driving the importance of using technology to teach is related to the rate of change in technology used to communicate. Studies (e.g., Graybill-Leonard, et al., 2011; Pritchett, Naile, & Murphrey, 2013) have been conducted regarding technologies that impact communications in general. These studies illustrate the overarching idea of technology use to further educational efforts in agricultural communications education.

The convergence of innovations impacting communications was shared by Ezell in 1989. The ideas of online conferencing, the importance of images and sounds, and even the idea of artificial reality mentioned in this article have in fact become a reality. Technology has greatly evolved since 1989. Changes in technology have created a need to change what is taught in agricultural communications courses and programs and the delivery of these courses and programs.

Research has been conducted related to technological tools and their uses in the field of communications itself. Video documentaries combined with reflective journaling were studied to determine impact on students' attitudes and perceptions of agriculture (Meyers, Irlbeck, & Fletcher, 2011).

Video use was reported to provide a means for students to "recognize the variety of opinions about the agricultural industry" (p. 93) that exists to allow students to practice "counter-arguments" (p. 93).

Graybill-Leonard et al. (2011) conducted a study about the use of social networking (specifically Facebook) to communicate, and the "[r]esults indicated that Facebook was a beneficial communication tool to help the social movements reach more individuals" (p. 45). The study revealed that the "social movements explored in this study did not exist before Facebook" (p. 53). The authors emphasized the importance of understanding that social media is being used so messages are more appropriately and effectively targeted at specific audiences.

Another communications tool is Twitter, a microblogging tool that allows individuals to send short messages to various individuals and groups. Allen et al. (2010) shared that, while the value of Twitter varies, recognizing Twitter as a tool is important. This study reported on the use of social media, specifically Twitter, across agriculture and described users as having the role of information providers and information seekers. The authors emphasized that individuals in agriculture should use this form of communication as a way to provide accurate information and provided several examples of agricultural organizations (e.g., American Farm Bureau, National Cattlemen's Beef Association) that use this form of communication. In fact, the authors reported that the Food and Drug Administration had used Twitter to announce recalls of peanuts during a salmonella outbreak, which lended further evidence to the need for awareness of this new technology. The study conducted by Pritchett et al. (2013) further encouraged the use of this technology for agricultural communications by stating that Twitter encouraged social presence.

An Example of the Future: Using a Virtual Environment to Teach Crisis Communications

One area in agricultural communications education that has been studied regarding the use of technology to teach is the instruction of skills for crisis communications in the context of agriculture. A study conducted by Leggette et al. (2012) reported how a 3-D virtual world (i.e., Second Life) was used to facilitate experiential learning in crisis communications. The researchers analyzed students' weekly journals to determine student reaction and perceptions of the technology. The researchers shared that students reported value in using the virtual world for instruction. In fact, the authors reported that students believed that the virtual environment was a "valuable educational tool and an effective way to teach crisis communication" (Leggette et al., 2012, p. 132).

In a related study that also investigated the use of technology to teach crisis communication skills, Witt, Doerfert, Rutherford, Murphrey, and Edgar (2011) analyzed teaching methods including lecture/discussion, reflection logs, case studies, role playing (both in class and online through use of a virtual environment), case study development, and creation of crisis management plans. The authors determined that "students did not identify one singular instructional method as being most beneficial and influential" (p. 34).

Conclusions and Discussion

The mention of technology by Reisner (1990a) more than 20 years ago illustrated that the evolution of technology has been a continuous process. In 1990, educational and communication technologies were not being used like they are today because technology has evolved substantially at a seemingly rapid pace. Changes in curriculum should match the changing technological needs of our students and society. Based on findings from Jepson et al. (2005), it is possible that regular workshops for agricultural communication instructors would be beneficial to increase both the awareness

and subsequent use of new technologies in teaching agricultural communications. Efforts should also be made to evaluate the effectiveness of these training activities including the extent that the training resulted in the integration of technology into educational practice.

Agricultural communications education targets a diverse set of audiences: college students, professionals, and the public. Ultimately, the effectiveness of these efforts impacts overall agricultural literacy and the understanding of agricultural information. In a time when the impact of invested resources is increasingly scrutinized, it is important to approach the educational process with methods and processes that that can have the greatest impact.

There is evidence in the literature (Bates et al., 2012; Schwab & Freeman, 2011; Thomas et al., 2008; Mamo et al., 2004) that technology can be used successfully to improve access to education and improve the learning process. However, based on the limited number of studies found that focused on technology use in agricultural communications instruction, it was concluded that additional research is needed in regard to the study of educational technologies specifically for agricultural communications. As indicated by Edgar et al. (2009) in a review of research themes in the *Journal of Applied Communications* from 1997 to 2006, there is a need for research on teaching methods and technology uses in agricultural communications. The findings from this study further support the conclusion that the need continues today.

Just as the art of typing and the use of a typewriter were once deemed important enough to be covered in an educational setting, new technologies should be assessed for similar importance. One cannot assume that students are technologically competent in new technologies, including social media, just because they are users of that technology. There is a difference between understanding how to use a technology for personal use and how to use a technology to efficiently and effectively impact a social movement or spread information about a particular topic. Educators cannot overlook the importance of understanding social media and other technologies in the context of agricultural communications. Technologies such as Facebook (Graybill-Leonard et al., 2011) and Twitter (Allen et al., 2010) have been identified as important tools in the agricultural communications industry. Given that research has indicated that social media is being used in the industry, it behooves educators to provide training and experience for students in the agricultural communications classroom that mirrors industry standards.

Bisdorf-Rhoades et al. (2005) found a need for students to engage and expand their critical thinking skills. One might ask, "is it possible that our use of technology could meet this need?" Doerfert and Miller (2006) indicated that response time is shortening and the importance of image is increasing in communications. Is it possible that both of these themes are being magnified by the changing technology and the way information can be shared because of instant access and changing communication channels?

This study focused on a review of research published in four specific journals. It is possible that studies regarding the use of technology to teach in agricultural communications has been shared at conferences or in other venues not addressed by this study. While it is believed that agricultural communications educators are using new and emerging technologies for education, only limited documentation in the research literature was discovered.

Technology comes in various shapes and sizes. In fact, using technology in teaching often reinvents itself through time. There is a need for research focused on teaching methods and tools related to agricultural communications education. New technologies have the potential to encourage innovative learning experiences. The challenge to agricultural communications educators, however, will be to harness the use of technology to benefit the learner while in college and beyond.

References

Adams, B. (1922, November). Methods of teaching agricultural journalism. The Cornell Countryman, 20, 39-40.

Allen, K., Abrams, K., Meyers, C., & Shultz, A. (2010). A little birdie told me about agriculture: Best practices and future uses of Twitter in agricultural communications. Journal of Applied Communications, 94(3 & 4), 6-21.

Bates, R. O., Ferry, E., Guthrie, T., May, G., Rozeboom, D., & Siegford, J. (2012). Assessment of pork producer educational needs for adoption of group sow housing. Journal of Extension [Online] 50(3), Article 3RIB6. Available at: http://www.joe.org/joe/2012june/rb6.php

Bisdorf-Rhoades, E., Ricketts, J., Irani, T., Lundy, L., & Telg, R. (2005). Critical thinking dispositions of agricultural communications students. Journal of Applied Communications, 89(1), 25-34.

Boone, K., Meisenbach, T., & Tucker, M. (2000). Agricultural communications: Changes and challenges. Ames, IA: Iowa State University Press.

Boone, K. M., Paulson, C. E., & Barrick, R. K. (1993). Graduate education in agricultural communication: The need and role. Journal of Applied Communications, 77(1), 16-26.

Bowen, B. E., Mincemoyer, D. L., & Parmley, J. D. (1983). Use of computer technology by teacher education in agriculture programs: Student experiences and programmatic applications. Journal of the American Association of Teacher Educators in Agriculture, 24(3), 14-21. doi: 10.5032/jaatea.1983.03014.

Cartmell, D. D., Majors, M., Ashlock, M. A., & Sitton, S. P. (2007). Assessing agricultural communications students' learning styles: A baseline study. NACTA Journal, 51(1),2 -7.

Darling-Hammond, L., & Bransford, J. (2005). Preparing teachers for a changing world: What teachers should learn and be able to do. San Francisco, CA: Jossey-Bass.

Doerfert, D. L., & Miller, R. P. (2006). What are agriculture industry professionals trying to tell us? Implications for university-level agricultural communications curricula. Journal of Applied Communications, 90(3), 17-31.

Dooley, K. E., & Murphy, T. H. (2001). College of agriculture faculty perceptions of electronic technologies in teaching. Journal of Agricultural Education, 42(2), 1-10. doi: 10.5032/jae.2001.02001.

Duley, C., Jensen, R., & O'Brien, J. (1984). A review of agricultural journalism programs in the United States universities. River Falls, WI: University of Wisconsin-River Falls.

Edgar, L., Rutherford, T., & Briers, G. (2009). Research themes, authors, and methodologies in the Journal of Applied Communications: A ten-year overview. Journal of Applied Communications, 93(1 & 2), 21-34.

Elefson, J. O. (1992). Toward teaching at higher levels of cognition: Teaching the process of agricultural writing. NACTA Journal, 36(2), 11-14.

Ezell, M. P. (1989). Communication-age trends affecting extension. Journal of Extension, 27(3). Retrieved from http://www.joe.org/joe/1989fall/a8.php

Graybill-Leonard, M., Meyers, C., Doerfert, D., & Irlbeck, E. (2011). Using Facebook as a communication tool in agricultural-related social movements. Journal of Applied Communications, 95(3), 45-56.

Hayes, R. G. (1990). An approach to including ethics in agricultural communications teaching. Journal of Applied Communications, 74(2), 9-13.

Henry, P. H., Midden, K., & Lieske, E. (2004). Comparison of instructional methods for teaching landscape construction techniques to undergraduate horticulture students. NACTA Journal, 48(2), 8-12.

Irani, T., & Telg, R. (2001). Planning for the next wave: Assessing current faculty distance education training and development needs. Journal of Applied Communications, 85(4), 7-18.

Kelsey, K. D., Lindner, J. R., & Dooley, K. E. (2002). Agricultural education at a distance: Let's hear from the students. Journal of Agricultural Education, 43(4), 24-32. doi: 10.5032/jae.2002.04024.

Jepson, P. J., Riesen, J. W., Chambers, K. O., Hafs, H. D., Schoknecht, P. A., & Pollak, E. J. (2005). Promoting cooperation to enhance teaching with technology. NACTA Journal, 49(4), 57-62. ACJ_50

Kort, B., Reilly, R., & Picard, R. W. (2001). External learning representation of a learning process and domain knowledge: Affective state as a determinate of its structure and function. Proceedings of Artificial Intelligence in Education Workshops (AI-ED). San Antonio, TX.

Leggette, H. R., Witt, C., Dooley, K. E., Murphrey, T. P., Doerfert, D., & Edgar, L. D. (2012). Experiential learning using Second Life: A content analysis of student reflective writing. Journal of Agricultural Education, 53(3), 124-136. doi: 10.5032/jae.2012.03124

Mamo, M., Kettler, T., Husmann, D., & McCallister, D. (2004). Assessment of an on-line erosion lesson as a teaching tool in introductory soil science. NACTA Journal, 48(3), 47-52.

Marrison, D. L., & Frick, M. J. (1993). Computer multimedia instruction versus traditional instruction in post-secondary agricultural education. Journal of Agricultural Education, 34(4), 31-38. doi: 10.5032/jae.1993.04031

Mathiasen, L., Morley, K., Chapman, B., & Powell, D. (2012). Using a training video to improve agricultural workers' knowledge of on-farm food safety. Journal of Extension [On-line] 50(1), Article 1FEA6. Available at: http://www.joe.org/joe/2012february/pdf/JOE_v50_1a6.pdf

Meyers, C., Irlbeck, E., & Fletcher, K. (2011). Postsecondary students' reactions to agricultural documentaries: A qualitative analysis. Journal of Applied Communications, 95(3), 82-95.

Miller, M. E. (1995). AAACE changed our lives: NPAC and agricultural communication in the '50s. Journal of Applied Communications, 79(3), 1-11.

Molnar, A. (1997). Computers in education: A brief history. Retrieved from: http://thejournal.com/Articles/1997/06/01/Computers-in-Education-A-Brief-History.aspx

Morgan, A. C. (2012). Competencies needed by agricultural communication undergraduates: A focus group study of alumni. Journal of Applied Communications, 96(2), 17-29.

Murphy, T. H., & Terry, H. R. Jr. (1998). Opportunities and obstacles for distance education in agricultural education. Journal of Agricultural Education, 39(1), 28-36. doi: 10.5032/jae.1998.01028

Murphrey, T. P., & Dooley, K. E. (2000). Perceived strengths, weaknesses, opportunities, and threats impacting the diffusion of distance education technologies in a college of agriculture and life sciences. Journal of Agricultural Education, 41(4), 39-50. doi: 10.5032/jae.2000.04039.

Murphrey, T. P., Rutherford, T. A., Doerfert, D. L., Edgar, L. D., & Edgar, D. W. (2012). Technology acceptance related to Second Life™, Social Networking, Twitter™, and Content Management Systems: Are agricultural students ready, willing, and able? Journal of Agricultural Education, 53(3), 56-70. doi: 10.5032/jae.2012.03056.

Prensky, M. (2001). Digital natives, digital immigrants. On the Horizon, 9(5), 1-6.

Pritchett, K., Naile, T., & Murphrey, T. P. (2013). Expressions of social presence in agricultural conversations on Twitter: Implications for agricultural communications. Journal of Applied Communications, 96(3), 51-64.

Reisner, A. (1990a). An overview of agricultural communications programs and curricula. Journal of Applied Communications, 74(1), 8-17.

Reisner, A. (1990b). Course work offered in agricultural communications programs. Journal of Applied Communications, 74(1), 18-25.

Research

Rhoades, T. N., Miller, J. D., & Edgar, L. (2012). Evaluating capstone courses: Employing the Five R's model to analyze an agricultural communications magazine class. NACTA Journal, 56(1), 8-16.

Rich, S. R., Komar, S., Schilling, B., Tomas, S. R., Carleo, J., & Colucci, S. J. (2011). Meeting Extension programming needs with technology: A case study of agritourism webinars. Journal of Extension[On-line] 49(6), Article 6FEA4. Available at: http://www.joe.org/joe/2011december/pdf/JOE_v49_6a4.pdf

Roberts, T. G., & Dyer, J. E. (2005). A summary of distance education in university agricultural education departments. Journal of Agricultural Education, 46(2), 70-82. doi: 10.5032/jae.2005.02070

Schurle, B., Stroade, J., & Grunewald, O. (2004). Using computer-generated modules to integrate computer applications throughout a curriculum. NACTA Journal, 48(3), 25-29.

Schwab, C. V., & Freeman, S. A. (2011). Pilot evaluation of an internet educational module for agricultural safety. Journal of Extension [On-line] 49(3), Article 3RIB4. Available at: http://www.joe.org/joe/2011june/rb4.php

Settle, Q., Telg, R., Baker, L. M., Irani, T., Rhoades, E., & Rutherford, T. (2012). Social media in education: The relationship between past use and current perceptions. Journal of Agricultural Education, 53(3), 137-153. doi: 10.5032/jae.2012.03137.

Shanthy, T. R., & Thiagarajan, R. (2011). Interactive multimedia instruction versus traditional training programmes: Analysis of their effectiveness and perception. Journal of Agricultural Education and Extension, 17(5), 459-472. doi: 10.1080/1389224X.2011.596708

Sitton, S., Cartmell, D. D., & Sargent, S. (2005). Developing public relations curricula in agricultural communications. Journal of Applied Communications, 89(3), 23-37.

Sprecker, K. J., & Rudd, R. D. (1998). Opinions of practitioners concerning curricular requirements of agricultural communication students at the University of Florida. Journal of Applied Communications, 82(1), 31-42.

Stevenson, J. L., Moore, D. A., Newman, J., Schmidt, J. L., Smith, S. M., Smith, J., Kerr, S., Wallace, M., & Boyes, P. (2011). Development and evaluation of an on-line educational module for volunteer leaders on bio-security in Washington State 4-H livestock projects. Journal of Extension [On-line] 49(4), Article 4RIB1. Available at: http://www.joe.org/joe/2011august/pdf/JOE_v49_4rb1.pdf

Research

Strong, R., Irby, T. L., Wynn, J. T., & McClure, M. M. (2012). Investigating students' satisfaction with eLearning courses: The effect of learning environment and social presence. Journal of Agricultural Education, 53(3), 98-110. doi: 10.5032/jae.2012.03098.

Thomas, J. R., Davis, G. A., & Moss, M. L. (2008). Efficacy of blended e-learning tools: A case study. Journal of Applied Communications, 92(1 & 2), 9-19.

Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. Human Resource Development Review, 4(3), 356–367. Retrieved from http://hrd.sagepub.com/content/4/3/356.full.pdf+html

Tucker, M., Whaley, S., & Cano, J. (2003). Agricultural education and agricultural communications: Striking a proper balance in the academy. Journal of Agricultural Education, 44(1), 22-30. Retrieved from http://pubs.aged.tamu.edu/jae/pdf/Vol44/44-01-22.pdf

Witt, C., Doerfert, D., Rutherford, T., Murphrey, T., & Edgar, L. (2011). The contribution of selected instructional methods toward graduate student understanding of crisis communication. Journal of Applied Communications, 95(3), 34-44.

Research

The Evolution of the Agricultural Communications Degree Program at Texas Tech University:
A Historical Perspective

Chelsey Ann Ahrens and Courtney Gibson

Abstract

Texas Tech University's agricultural communications program began in 1973. Using a historical case study research design, the researchers explored the course offerings, activities, and departmental publications during the previous 40 years. Although the program first offered the agricultural communications option, it took nearly 20 years for an undergraduate degree in this specialization to be made official. This study provides the story of how the program began and how it evolved over time. Other institutions that offer agricultural communications degrees, or are considering this program area, will learn about the gradual development of a lasting program.

Keywords

historical, degree program, agricultural communications, Texas Tech University

Introduction

In recent years, the agricultural communications degree program at Texas Tech University (TTU) has experienced a steady increase in the number of students declaring this major and eventually graduating with a Bachelor of Science in Agricultural Communications. Weckman, Witham, and Telg (2000) found agricultural communications programs have experienced a steady increase in enrollment and believe enrollment will either continue to increase or remain steady. Because of this, many agricultural colleges across the U.S. are adopting agricultural communications degree programs and are expanding current programs to include minors and advanced degrees. By understanding the history of a successful agricultural communications program, new and emerging agricultural communications degree programs can utilize that information for their own growth and expansion.

Home departments are not uncommon when new programs are being developed (Tucker, Whaley, & Cano, 2003). The Department of Agricultural Education was home to agricultural communications when an option in agricultural communications was first offered at TTU. Agricultural communications has since evolved and no longer needs a home department, but rather jointly shares a department at TTU – the Department of Agricultural Education and Communications.

Once programs are established, it is important to conduct research to ensure faculty are providing the most relevant, up-to-date information possible and meeting employer's needs. Irlbeck and Akers (2009) recommended that agricultural communications programs conduct research

to understand employer needs and improvements that can be made to current programs to meet those needs. Faculty and graduate students within agricultural communications at TTU have recently revisited the curriculum to determine if it is effectively meeting employers' needs. Surveys have been sent to alumni of agricultural communications to see if extracurricular involvement helps to gain employment, as well as to understand the average salary graduates from the program receive. Morgan (2012) conducted focus groups to better understand the competencies students in agricultural communications should possess. On the same token, focus groups have been conducted at TTU with recent graduates to understand if the curriculum offered in the department is up-to-date. As a result of these investigations, a question arose prior to an agricultural communications program meeting: "What is the history of the agricultural communications program at Texas Tech University?"

It is beneficial for faculty members, and even current students, to understand how the academic program in which they are involved has evolved over time (Knauft, 2006). This is vital because not all members of the department obtain degrees from the same institution, and even those that did may not have a full understanding of the current program's history. Knowing and understanding the history helps to shape the program and identify alumni who are currently in the workforce, which can inform the future direction of the program.

Significance of the Study

This research is a valuable aid to programs of agricultural communications for many reasons. For those who work or attend school at an institution, knowing and understanding the history of the degree program at that particular institution provides a greater appreciation and understanding of the program. Additionally, this historical case study provides a resource that individuals in other agricultural communications programs can reference if they are interested in researching their own program's history. Furthermore, agricultural communications is an ever-evolving degree program due to technological advances in communications, changing agricultural demographics, and external trends (Doerfert & Miller, 2006). To meet the challenges these factors introduce, programs must be willing to take stock of where they are and where they need to be. The findings from this research project provide documentation of the modifications to the agricultural communications degree plan including why and how the program evolved. This may serve as a model for other agricultural communications programs to develop or enhance their own curriculum.

Literature Review

Iowa State University was the first institution to offer courses in agricultural journalism in 1905 (Duncan, 1957). When agricultural communications first became an academic program, it was comprised of mainly male students who were seeking a degree that offered courses in science, agriculture and journalism (Tucker et al., 2003). Now, agricultural communication degree programs have their own courses, which have influences from journalism/mass communications, industry and academia (Tucker et al., 2003).

Sprecker and Rudd (1998) found practitioners think "agricultural communicators are not agriculturalists primarily, but communicators who have a specialty" (p. 40). Even though social media has become an important tool in a communicator's toolbox in today's technological society, the role of mass media is still important to agriculture, both in the United States as well as other countries as Irfan, Muhammad, Khan, and Asif (2006) point out. They found that mass media is an impor-

tant means of disseminating agricultural information and technologies to farmers. TV, radio and print media were the top three forms of media farmers utilized to acquire information (Irfan et al., 2006). Agricultural communications programs address each of these forms of media along with social media in a way that emphasizes their use among agriculturalists.

Knauft (2006) pointed out that many undergraduate students are not familiar with the history of the program in which they are enrolled or even the history of agriculture in their state or region. By understanding the history, students can better understand how and why programs evolved to aid in their understanding of campus policies and support for growth and development (Knauft, 2006).

To understand the history the agricultural communications program at TTU, this study was guided by the following research questions:

1. How has the agricultural communications degree program at Texas Tech University evolved?
2. Why did the agricultural communications degree program become a part of the curriculum at Texas Tech University?
3. What are the major milestones in the agricultural communications degree program at Texas Tech University?

Methodology

Qualitative research methods were utilized for this study, specifically case study and historical research methods. Case study research is when a phenomenon of interest is studied in-depth in real-life settings and from the participants' perspective (Gall, Gall, & Borg, 2007). Case study research allowed this study to focus on the agricultural communications program at TTU and provided an in-depth look into the history of the program. Thus, historical research, or the study of past phenomenon to better the understanding of something, was utilized (Gall et al., 2007).

It was also imperative to examine primary and secondary sources of information for this study. Purposive sampling was used to "maximize discovery of the heterogeneous patterns and problems that occur" (Erlandson, Harris, Skipper, & Allen, 1993, p. 82). Interviews were conducted with current and former faculty and staff members within the Department of Agricultural Education and Communications at TTU who have institutional knowledge about the program. These interviews served as sources for both primary and secondary information since some were here for most of the evolution of the degree program, but not all. These interviews can also be classified as oral histories since the individuals interviewed "witnessed or participated in events of potential historical significance" (Gall et al., 2007, p. 538). Other primary sources utilized include written documents or records and relics. Relics are objects that allow information from the past to be examined including textbooks and instructional devices (Gall et al., 2007). Utilizing the oral history interviews, written documents and records, relics, and a researcher's journal allowed for triangulation to occur. Lastly, a secondary source of information included notes from the Foundations of Agricultural Communications course, which incorporated the history of agricultural communications into the curriculum. The constant comparative method (Glaser & Strauss, 1967) was used to analyze the data.

Findings

There were no opportunities for students to seek a specific option, specialization or degree in agricultural communications at TTU until 40 years ago. Students – particularly female students

according to Jerry Stockton, Ed.D. (personal communication, January 24, 2013) – within agri-culture wanted to major in communications but still have ties to agriculture. Therefore, Thomas Luther (T.L) Leach, head of the Department of Agricultural Education at the time, along with Lewis Eggenberger, Ph.D., wanted to help these students pursue their interests of journalism and agriculture. Under their leadership 40 years ago, in 1973, an option in agricultural communications was added to the agricultural education degree program at TTU. An option is similar to what some may call a track. At TTU, the agricultural communications option or track was established in the Department of Agricultural Education. Students who decided to pursue the option took the required communications courses instead of the agricultural education courses required. For a stu-dent to obtain an option in agricultural communications, they had to complete 29 hours of courses offered through mass communications.

Dr. Eggenberger volunteered to be the adviser for the Agricultural Communicators of Tomor-row (ACT) organization shortly thereafter. ACT students published the first student publication – Aggie News – in 1974. The name quickly changed to the Ag Journal by the second issue. The Ag Journal was a college-wide newsletter the ACT members produced. In 1975, the curriculum for the agricultural communications option increased to 35 hours of mass communication credits, and in 1979, Dr. Stockton became the department head.

In 1982, the option evolved into a specialization with students completing 45 hours of com-munications credits (see Figure 1). It was at this time two agricultural communications courses were developed within the department – AGED 430 Agricultural Education Problems and AGED 431 Transfer of Agricultural Technology. These six credit hours were required along with 39 mass communications credit hours to make up the 45 hours required for the agricultural communica-tions specialization. In AGED 430, students produced The Agriculturist, a student developed and published magazine that is still produced today. ACT also hosted its first banquet. In 1983, these courses remained the same, but the numbers changed. AGED 430 became AGED 4301 and AGED 431 became AGED 4302. Two years later, the department name changed from the De-partment of Agricultural Education to the Department of Agricultural Education and Mechaniza-tion.

Several more changes occurred in the late 1980s. On June 28, 1985, an advisory committee was formed to help provide recommendations for curriculum and to help place students in intern-ships. The advisory committee consisted of private industry communications professionals, faculty, university staff, and students. Some suggestions the advisory committee made were implemented in 1987 with more course additions. A new agricultural communications course – AGED 3302 Agricultural Data Base Networks, Information Systems and Populace – was added to the curricu-lum. According to the 1987 course catalog, the course was described as "computer hardware and software used in agricultural data base networks, and the interface with the agricultural populace" (p. 94). Also, the course catalog encouraged students to join ACT and become active members.

In 1988, four more courses were added to the curriculum, increasing the number of required agricultural communications course hours to 24 and decreasing the number of required mass com-munications course hours to 16. The four courses were (see figure 2):

- AGED 2301 – Introduction to Agricultural Education and Information Systems
- AGED 3200 – Writing for Agriculture
- AGED 3303 – Communicating Agriculture to the Public

- AGED 4100 – Seminar in Communications

The relationship between agricultural education and mass communications was good but until you have them in your building they're not really your students. If they're taking courses everywhere else then you don't see them. You know, part of being a good faculty and adviser is knowing your students and having them in class, said Steve Fraze, Ph.D. (personal communication, October 10, 2012)who has been a faculty member in the department since 1988. Because of perspectives like this and the increased popularity of agricultural communications, the program continued to evolve.

The early 1990s marked an exciting time for agricultural communications at TTU. In 1991, Paul Vaughn, Ph.D., became the department chair, and in 1993, the department name changed to the Department of Agricultural Education and Communications, as it is still called today, reflecting the growth and popularity of the agricultural communications program. Faculty members were also working toward creating an undergraduate degree in agricultural communications.

You know, you can analyze a transcript and know pretty well what a student did, but when you look at the bottom it says Bachelors of Science Agricultural Communications it means a whole lot on your transcript and on your diploma that hangs on the wall, said Dr. Fraze (personal communication, October 10, 2012).

And so, in 1994, a Bachelor of Science in Agricultural Communications was finally offered through the department. Along with the creation of the undergraduate degree, several new courses were added (see Figure 3):

- ACOM 2301 – Introduction to Agricultural Communications
- ACOM 4000 – Internship in Agricultural Communications
- ACOM 4301 – Agricultural Communications Problems
- ACOM 4310 – Development of Agricultural Publications

Students were required to have a minimum of 132 hours to graduate with this bachelor's degree. In 1996, the Communicating Agriculture to the Public course was changed in the course catalog from an AGED prefix to an ACOM prefix. Also, ACOM 4300 Advanced Computer Applications in Agricultural Media Production was added.

Similar to the 1990s, the 2000s have marked another time of change. Matt Baker, Ph.D. was named department chair in 2001. Over the next several years, 2001-2005, more courses were added to the agricultural communications curriculum as well as the creation of some graduate level courses (see figure 4):

- ACOM 2305 – Digital Communications in Agriculture
- ACOM 4300 – Web Design in Agricultural Sciences and Natural Resources
- ACOM 5001 – Contemporary Issues in Agriculture
- ACOM 5303 – Advanced Computer Applications in Agricultural Communications
- ACOM 5307 – Methods of Technology Change

In 2004, the state enacted a policy that reduced the required number of hours for all degrees to 120. Because of this, faculty had to restructure the degree plan to meet the new state needs as

well as the needs of the students. Part of meeting those needs was creating a Master of Science in Agricultural Communications degree program to be offered for the first time in 2007. This degree required 36 hours of graduate courses.

Along with Dr. Fraze being named the department chair in 2008, more courses were offered both on the undergraduate and graduate levels between 2008 and 2010 (see Figure 5):

- ACOM 2303 – Digital Imaging in Agriculture
- ACOM 3305 – Layout and Design in Agricultural Sciences
- ACOM 4305 – Agricultural Communications Campaigns
- ACOM 4311 – Convergence in Agriculture Media
- ACOM 5302 – Knowledge Management in Agriculture and Natural Resources
- ACOM 5304 – Risk and Crisis Communication in Agriculture and Natural Resources
- ACOM 5306 – Foundations of Agricultural Communications
- ACOM 5308 – Utilizing Online Media in Agricultural Communications
- ACOM 7100 – Graduate Seminar

A 19 hour minor in agricultural communications was added in 2010 and after a three-year process, the Doctor of Philosophy in Agricultural Communications and Education was approved on October 27, 2011. Figure 7 depicts the courses currently offered at TTU for undergraduate and graduate students.

Figure 1

Agricultural Communications Specialization.

Basic Science Courses: 12 hours*
BIOL 141	Biology of Plants
BIOL 142	Biology of Animals
CHEM 111	Experimental General Chemistry I (Laboratory)
CHEM 112	Experimental General Chemistry II (Laboratory)
CHEM 135	Essentials of Chemistry I
CHEM 136	Essentials of Chemistry II
PSS 3421	Fundamental Principles of Genetics

General Courses: 24 hours
ENGL 131, 132	College Rhetoric
ENGL 239 or 3339	Technical Writing
HIST 231, 232	American History
POLS 231, 232	American Government
MATH 133 or 137	College Algebra or Mathematical Analysis

Communications Courses: 38 hours
SCOM 338	Business & Professional Speech Communication
MCOM 130	Introduction to Mass Communications
TELE 331	Introduction to Telecommunications
ADV 334	Principles of Advertising
JOUR 331	News Writing
JOUR 332	Reporting
PHOT 231	Basic Photography
JOUR 448	Editing
AGED 430	Agricultural Educational Problems
AGED 431	Transfer of Agricultural Technology

Plus additional 7 hours** of communications courses.

Agricultural Sciences Courses: 46 hours
AGSC 111	Agricultural Industry
AECO 131	Introduction to Agricultural Economics

Plus 24 hours from the following: PSS 1300; ANSC 121 and 111; ENTO 221 and 211; FD T 230; AG E 135; PALA 134; PSS 1311 or 1312; R&WM 231, 232.
Plus additional 18 hours** of 300-400 level agricultural sciences courses.
Free Electives: 15 hours**
Hours required for graduation, exclusive of P.E., Basic ROTC, or Band — 132.

*Must complete at least 4 hours of chemistry and 4 hours of biology.
**Additional hours must be approved by the academic advisor and the dean.

Figure 1. List of courses students specializing in agricultural communications at Texas Tech University in 1982 were required to take. Adapted from "Agricultural Communications Specialization," by Office of Official Publications, 1982, *Bulletin of Texas Tech University Undergraduate Catalog 1982-1983*, p. 83.

Figure 2

Courses in Agricultural Education. (AGED)

2301. Introduction to Agricultural Education and Information Systems (3:3:0). An overview of information systems and media associated with the agricultural industry. F, S.

3260. Writing for Agriculture (2:1:2). Prerequisite: JOUR 3310. Students integrate various skills, including writing, editing, and layout, in producing agriculture publications. Emphasis on computer software applications in agricultural publishing. Agriculture majors only.

3301. Introduction to Agricultural Education (3:2:2). Prerequisite: Departmental approval. F, S.

3302. Agricultural Data Base Networks, Information Systems, and Populace (3:3:0). Computer hardware and software used in agricultural data base networks, and the interface with the agricultural populace. F, S.

3303. Communicating Agriculture to the Public (3:2:2). Prerequisite: Junior standing. Principles and procedures in communicating agricultural news and information to general and specialized audiences through presentations and various media.

3330. Interrelationships of Agricultural Agency Information Systems (3:2:2). Prerequisite: Sophomore standing or departmental approval. Utilization of agricultural service systems to disseminate information to traditonal and nontraditional agricultural clientele. Emphasis on USDA organizations.

3331. Principles of Agricultural Leadership (3:3:0). Application of leadership principles with emphasis on interpersonal and personal skills, dynamics of organizational structure, and institutional and agency leadership.

4000. Internship (V1-12).

4100. Seminar in Agricultural Communications (1:1:0). Prerequisite: Senior standing. Overview and analysis of the history, development, issues, and trends of traditional agricultural and related information outlets. May be repeated once for credit.

4301. Agricultural Education Problems (3). Prerequisite: Senior standing and approval of department chairperson. Individual investigation. May be repeated for credit. F, S, SS.

4302. Transfer of Agricultural Technology (3:3:0). Prerequisite: Junior standing or departmental approval. Examination of processes by which professional agriculturalists influence the introduction, adoption, and diffusion of technological change. F, S.

4303. Methods in Future Farmer and Supervised Experience Programs (3:2:3). F, S.

4304. Methods of Teaching Vocational Agriculture in the High School (3:2:3). F, S.

4305. Vocational Agriculture Program Development (3:2:2). Department approval observation and planning of high school vocational agriculture programs.

4306. Student Teaching (3). Prerequisite: Senior standing in agricultural education.

Figure 2. List of courses and course descriptions offered in agricultural education including new agricultural communications courses in 1988 at Texas Tech University. Adapted from "Courses in Agricultural Education. (AGED)," by Office of Official Publications, 1988, *Bulletin of Texas Tech University Undergraduate Catalog 1988-1989*, p. 96-97.

Figure 3

Courses in Agricultural Education. (AGED)

2300.   **Introduction to Agricultural Sciences Development (3:3:0).** Prerequisite: Sophomore standing or departmental approval. History and principles of vocational education, community assessment of agricultural programs planning, and development of agricultural youth organization. (Writing Intensive)

3302.   **Agricultural Data Base Networks, Information Systems, and Populace (3:3:0).**   Computer hardware and software used in agricultural data base networks, and the interface with the agricultural populace. F, S, SS.

3303.   **Communicating Agriculture to the Public (3:2:2).** Principles and procedures in communicating agricultural news and information to general and specialized audiences through presentations and various media. S.

3330.   **Interrelationships of Agricultural Agency Information Systems (3:2:2).** Prerequisite: Sophomore standing or departmental approval. Utilization of agricultural service systems to disseminate information to traditional and nontraditional agricultural clientele. Emphasis on USDA organizations.

3331.   **Principles of Agricultural Leadership (3:3:0).** Application of leadership principles with emphasis on interpersonal and personal skills, dynamics of organizational structure, and institutional and agency leadership. For student teaching only.

4000.   **Internship (V1-12).**

4301.   **Agricultural Education Problems (3).** Prerequisite: Senior standing and approval of department chairperson. Individual investigation. May be repeated for credit. F, S, SS.

4302.   **Transfer of Agricultural Technology (3:3:0).** Prerequisite: Junior standing or departmental approval. Examination of processes by which professional agriculturalists influence the introduction, adoption, and diffusion of technological change. F.

4304.   **Methods of Teaching Agriscience in the Secondary School (3:2:3).** F, S.

4306.   **Student Teaching (3).** Prerequisite: Senior standing in agricultural education.

Figure 3. List of courses and course descriptions offered in agricultural education including new agricultural communications courses in 1994 at Texas Tech University. Adapted from "Courses in Agricultural Education. (AGED)," by Office of Official Publications, 1994, *Undergraduate Catalog 1994–1995 Bulletin of Texas Tech University,* p. 101.

Figure 4

Agricultural Communications (ACOM)
(To interpret course descriptions, see pg. 9.)

2301. Introduction to Agricultural Communications (3:3:0). An overview of information systems and media associated with the agricultural industry. (Writing Intensive)

2302. Scientific Communications in Agriculture and Natural Resources (3:3:0). Improve written, visual, and oral communications. Development of press releases, scientific papers, popular press articles, poster presentations, technical presentations, and grant applications. (Writing Intensive)

2305. Digital Communications in Agriculture (3:2:1). Examination of the use of computers in agricultural communications with emphasis on graphic art production, photo manipulation, and elements of design.

3300. Communicating Agriculture to the Public (3:2:2). Principles and procedures in communicating agricultural news and information to general and specialized audiences through presentations and various media. S. (Writing Intensive)

3301. Video Production in Agriculture (3:3:0). Prerequisite: JOUR 2310. Basics in producing an agricultural video. Students learn scripting, shooting, and digital video editing.

4000. Internship in Ag Communications (V1-12).

4001. Agricultural Communications Problems (V1-3). Prerequisite: Consent of instructor. Individual study of advanced application of principles of agricultural communications.

4100. Seminar in Agricultural Communications (1:1:0). Prerequisite: Senior standing or departmental approval. Overview and analysis of the history, development, issues, and trends of traditional agricultural and related information outlets. May be repeated once. F. (Writing Intensive)

4300. Web Design in Agricultural Sciences and Natural Resources (3:2:1). Prerequisite: ACOM 2305. Basic understanding of web design principles. Promote experimental learning through a project requiring students to develop a web site for a client in the agriculture industry.

4310. Development of Agricultural Publications (3:2:2). Prerequisite: JOUR 2310. Students integrate various skills including writing, editing, and layout in producing agricultural publications. Emphasis upon computer software applications in agricultural publishing. (Writing Intensive)

Graduate Courses

5001. Contemporary Issues in Agricultural (V1-6). Group study and discussion of current developments, trends, and issues in agricultural communications. May be repeated for credit.

5303. Advanced Computer Applications in Agricultural Communications (3:3:0). Study of computer software for document production and photo manipulation (bitmap and vector) and desktop publishing in the context of agricultural issues and trends.

5307. Methods of Technological Change (3:3:0). Dynamics of cultural change as theoretical framework for planned technological change; methods of planning and implementing change, its effect, and how it can be predicted. SSI, SSII.

Figure 4. Undergraduate and graduate courses and descriptions offered in agricultural communications at Texas Tech University in 2005. This includes newly developed courses through 2001-2005. Adapted from "Agricultural Communications (ACOM)," by Office of Official Publications, 2005, *Texas Tech University Undergraduate and Graduate Catalog 2005-2006*, p. 99.

Figure 5

Agricultural Communications (ACOM)
(To interpret course descriptions, see page 14.)

Undergraduate Courses

1300. Introduction to Agricultural Communications (3:3:0). An overview of information systems and media associated with the agricultural industry.

2302. Scientific Communications in Agriculture and Natural Resources (3:3:0). Improve written, visual, and oral communications. Development of press releases, scientific papers, popular press articles, poster presentations, technical presentations, and grant applications. (Writing Intensive)

2303. Digital Imaging in Agriculture (3:2:2). Basics of composition, techniques, and lighting involved in photographing agricultural images. Students will learn about photographing agricultural subjects, people, and landscapes.

2305. Digital Communications in Agriculture (3:1:4). Examination of the use of computers in agricultural communications with emphasis on graphic art production, photo manipulation, and elements of design.

3300. Communicating Agriculture to the Public (3:2:2). Principles and procedures in communicating agricultural news and information to general and specialized audiences through presentations and various media. S. (Writing Intensive)

3301. Video Production in Agriculture (3:3:0). Basics in producing an agricultural video. Students learn scripting, shooting, and digital video editing.

3305. Layout and Design in Agricultural Sciences(3:2:2). Prerequisite: ACOM 2305. Examination of design principles and desktop publishing in the agricultural industry.

3311. Web Design in Agricultural Sciences and Natural Resources (3:1:4). Prerequisite: ACOM 2305. Promote basic understanding of Web design principles and experiential learning through a project requiring students to develop a Web site for a client in the agriculture industry.

4000. Internship in Agricultural Communications (V1-12).

4001. Agricultural Communications Problems (V1-3). Individual study of advanced application of principles of agricultural communications.

4100. Seminar in Agricultural Communications (1:1:0). Overview and analysis of the history, development, issues, and trends of traditional agricultural and related information outlets. May be repeated once for credit. F.

4305. Agricultural Communication Campaigns (3:2:2). Prerequisite: Junior or senior standing and ACOM majors only. Principles, practices, and applications of social marketing as they pertain to developing communication campaigns for the food and fiber industry.

4310. Development of Agricultural Publications (3:2:2). Prerequisite: JOUR 2310. Students integrate various skills including writing, editing, and layout in producing agricultural publications. Emphasis upon computer software applications in agricultural publishing. (Writing Intensive)

4311. Convergence in Agricultural Media (3:2:2). Prerequisite: Consent of instructor and ACOM majors only. Intensive application of communication skills to produce a multimedia Web site focused on agricultural topics.

Graduate Courses

5201. Contemporary Issues in Agricultural Communication (2:2:0). Group study and discussion of current issues in agricultural communications. Actual topics will vary based on developments within the agriculture industry and agricultural communications profession.

5302. Knowledge Management in Agricultural and Natural Resources (3:3:0). A comprehensive, systematic examination of the information assets of an agricultural organization and how they are identified, captured, organized, integrated, mined, retrieved and shared.

5303. Advanced Computer Applications in Agricultural Communications (3:3:0). Study of computer software for document production and photo manipulation (bitmap and vector) and desktop publishing in the context of agriculture issues and needs.

5304. Risk and Crisis Communications in Agriculture and Natural Resources (3:3:0). Examines potential risk and crisis communications scenarios in agriculture and the relevant theories, models, and processes to address these types of situations effectively.

5306. Foundations of Agricultural Communications (3:3:0). Explore historical foundations and selected philosophical concepts and philosophers and evaluate their influence upon agricultural communications.

5307. Methods of Technological Change (3:3:0). Dynamics of cultural change as theoretical framework for planned technological change; methods of planning and implementing change, its effect, and how it can be predicted. SSI, SSII.

5308. Utilizing Online Media in Agricultural Communications (3:3:0). Identify agricultural audiences, conduct analyses, and use results to evaluate and produce online media that utilizes design fundamentals, visual communication theories, and new media technology.

7100. Graduate Seminar (1:1:0). Group study and discussion of current developments in agricultural communications.

Figure 5. Undergraduate and graduate course offerings and descriptions for agricultural communications students offered in 2010 at Texas Tech University. This includes several new courses added between 2008-2010. Adapted from "Agricultural Communications (ACOM)," by Office of Official Publications, 2010, *Texas Tech University 2010–2011 Undergraduate and Graduate Catalog*, p. 109 & 111.

Figure 6

Agricultural Communications (ACOM)

Undergraduate Courses

1300. **Introduction to Agricultural Communications (3).** An overview of information systems and media associated with the agricultural industry.

2302. **Scientific Communications in Agriculture and Natural Resources (3).** Improve written, visual, and oral communications. Development of press releases, scientific papers, popular press articles, poster presentations, technical presentations, and grant applications. (Writing Intensive)

2303. **Digital Imaging in Agriculture (3).** Basics of composition, techniques, and lighting involved in photographing agricultural images. Students will learn about photographing agricultural subjects, people, and landscapes.

2305. **Digital Communications in Agriculture (3).** Examination of the use of computers in agricultural communications with emphasis on graphic art production, photo manipulation, and elements of design.

3300. **Communicating Agriculture to the Public (3).** Principles and procedures in communicating agricultural news and information to general and specialized audiences through presentations and various media. S. (Writing Intensive)

3301. **Video Production in Agriculture (3).** Prerequisite: Must be ACOM or INAG major. Basics in producing an agricultural video. Students learn scripting, shooting, and digital video editing.

3305. **Layout and Design in Agricultural Sciences(3).** Prerequisite: ACOM 2305. Examination of design principles and desktop publishing in the agricultural industry.

3311. **Web Design in Agricultural Sciences and Natural Resources (3).** Prerequisite: ACOM 2305. Promote basic understanding of Web design principles and experiential learning through a project requiring students to develop a website for a client in the agriculture industry.

4000. **Internship in Agricultural Communications (V1-12).**

4001. **Agricultural Communications Problems (V1-3).** Individual study of advanced application of principles of agricultural communications.

4100. **Seminar in Agricultural Communications (1).** Overview and analysis of the history, development, issues, and trends of traditional agricultural and related information outlets. May be repeated once for credit. F.

4305. **Agricultural Communication Campaigns (3).** Prerequisite: ACOM 3305, junior or senior standing, and ACOM majors only. Principles, practices, and applications of social marketing as they pertain to developing communication campaigns for the food and fiber industry.

4310. **Development of Agricultural Publications (3).** Prerequisite: JOUR 2310. Students integrate various skills including writing, editing, and layout in producing agricultural publications. Emphasis upon computer software applications in agricultural publishing. (Writing Intensive)

4311. **Convergence in Agricultural Media (3).** Prerequisite: Consent of instructor and ACOM majors only. Intensive application of communication skills to produce a multimedia website focused on agricultural topics.

Graduate Courses

5201. **Contemporary Issues in Agricultural Communication (2).** Group study and discussion of current issues in agricultural communications. Actual topics will vary based on developments within the agriculture industry and agricultural communications profession.

5302. **Knowledge Management in Agricultural and Natural Resources (3).** A comprehensive, systematic examination of the information assets of an agricultural organization and how they are identified, captured, organized, integrated, mined, retrieved and shared.

5303. **Advanced Computer Applications in Agricultural Communications (3).** Study of computer software for document production and photo manipulation (bitmap and vector) and desktop publishing in the context of agriculture issues and needs.

5304. **Risk and Crisis Communications in Agriculture and Natural Resources (3).** Examines potential risk and crisis communications scenarios in agriculture and the relevant theories, models, and processes to address these types of situations effectively.

5306. **Foundations of Agricultural Communications (3).** Explore historical foundations and selected philosophical concepts and philosophers and evaluate their influence upon agricultural communications.

5307. **Methods of Technological Change (3).** Dynamics of cultural change as theoretical framework for planned technological change; methods of planning and implementing change, its effect, and how it can be predicted. SSI, SSII.

5308. **Utilizing Online Media in Agricultural Communications (3).** Identify agricultural audiences, conduct analyses, and use results to evaluate and produce online media that utilizes design fundamentals, visual communication theories, and new media technology.

7100. **Graduate Seminar (1).** Group study and discussion of current developments in agricultural communications.

Figure 6. Current listing of undergraduate and graduate courses and descriptions offered in agricultural communications at Texas Tech University. Adapted from "Agricultural Communications (ACOM)," by Office of Official Publications, 2012, *Texas Tech University Catalog Undergraduate and Graduate 2012-2013*, p. 123-124.

Conclusions and Recommendations

The agricultural communications degree program at TTU started as an option, later became a specialization, then evolved into a degree program. This follows suit with Tucker et al. (2003) and their conclusions of agricultural communications being derived from journalism and mass communications courses. After a transition period of creating agricultural communications courses, the program area was able to separate from mass communications and develop its own courses, while continuing to require students to take several courses in mass communications.

Agricultural communications is often a misunderstood degree program (Weckman et al., 2000). Regardless, agricultural communications programs are growing, and because of this it may take time for the programs to experience institutional support (Weckman et al., 2000). This study is an example of how gaining institutional support can be a long and tedious process. The process TTU went through, in first recognizing a need for a program, developing relationships with other colleges to meet those needs, creating specialized courses, and then evolving into degree programs, can be useful to other institutions that are looking to create new or modified degree programs in agricultural communications. Creating a degree program is not a quick and easy process. It takes many months, and in the case of TTU's Doctor of Philosophy program, many years to develop and obtain approval.

Course offerings have evolved over the years in order to meet employer demands which researchers (Doerfert & Miller, 1996; Irlbeck & Akers, 2009; Morgan, 2012; Sprecker & Rudd, 1998) have found to be a vital component of agricultural communications programs due to the ever changing work environment. The information provided here can help other institutions decide what course offerings could be offered in undergraduate and graduate agricultural communications programs.

It is important to understand where a program has been and where it is going, and the only way to do that is to understand its history. Other institutions who have agricultural communications programs should conduct a similar historical analysis to better understand the development of their programs. Efforts should be made to collect oral histories of influential faculty and students who can provide rich details about the program. These stories could then be used in communication materials or to provide a broader picture of the academic discipline.

Knauft (2006) discussed how undergraduate students are unfamiliar with a program's history. With the findings from this case study, a historical timeline can be created and displayed in the agricultural education and communications building. This timeline could display important dates and relevant events throughout the course of TTU's agricultural communications degree program. The department could display this in the building for students, faculty, and other stakeholders to see. A display would help students, faculty, and stakeholders understand where the department has been and anticipate what the future may hold.

References

Doerfert, D. L & Miller, R. P. (2006). What are agriculture industry professionals trying to tell us? Implications for university-level agricultural communications curricula. Journal of Applied Communications, 90(3), 17-31.

Duncan, C. H. (1957). An evaluation of the agricultural journalism curriculum in land grant colleges. Unpublished master's thesis, University of Missouri, Columbia.

Erlandson, D. V., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). Doing naturalistic inquiry: A guide to methods. Newbury Park, CA: SAGE Publications, Inc.

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). Educational Research: An Introduction (8th ed.). Boston, MA: Pearson.

Glaser, B. & Strauss, A. (1967). The discovery of grounded theory: Strategies for qualitative research. Chicago, IL: Aldine.

Irfan, M., Muhammad, S., Khan, G. A., & Asif, M. (2006). Role of mass media in the dissemination of agricultural technologies among farmers. International Journal of Agriculture & Biology,8(3), 417-419.

Irlbeck, E. G. & Akers, C. (2009). Employers' perceptions of recent agricultural communications graduates' workplace habits and communications skills. Journal of Agricultural Education, 50(4), 63-71.

Knauft, D. (2006). Developing and offering a course on the history of a college of agriculture. NACTA Journal, 50(1), 2-5.

Morgan, A. C. (2012). Competencies needed by agricultural communication undergraduates: A focus group study of alumni. Journal of Applied Communications, 96(2), 17-29.

Office of Official Publications. (1982). Bulletin of Texas Tech University undergraduate catalog 1982-1983. Lubbock, TX: Texas Tech University.

Office of Official Publications. (1988). Bulletin of Texas Tech University undergraduate catalog 1988-1989. Lubbock, TX: Texas Tech University.

Office of Official Publications. (1994). Undergraduate catalog 1994-1995 bulletin of Texas Tech University. Lubbock, TX: Texas Tech University.

Office of Official Publications. (2005). Texas Tech University undergraduate and graduate catalog 2005-2006. Lubbock, TX: Texas Tech University.

Office of Official Publications. (2010). Texas Tech University 2010-2011 undergraduate and graduate catalog. Lubbock, TX: Texas Tech University.

Office of Official Publications. (2012). Texas Tech University catalog undergraduate and graduate 2012-2013. Lubbock, TX: Texas Tech University.

Sprecker, K. J. & Rudd, R. D. (1998). Opinions of practitioners concerning curricular requirements of agricultural communications students at the University of Florida. Journal of Applied Communications, 82(1), 31-42

Tucker, M., Whaley, S. R., & Cano, J. (2003). Agricultural education and agricultural communications: Striking a proper balance in the academy. Journal of Agricultural Education, 44(1), 22-30.

Weckman, R., Witham, D., & Telg, R. (2000). Southern agricultural communications undergraduate programs: A survey. Journal of Applied Communications, 84(4), 41-50.

Research

Understanding Whence We Came: Role of the Association for Communication Excellence in the Development of Agricultural Communications during the Past Century - and Future Implications

D. Dwayne Cartmell II and James F. Evans

Introduction

To understand where we are today, we must first try to understand whence we came. – C.G. Scruggs and Smith W. Moseley (1979, p. 22)

On June 14, 1913, editors from six colleges of agriculture met at the University of Illinois in an informal way to discuss six questions focused on their role in the dissemination of information via the media about agricultural issues. After several fruitful discussions regarding the questions at hand, the men decided this type of gathering was important for their future. As such, they voted unanimously to make the conference an annual activity. This was the first meeting of what is now the Association for Communication Excellence in Agriculture, Natural Resources, and Life and Human Sciences (ACE).

The discipline has changed greatly since this initial conference, as has the organization it represents. The need for skilled professional communicators is as evident today as it was at that first meeting of college editors.

At a time when demand is at an all time high for graduates with degrees from agricultural communications programs, it is good to reflect on how our discipline has reached this point. How has our discipline evolved during the last century? What role has the Association for Communication Excellence played in the development of the agricultural communications discipline?

Winston Churchill once said, "The farther backward you can look, the farther forward you can see" (Mansfield, 1995, p. 200). In an attempt to follow the words of Churchill as well as Scruggs and Moseley, this analysis seeks to renew our understanding of the past as well as keep a keen eye toward the future of agricultural communications as an academic field.

Problem Statement

There is currently no literature looking at the role of the Association for Communication Excellence in the development of agricultural journalism/agricultural communications as an academic discipline.

Purpose

The purpose of this research is to provide a historical overview of the role of ACE in the growth and development of agricultural communications as an academic discipline as well as a

professional field of practice. In particular, the analysis will focus on historical data from ACE publications and documents, showcasing the growth of the discipline as it relates to the land grant mission of teaching, research and service.

Research Questions

The following questions guided this study:

1) What were the significant historical contexts through the Association for Communication Excellence surrounding the development of teaching programs in agricultural communications?

2) What were the significant historical contexts through the Association for Communication Excellence surrounding the development of research in agricultural communications?

3) What were the significant historical contexts through the Association for Communication Excellence surrounding the development of service efforts in agricultural communications?

Methods and Procedures

Historical inquiry research methods were used to address the research questions, which guided this investigation. Davis (1991) noted seven guidelines for researching and writing curriculum history. These guidelines are: authority, interpretation, significance, context, representativeness, perspective, and style (p. 79-80). These guidelines, along with the six steps for conducting historical research by Busha and Harter (1980), were used in the development of this historical investigation. In particular, both primary and secondary historical references were used to obtain the information needed. Primary sources included journal articles, newsletter articles, conference reports, conference proceedings and other publications. Secondary sources included selected books, national project reports and other online publications. The information was collected through the library resources at Oklahoma State University and the University of Illinois as well as the Agricultural Communications Documentation Center (ACDC) and other online resources.

The major search process, which occurred using the ACDC, identified 1,255 articles in ACE periodicals from 1919 to date. The authors subjected all references to internal and external criticism to ensure the authenticity and accuracy of the source (Key, 1997).

In this analysis, the term "agriculture" is used broadly to encompass the food enterprise (from research, production, processing, marketing, policies and trade to consumption, diets and nutrition for health); feed for animals; fiber for clothing and other uses; renewable energy; natural resources and conservation; rural community development, rural affairs and other related aspects. "Communications" is used broadly to encompass all intrapersonal, interpersonal and mediated means by which humans interact and otherwise gather information, consider options and make decisions in pursuit of their wellbeing.

Findings

I. Development of teaching programs in agricultural communications

Agricultural Journalism programs were at the forefront of journalism education in the United States in the early 1900s. From their roots in technical journalism departments, these programs have gravitated toward agricultural colleges as the journalism programs shifted to a more general focus

(Jarnagin, 1966). The profession of agricultural communications/agricultural journalism has seen a major growth in the last century. Similarly, academic programs in this field have seen tremendous growth and development. Today they offer a dynamic range of course offerings while experiencing increasing enrollment. New programs seem to sprout roots on a regular basis and existing programs are seeing major growth spurts in relation to student numbers and curricular offerings as the need for communicating agricultural issues to an increasingly agricultural illiterate audience becomes more and more important.

In the early days, ACE was fighting for status as an organization and academic programs were searching for a focus (Jarnagin, 1966). Few agricultural journalism and communications programs existed, much less curriculum to support programs. Just more than 100 years ago, in 1905, the first agricultural journalism course was offered at Iowa State College (Boone, Meisenbach and Tucker, 2000). Today, many programs offer up to 10 or 15 core courses within the department.

Iowa State University was the first to offer a four-year curriculum in agricultural journalism, beginning in 1920. The University of Wisconsin established the first Department of Agricultural Journalism in the world in 1908 (http://lsc.wisc.edu/home/). From this point forward, there was a steady increase in the number of degree programs in agricultural journalism with 14 schools offering the equivalent of a major by 1952 (Report of the program development conference, 1952). By 1982, 20 universities were offering undergraduate degrees in agricultural journalism, agricultural communication(s), agriculture and natural resources communications, technical communications, rural communications and/or agricommunication (Evans & Bolick, 1965). Today, Web searching reveals more than 45 U. S. colleges and universities with an identified program in agricultural journalism or agricultural communications.

In the early years, few students sought a degree in those agricultural journalism programs. In 2011, USDA reported nearly 1,500 students seeking an undergraduate degree in agricultural communications/journalism at land grant institutions in the U.S. More than 130 were pursuing a master's degree or doctorate in this academic field (USDA, 2011).

Early ACE - learning, training and finding a place

The early years of ACE saw members trying to figure out how they fit in with the academic community. ACE provided members an opportunity for professional development and sharing of ideas. With the passage of the Smith-Lever Act, which established the Cooperative Extension Service, many universities faced reorganization. Editors were organized to manage information services beyond the research publications associated with their original Experiment Station work (Report of the program development conference, 1952). They were charged with taking that information and delivering it via this new formal Extension system to the people. Growth of communications need broadened their responsibilities beyond the editing and publishing focus to serving also as public information officers and specialists.

Throughout the 1920s, editors served as providers of information (Report of the program development conference, 1952). In addition, there was a strong focus on how editors could assist Extension agents. As the role of editors grew, there was an emphasis placed on editorial improvement and continuing education. At the same time, demand continued to grow for well-trained writing staff. This demand has been the driving force behind the growth of academic programs. There was a need – which continues today - for skilled professional communicators who are informed about and interested in agriculture. Programs have grown and had success because of the increasing job

opportunities for well-prepared graduates who are indeed trained in agriculture and journalism/communications. The "agriculture" part of that combination has broadened tremendously, as has the "journalism/communications" part.

The mid-1920s through the early 1930s brought about more change as radio came onto the scene. Now, not only were communicators serving as writers and editors but also they faced a distinct need for broadcasters and on-air talent. This advancement in mediums continued to increase the demand for a broadly trained communicator. As such, professional development was a strong need for those already employed in the field (Kansas Draws on Student Talent, 1933; Report of Committee on Professional Training, 1934).

"What should be the professional training of men and women to become agricultural and home editors?" Andrew Hopkins asked in a 1934 issue of ACE newsletter. His article addressed the question, "Are we, as editors, alive to our responsibilities?" (Hopkins)

This surge in the need for professional development and continuing education for professionals continued to emerge, along with a training ground for new staff.

A national project for professional development

As editors and staff struggled to have the appropriate skill set to meet the information demands of society, ACE leadership began a project titled Operation Boot Strap, which was a continuing education training effort.

Again, ACE was shifting in focus and need. Operation Boot Strap served as a catalyst for the broadening of undergraduate degree programs as well as the early development of graduate programs during the 1950s. The struggle continued as professionals continued to seek additional training options. This struggle for training, both pre-service and in-service, ultimately led to the development of a proposal for the National Project in Agricultural Communications (NPAC).

ACE and the American Association of Land-Grant Colleges and State Universities sponsored the NPAC project jointly. It was funded primarily through grants from the W. K. Kellogg Foundation, plus payments for services provided to the various land-grant institutions of the country. The proposal for a five-year project was approved by Kellogg Foundation during early 1953 and the new NPAC project director began work on the project during late 1953.

During the project, one focused teaching approach was the Balanced Agricultural Training Program. This program was designed with a goal to train the trainer.

From time to time during the 1950s ACE members reported on ways in which they supported students on their campuses. For example, in an *AAACE* article Margaret McKeegan of Michigan State University explained how five students helped in Extension television programming. Former student assistants reported how their experiences helped them gain credentials for employment, learn about communications and get acquainted with the workings of an Extension information office. McKeegan summarized by saying, "I can see no better way to entice communicators into our field than by training them while they are undergraduate students (McKeegan, 1956, p. 3).

Support for expanding academic programs

As teaching and research programs emerged and grew on campuses across the nation during the 1960s, ACE members discussed the extent to which departmental status and academic appointments were important to them and their field of interest. They realized that research agendas and creative endeavors would be important for moving in that direction.

With the advancements of radio in the 1930s and the evolution of television in the 1950s, educational programs continued to shift, although student numbers and program size didn't take a huge jump until the last three decades leading to the ACE century celebration.

By the late 1960s, ACE members were embarking on a project that combined their roles as learners and teachers. The first edition of *Communications Handbook* was published by ACE in 1967 (*Communications Handbook, 1976*). Members wrote, designed and edited this resource for students, educators and practitioners. Topics ranged across communications concepts, speaking, writing, radio, television, photography, graphics, exhibits, meetings and more. New editions of the popular handbook were published in 1970, 1976, 1983 and 1990.

Beginning in the 1970s, advancements in technology became the driver for the evolution of academic programs, along with a decrease in an agriculturally literate public. Academic programs began to broaden their approach and many programs changed from agricultural journalism to agricultural communications, providing for a more broad-based education focused on public relations and other areas beyond the basic tenets of journalism.

Fitting service with academic roles

As members of the academic community, agricultural college communicators were facing an increasingly uncomfortable combination of pressures (Evans, Some pains, p. 4). They were expected to provide an increasingly broad and diverse array of communications services while fulfilling academic expectations in teaching, research and publishing. Their parent discipline, communications, drew upon a fairly new body of knowledge, still highly sketchy and scattered. Evans suggested that current agonies are a sign of professional vigor. He argued that diverse services will force stronger communications planning and more decision-guiding research. The added research will increase knowledge as a body of subject matter for practice and teaching. The added research and teaching will help ACE members fit more comfortably into their academic settings (p. 5-6).

Indeed, ACE members became more engaged with student teaching during the 1970s and 1980s. In 1977, for example, Arland Meade noted in an *AAACE* article that "a trend seems abroad in the land: for more AAACE members to take up formal teaching – teaching academic credit courses in their respective land grant universities" (Meade, p. 24). He explained his own experience in developing and teaching two courses at his university: "Extension Organization and Policy" and "Cooperative Extension Communications." He suggested that "a few more of us might create a teaching slot that will get Extension closer to the students – and force us, a bit painfully, to burn more some midnight oil to keep ahead. I recommend the experience (p. 27)."

Maintaining connections

In the 1990s, many of the academic programs remained relatively small (Doerfert, Cepica, Jones, and Fiel, 1991), making them vulnerable to many challenges. One huge challenge faced by some programs was their consolidation with other academic disciplines. This consolidation challenged curricular decisions along with program abilities to maintain a focused identity. Faculty had to develop new working relationships with colleagues from other disciplines. Additionally, larger programs began to face challenges with student access to courses in journalism/communications schools. These internal struggles continue today as smaller programs try to emerge on campuses with resource and identity challenges.

Consolidation of academic disciplines led, on some campuses, to separation of the agricultural

journalism/communications faculty members and students from the communications professionals. Those situations weakened connections among ACE members, students and faculty teachers.

However, ACE members continued their pursuit of professional improvement and their support for students and the academic mission in agricultural communications. Special Interest Groups of ACE became more vigorous during the 1990s. They were "building a body of work that's pushing open doors of opportunity for all ACE members," said ACE President Janet Rodekohr in 1996 (Rodekohr). "Nobody's kicking sand in our faces any more."

New approaches to professional development

On another front, ACE members introduced their first "super workshop." Nearly 80 members attended a two-day workshop, "Mastering the Web: positioning yourself for the future of electronic publishing" (Liss, 1995). The large turnout for this workshop proved especially encouraging as participants paid $375 to register for it. Regional ACE groups also picked up on this theme, providing more in-depth workshops to enhance or replace the concept of "meetings."

Other initiatives for professional development during the 1990s, and since, included introducing ACE Professional Development Fellowships; considering greater use of distance education in the face of changing demographics, dwindling resources and other forces (McAlpin, 1994); exploring the possibility of establishing a professional accreditation program (Donnellan, 1998); and offering more professional development sessions at annual meetings (Morgan, 2006).

In various ways, and across the nation, professional development initiatives such as these helped strengthen the broader academic mission as well as the effectiveness of individual members. Sometimes individual ACE members have been instrumental in establishing degree programs. A recent example was reported during 2006. Gordon Graham explained in *Signals* how some University of Arizona students suggested a major course in communications. "With the help of the journalism department we established an agricultural journalism major. Students in that major soon organized a chapter of Agricultural Communicators of Tomorrow" (Graham, 2006).

Such initiatives by ACE also helped put at rest the long-time debate among scholars and practitioners in this field about which is more important –agriculture or communications – for students who are preparing for careers in it. At the 2004 Agricultural Communications Summit, Jim Evans observed, "The uniqueness and main contributions of our professional study programs lie in helping students prepare to become skilled professional communicators – communicators who uniquely bring to their careers an understanding of, and interest in, agriculture, broadly defined" (Evans, 2004, p. 6).

II. Development of research in agricultural communications

Communications research did not appear in the position descriptions of pioneer ACE members, as editors of agricultural publications. It surely was not a mandate. Early ACE newsletters reveal that editors described their roles mainly in terms of serving the larger agricultural research agenda. Clark Wheeler, speaking at the ACE conference in 1919, described the editor's role as choosing to "turn the light of publicity upon his fellows and their good work, contenting himself with making the light and directing it" (Wheeler). However unassuming, the early ACE members clearly were interested in using editing skills effectively. They wanted to present information in ways their farm readers could understand and would value.

That early interest laid the foundation for what we see today as a substantial body of research in agricultural journalism and communications, a growing cadre of skilled researchers and a national

framework and agenda for research in this important field.

Modest early progress

Progress in communications research began modestly, mainly through a newsletter, plus discussions and reports at annual meetings. For the first 40 years, *ACE* newsletter was one of the main connecting links among members "for all but about four days of every year" (Jarnagin, p. 9). *ACE* was initiated in 1919, containing abstracts of publications and talks along with news of the organization and member activities.

Sometimes progress on the research front took the form of inspiration. President F. H. Jeter explained in 1920 that ACE "can become one of the leading instruments for the advancement of agricultural knowledge among the general farm public." The editor will do so, he said, through "making great the work of this institution" (Jeter).

By 1926, ACE members were paying close attention to emerging research about readership of agricultural information. C. E. Rogers reported during the annual conference that "What the farmer needs is no longer a matter of conjecture. Scientific study of the subject has provided concrete data." He cited examples about farm readership of Experiment Station bulletins in Kansas and Nebraska (Rogers). Also at that time, the Office of Cooperative Extension Work in the U. S. Department of Agriculture was conducting studies of information sources used by crop growers. ACE members understood that what rural people read is of vital interest for the agricultural college editor.

Mixing curiosity, doubt, hope and planning

Several themes seem apparent in communications among members during the 1930s.

Curiosity was one apparent theme. It appeared in newsletter articles such as one in 1934 entitled, "Are we, as editors, alive to our responsibilities?" Author Andrew Hopkins raised eight questions for ACE members. One of them was: Is there opportunity for research in the field of farm and home economics editing? (Hopkins)

Doubt seemed a second theme. An example of it appeared in an *ACE* article during 1933. In an article entitled, "Will to do research appears to lie dormant," the unidentified author observed that "little of burning fever of research is running rampant in the association" (Will to do research).

Hope and Planning seemed a third theme of the 1930s. An article, "Exploring the land of fact," in a 1932 issue of *ACE* offered an example of both. The author acknowledged absence of trained researchers, modest budgets, time pressures under which editors work and little accurate, scientific data unearthed. However, the article continued with a suggestion that the association could forward the progress of research on problems of interest to its membership. Readers of the article found a detailed outline of a foundation on which to build a research program – organizing the "fact finders," financing the search for facts, scheduling the labor, creating bibliographies and identifying studies for attention. Such studies would address techniques, publicity media and methods, and publicity campaigns (Exploring the land, p. 7).

During 1933 the Resolution Committee of ACE recommended appointment of a research committee. Identified responsibilities included these: Study the editorial problems that need investigation, suggest methods of conducting such research and maintain contact with individuals who were doing research work of interest to members (Resolution Committee, p. 3).

At that time, members were sharing information about radio listenership studies, how to gain reader interest, trends in publication editing (length, illustrations, use of features or news) and mea-

surement of Extension results.

Bubbling interest and growth

Interest in research bubbled and expanded throughout ACE, beginning in the late 1940s, a dynamic period following World War II. A report about that period noted that agricultural editors had tended to come from newspaper reporting backgrounds. It explained that the concept of information as an aid to the educational portion of agriculture grew rather gradually. Agricultural editors became more involved not only in producing information in a form that would get space in the paper but also in helping others plan materials and projects that fit the educational objectives of a specific program and were meant to capture and 'educate' potential learners (NPAC, 1960, p. 3). The report noted that ACE was unable to offer its members much help with those challenges.

"At the same time," it continued, "the area of communication theory and research was beginning to emerge as a combination of several disciplines such as sociology, psychology, engineering and social psychology, particularly at the research level. Some agricultural editors saw this combining of research and theory as a potential source of solutions to their everyday practical problems. So they began seeking ways to get such help (p. 3).

Catching a larger vision

At the 1951 annual meeting members authorized the Professional Improvement Committee to investigate establishing a nationwide project in professional improvement. During a follow-up meeting of that committee, the members laid plans for proposing a national project. It included a research agenda in the form of collecting and exchanging information, including professional literature.

At a program development conference in 1952 it "was generally agreed that the greatest value of research for agricultural editors would be in helping individual editors find specific answers for practical problems. This means that communication of present communications research is one of our greatest needs. Much work of potential value to the agricultural editor has already been done but either has not been reported in an outlet that reaches him or has not been offered in a form that he can apply" (p. 32). So the conferees called for an inventory of communications research, as a starting point. They also noted that research may be part of a training program, through the research projects involved in supporting graduate study and research (Report of the program development conference).

Out of the conference came identification of six fields in which research was needed: (1) Study of all available materials, through literature search, an abstracting service of past and current research, and the most satisfactory type of professional journal. (2) Basic research of methods of influencing people, including audience reactions. (3) Tests of effectiveness in techniques between given media and within the same medium. (4) Development of techniques for keeping county Extension agents informed of latest developments in subject matter and methods. (5) Determination of the potential role of agricultural communications specialists and basic standards necessary to enable them to fulfill that role. (6) Investigation into needs for and present methods of research reporting, including cooperative research between USDA and the states (p. 34).

Those planners of a national project recognized difficulties in developing an organization to direct and handle the research agenda. Difficulties included financing, procuring competent personnel and developing understanding about the value of communications research. Planners recommended establishing a director of communications research, using graduate assistants at various land-grant

colleges, gaining library, statistical and other consultant services, and gaining administrative endorsement.

ACE leaders clearly were catching a new and larger vision of potentials for members. Andrew Hopkins (among the founders of ACE in 1913) observed in 1951: "The role of the agricultural journalist may be an exceedingly important one, far reaching in its influence and highly productive of significant results. Much will depend on the attitude and capability of the individual and the opportunity…for creative work." The agricultural journalist may, he said, be a "scientist in communication delving into the mysteries of influencing behavior of individuals, groups and crowds" (Jarnagin, p. 66).

Research agenda of NPAC

Research initiatives of NPAC began with employment of a research director in September 1954 and an identified agenda of five jobs:

- Find out who is doing communication research and what is being done that is applicable to agricultural communications
- Encourage more and better new research on the part of individuals, regional groups, the USDA, state experimentation stations and others
- Encourage understanding of, interest in, and application of research results
- Do "housekeeping" research for, and contribute to, the development of NPAC programs
- Leave the NPAC research activities in such condition at the end of the grant period that they can be carried on in some productive, self-supporting fashion

By early 1960 (nearing the end of the project) abstracts of about 2,500 research studies had been completed, with bibliography cards available on about 5,000 studies. Summary digests had been published in four areas: radio, diffusion, readability, and type and typography. Five volumes of a research newsletter, *SEARCH*, had been published with a paid circulation of about 1,000. Also, six regional committees on research had been established – two in the South, two in the Northeast and two in the North Central regions. Several research projects had been developed by those regional committees, with others in progress (NPAC, 1959, p. 4).

ACE President George Round challenged members during 1956 with "things that need DO-ING" in the next 10 years. Several of the needs he emphasized related to research. One need, he said, was for greater use of mass communications and increased skills in using mass media wisely. He also called for establishing a professional journal to help ACE in "reinforcing our desires for more ways and means to raise our level of professional competence." Other needs with research implications included: (1) recognizing fully the value of graduate work and encouraging more members to take advantage of opportunities in this field, (2) establishing more departments in colleges where agricultural and home economics journalism or communications are taught and (3) attracting more bright young men and women to agricultural journalism and related fields (Round, 1945).

"The crop of well-trained communications research editors is growing and the training itself has reached a desirable high level," noted Charles G. Grey in 1959. He also observed that through NPAC "the nation has become cognizant of agricultural communications and the need for doing research in it (Grey, 1959). However, having looked through 13,000 experiment station projects he found only a few dealing with agricultural communications. "The case of missing communications

research" was the title of his article.

At the beginning of the 1960s, responses from 18 editors revealed what author R. L. Reeder described as a surprising variety of sources of research information. His article, "Ag editors put research to work," revealed more than 20 ways ACE members in those states were using research in their activities. Those research efforts ranged across publications, radio program services, use of visuals, use of commodity letters, audience feedback, effectiveness of county staff as communicators, reorganization of agricultural work and other areas (Reeder, 1960).

During the 1960s, ACE members were consistently reporting on their research at annual conferences. For example, two research sessions at the 1962 conference featured topics such as communication behavior of innovators and other adopter categories, communication behavior of farm families and county Extension advisors, manuscript testing and using graphs and tables (Miller, 1962).

In a 1962 article, "Establishing some bases for communications research," James H. McCormick asked why communications research in agriculture is not further off the ground. He mentioned neglect, lack of time, lack of resources and lack of "capable people with burning desire for such research" as challenges. "Or is it want of clear definition of the problem areas in the communication field…?" (McCormick, p. 4). He encouraged teamwork, especially with rural sociologists.

Another challenge of that period (as the NPAC project ended) came from Hadley Read in a 1962 *AAACE* editorial, "Our dilemma in an academic world." He argued that ACE members are professionals in an academic world with academic standards. He suggested that "many more of us, whether experienced or inexperienced must acquire the ability to carry out disciplined scientific research in our fields. And we must publish the results of our research so that new knowledge becomes a part of the literature of our profession" (Read).

Broadening the research agenda

Growth of teaching and research programs in agricultural communications probably surprised those in the 1970s and beyond who equated this field with declining farm populations, disappearance of some highly-visible farm magazines and fewer newspapers and big-market broadcast stations employing farm reporters. Part of what they missed was the explosion of agricultural knowledge that had more than doubled between 1945 and 1975 (Evans, 1975, p. 17). As a result, more increasingly-specialized information needed to flow through more channels to more audiences. The combination helped drive demand for research to guide those efforts.

Also, as the 1970s arrived ACE members in the faculty ranks were taking a new look at the academic base for agricultural communications. Similarly to teaching efforts in journalism and the agriculture disciplines, agricultural communications instruction began with a focus on skills. Early agricultural journalism courses focused on skills such as writing, editing and design. Beyond those "micro-oriented" skills, by 1970 agricultural communications teachers were experimenting with "macro-oriented" studies such as agriculture and its publics, communications systems in agriculture and communications in agricultural development. They were exploring research to help students examine the implications of an explosion of new communications technologies, changing audience structures within and beyond agriculture, changing economics of communicating, rapid growth in the quantity of agricultural knowledge, changes in sources of agricultural knowledge and the increasingly international character of agriculture (Evans, 1972, p. 33-34). Such experimental courses revealed new agendas for research in agricultural journalism and communications.

These research agendas were not to be confined to ACE members who worked with agricultural

communications programs as faculty members. "There's a place for the practicing agricultural editor in communications research," suggested William Carpenter in a 1978 *AAACE* article. He identified five roles the practicing editor can play: (1) encourage associates to carry out research, (2) advise students, especially for graduate programs, (3) carry out simple evaluation studies, such as inviting feedback from media about usage, surveying subscribers and reviewing clipping services, (4) take part in research teams and (5) conduct research as a full-time or part-time responsibility (Carpenter).

Research dimensions of the organization grew more visible in October 1978 when the *AAACE* periodical became *ACE Quarterly* and took a format similar to many scholarly journals. Also, during 1979, the ACE Communications Process Task Force took steps to help communications specialists work from a "fragmented and incomplete theoretical and research-based literature (Kern, 1979, p. 7). The committee proposed formation of a national commission to examine the operation of the communication/information system related to land-grant/USDA missions involving agricultural, forestry, home economics, youth and community development. The committee sought to develop communication models, organization, training and other elements that would enhance the effectiveness of the system.

Size and nature of the body of literature about agricultural communications became clearer during the early 1980s. A bibliometric analysis of such literature during 1981 revealed a substantial body of widely-scattered literature that grew about 14 percent a year between 1970 and 1979. Findings showed that among 336 periodicals that contained references about agricultural communications, the top-ranked periodical provided only six percent of the total. Authors concluded that growth of the expanding literature base makes such information increasingly important (Prabha, 1982, p. 28-30). These findings prompted establishment in 1982 of the Agricultural Communications Documentation Center as an international resource and service, based at the University of Illinois.

Looking back in 2005, Larry Whiting observed that between 1960 and approximately 1990 perhaps two dozen well-known faculty members from across the nation were accomplishing excellent research in this field, and were simultaneously active in ACE. NPAC may have marked a golden era of agricultural communications research, he said, but "other such eras are ahead of us" (Whiting, 2005).

Continuing to provide practical information

"What kind of research information do communications practitioners need?" John Pates asked in a 1987 *ACE Quarterly* article. Reporting on suggestions he had heard, he identified four categories of need: (1) Audience-type questions, such as information needs, promoting media attention, how much people will pay for information and reaching the desired audience. (2) Gatekeeper concerns, such as why are large papers devoting less space to agriculture, what the media want, guidelines they use. (3) Administrative matters, such as how information services are helping in the Experiment Station and Extension mission, and how to help administrators keep out of political hot water. (4) How to get the biggest bang for the buck (Pates).

The *Journal of Applied Communications* emerged in 1990. It replaced *ACE Quarterly* as the official periodical of ACE. *JAC* continued to pursue the long-time goal of providing practical information to help ACE members grow professionally in their day-to-day work. It also identified and helped provide direction for a growing body of research across a wide range of developments, issues and opportunities related to agricultural communications.

ACE members and other authors addressed a broad range of topics during the 1900s. Examples

of those serving professional development included use of video news releases, electronic transmission of news, communicating agricultural safety, uses of the internet, news about agriculture in newspapers, communicating about food biotechnology, reaching diverse audiences, consumer attitudes about food and agriculture, publication readership, ethical issues facing agricultural journalists and applications of video teleconferencing.

Sample topics of the period related to teaching and research included reviews of agricultural communications courses and curricula, writing and the productive agricultural scientist, designing in-service communications education for Extension personnel, using the Internet for college credit courses, working with local survey researchers, "Who's out there?" (audience analysis), how agricultural journalists write, working with local survey researchers, social science perspectives of agricultural communications research, using informant-directed interviews, sustainability of scientific journals and decision data services within communications units.

Since 2000, part of the research attention has been directed to the *Journal of Applied Communications* itself. Researchers Traci Naile, Tanner Robertson and Dwayne Cartmell looked at the mix of research orientations in the journal. In particular, the researchers wanted to learn to what extent the Journal of Applied Communications continues the long-time purpose of serving the needs of practicing communicators. Their approach involved examining the content of *JAC* from 1990-2006, totaling 222 research and non-research articles. The found that more than 300 authors published in the journal during that time period, representing more than 70 universities, agencies and private businesses. Twenty-seven percent of all articles were non-research in nature, leading researchers to conclude that the journal "is a leading outlet for scholarly literature while also meeting its purpose as a professional development resource for educational communicators" (Naile et al., 2010, p. 57). They also found a considerable range of research tools used during that period. Methods included surveys of various kinds, focus groups, content analyses, case studies, interviews, testing and multiple methods (p. 54).

Another team (Leslie Edgar, Tracy Rutherford and Gary Briers) examined research themes and methodologies in *JAC* from 1997 through 2006. Researchers identified 21 primary research theme areas and 28 secondary theme areas among 91 articles published in *JAC* during that period. Findings led the researchers to conclude that agricultural communications may still be searching to find where it fits. That wide variety in research themes was perhaps excessive, the researchers observed, in terms of the relatively small number of research articles published (Edgar et al., p. 29-30).

Topics addressed in *JAC* from 2000 to 2013 continued to serve a combination of professional development and teaching/research needs. As in earlier decades, most addressed current media, methods and issues. Samples included effectiveness of college of agriculture news releases, answering food safety questions on the World Wide Web, labeling genetically modified food, translating science-based research for public consumption, newspaper coverage of swine production issues, ethical concerns within the agricultural advertiser-media-reader triad, preparedness for managing crisis communication on land-grant campuses, critical thinking dispositions of agricultural communications students, using social media, framing mad cow media coverage, reaching older adults and people with disabilities, Salmonella and the media, using blended e-learning tools, managing media relationships and advocacy in agricultural social movements.

Expanding resources and a national framework

By 2013, ACE members with an interest in research had a substantial resource available for

their efforts to identify and assess this mushrooming, diverse body of literature. The Agricultural Communications Documentation Center had grown to more than 38,000 documents involving agriculture-related communications in more than 170 countries. Each document included both aspects – communications and agriculture, broadly defined. ACE members and other users from throughout the world could identify these documents through an open online search system. They could gain access to documents of interest by online or other means. Staff members of the Center were available to provide individual support in locating and providing access to materials.

Also, by 2013 those interested in agricultural communications research were examining and experimenting with a new conceptual and planning resource. During 2005, ACE helped develop a national and international research agenda for agricultural communications. The agenda was developed through an interdisciplinary project in which ACE was a partner, with four ACE members on the development team. Agricultural knowledge management served as the framework for this integrated, comprehensive research agenda. It identified broad areas for research effort in this field, posed questions to address in each area and suggested some priority research initiatives. One intent for it was to help any agricultural communications researcher identify where his or her efforts fit into a larger national and international agenda (Doerfert et al., 2007; Osborne, n.d., p. 6, 9-11).

III. Development of a special service dimension in agricultural communications

Nearly 43 years of support for the national student organization, Agricultural Communicators of Tomorrow (ACT), represent one of the most substantial and enduring ACE services to academic programming. This relationship traces back to 1969 when the American Association of Agricultural Communicators in Education approved a petition to serve as parent organization of a new national student group. The request came from a team of agricultural communications students and faculty advisers from Iowa State University, University of Illinois and University of Missouri. They had met twice in Burlington, Iowa, to discuss possibilities and lay groundwork for forming a national organization of students interested in careers in agricultural journalism/communications.

Their plans were guided by results of a national survey during 1968 by students at the University of Illinois. Findings from 22 universities indicated that more than 250 students were enrolled in such programs at 15 universities. Respondents indicated interest and value in a national organization of students in agricultural communications. At that time, students majoring in this field on some campuses had formed professional groups, such as agricultural journalism clubs. However, students had almost no interaction among campuses. A coalition of agricultural college student magazines was their only connecting body. Agricultural College Magazines Associated (ACMA) served as a center for advertising and editorial help.

By early 1969, the student planners had identified a name for the organization and the goals it would serve for members. They had also drafted a constitution and bylaws (Nikolai, 2002; Formation of ACT, n.d.). They saw value in affiliating with a parent professional organization and identified two criteria for doing so. They desired a parent group that represented professional interests across a wide range of communications skills and activities related to agricultural journalism and communications. They also sought a parent group with members represented on-campus, to provide continuing local interactions with students. ACE met both of those criteria, prompting the request by students during the ACE conference at the University of Missouri during mid-1969.

A report in the AAACE newsletter during late 1969 alerted members to the emerging student

organization. The article explained that success of this effort would rest heavily upon support from them on campuses throughout the nation (Evans, 1969).

Twenty-three students from seven universities met with ACE at Cornell University, Ithaca, New York, in July 1970 to form ACT. They ratified the proposed constitution and bylaws, adopted Agricultural Communicators of Tomorrow as the official name, conducted the first ACT communications contest and elected officers (Hutson, 1970). Another important topic of discussion was whether ACMA would become an integral part or remain an independent group. ACMA decided to merge with ACT on an experimental basis for one year. It later did so on a continuing basis.

Inaugural ACT president Frank Holdmeyer summarized the formation as follows: "On the whole, the first national conference of Agricultural Communicators of Tomorrow was a huge success and the future promises a rewarding program of ACTivities."

So ACE found itself serving as a new parent, helping aspiring young agricultural journalists and communicators prepare for their careers.

Active support from ACE took immediate form. The next four ACE conferences (1971 through 1974) served as the venue for ACT conferences (National ACT meeting sites, 1995). At the conferences, students were able to carry out their business matters, communications contests, workshops and professional development sessions. In addition, they had opportunity to take part in the programming of the parent conferences. Students also benefited from meeting and establishing relationships with professionals. Many of the ACT advisers were (as today) members of ACE. Often the teachers of agricultural journalism and communications were affiliated with the same administrative units as other ACE members.

Throughout this 43-year relationship, ACE has helped increase the unity among agricultural communications students, nationally and beyond. It has helped support programs of student recognition and professional development, such as annual critique and recognition programs. ACE provided financial support for those programs. Individual members served as judges of contest materials. They also provided workshops for agriculture student publications and served as speakers in career sessions of ACT conferences. Beyond the first five annual ACT conferences, ACE hosted others across the years.

On home campuses, individual ACE members have supported agricultural communications students in many ways. They have, for example, provided part-time jobs in communications services units, helped teach classes, served as mentors, been guest speakers at ACT meetings, provided workshops, hosted field trips and helped students locate internships and jobs.

Through the affiliation with ACT, ACE has served faculty members as well as students. It provided the first continuing forums for faculty members who advised the student organization. Those relationships among faculty members began informally, but have developed substantially. Two current special interest groups, Academic Programs and Research, within ACE testify to the role it has played. Through these interest groups, ACE is serving faculty members in their professional development, their effectiveness as teachers and their contribution to research in agricultural communications. Through services to agricultural communications faculty members, ACE also has contributed to the formation and development of new academic programs throughout the nation.

Review of Findings

This analysis, as reflected largely through the literature of ACE during the past century, helps answer the three identified research questions.

What were the significant historical contexts through the Association for Communication Excellence (ACE) surrounding the development of the teaching programs in agricultural communications?

The information found in the ACE documentation strongly suggests the organization played a major role in providing a basis for the development of the academic discipline of agricultural communications.

During the early years, programs battled to find their way in the academic setting. However, technological advancements along with the need to deliver scientific information to the general public led to demands for skilled professionals in writing and editing. This led to development of many programs that still exist today in the discipline.

As technology changed, professional development was critical for professionals. ACE has been the bedrock for providing professional development training for agricultural communicators from land-grant institutions. ACE along with support from other entities, formed the National Project in Agricultural Communications (NPAC), which became a critical effort in the overall continued growth of the professional development and training foci of ACE.

Certainly, the evolution of publications such as the *Journal of Applied Communications* (JAC) has provided outlets for scholarly growth of the discipline, including focused research on teaching and professional development.

As demand for skilled agricultural communicators has evolved, so to have programs at institutions around the country. Today, not only are programs robust and growing in terms of curriculum, student numbers, faculty numbers, etc., but also graduate programs are emerging. Certainly, the discipline wouldn't have made the strides it has without the support and commitment of ACE members throughout the years, especially related to a commitment to quality teaching and professional development opportunities.

What were the significant historical contexts through ACE surrounding the development of research in agricultural communications?

From the beginning of ACE the organization and members have helped identify, establish and pursue research missions and agendas that serve today's academic programs in agricultural communications. Research activities of ACE track back a century when the pioneer ACE members were asking "how to" questions about editing. They were looking for answers to help them improve their work and using their annual conferences and first newsletter, ACE, to share experiences and insights.

During the late 1940s ACE members connected with the emerging body of communications research. The National Project in Agricultural Communications (NPAC), which ACE was instrumental in forming, became a source of inspiration and growth for research. During that project of the 1950s and early 1960s ACE members improved their understanding of how research can serve their mission. It also heightened their interest and skills in conducting and using research.

In turn, greater use of research by ACE members helped strengthen the new academic programs in agricultural communications that were established after the 1960s. The evolution of *ACE Quarterly* and *Journal of Applied Communications* as more academic in approach served academic needs of faculty members and graduate students as well as others in ACE. Analysis reveals a uniquely strong and continuing interest in conducting research that serves both the professional needs of practicing communicators and other needs for enhancing the body of knowledge about communications aspects of the many and broadening dimensions of agriculture. Through ACE, practitioners in this field have partnered with teachers, researchers and students in developing a growing, useful research

agenda.

Also, historical analysis reveals how, during the past decade, ACE played a key role in establishing a national framework and agenda for agricultural communications research. This leadership provides another example of how ACE continues to serve the research evolution in agricultural communications.

What were the significant historical contexts through ACE surrounding the development of service efforts in agricultural communications?

This analysis focused on one of the special services and outreach efforts of ACE during the past century, as related to academic programming in agricultural communications.

More than 40 years ago, ACE laid the foundation for Agricultural Communicators of Tomorrow (ACT), the first national professional organization of students in agricultural journalism and communications. ACE did so by accepting a petition from students to serve as parent organization of ACT. Faculty advisors who helped students conceive and plan the organization were active members of ACE, as have been most faculty advisors during the past four decades.

Analysis reveals how this service effort by ACE, begun in 1970, has continued to date. Through that service, the ACE organization and ACE members across the nation have enhanced the development of thousands of young men and women for their professional careers. Analysis has revealed how efforts within ACE to support students through their ACT organization have taken many forms across the years.

ACE also has provided valuable support for faculty members, serving (through joint ACT meetings with ACE) as the first national forum for those who teach and conduct research in this field. That service to faculty members and graduate students has continued, taking more structured form through ACE Special Interest Groups in Academic Programs and Research.

Conclusions, Recommendations and Future Implications

Clearly, the ACE organization and individuals within it have served as the bedrock for development of agricultural communications as an academic discipline as well as a field of professional practice. ACE has done so across all dimensions of the land grant mission – teaching, research and service.

- Sometimes progress has been quiet and out of view. At other times it has been sparked by substantial, highly-visible projects and initiatives such as the million-dollar National Project in Agricultural Communications of the 1950s and establishment more recently of a national and international research framework and initiative.
- Sometimes progress has been unexpected, such as the experience of parenting the Agricultural Communicators of Tomorrow student organization. At other times, steps toward progress have been carefully planned.
- Sometimes progress has emerged through organizational programming and oversight. At other times, progress came through the varied and creative services of individual ACE members on campuses throughout the nation.

In combination, these achievements have greatly strengthened development of agricultural communications in the academic community. They also reveal the value of close ties between (a)

courses, degree programs, research agendas and other academic programming and (b) the day-to-day activities, skills, creativity and insights of those who practice as professionals within the discipline.

Looking forward, missions of the agricultural communications discipline will be well served by a collaborative approach to strengthening these close ties within the academic community. ACE remains the most logical, promising and effective organizational platform for doing so. LaRae Donnellan identified a major aspect of that uniqueness in a Signals column during 1997. She suggested that what makes ACE unique is that it, more than any other professional group, "exposes us to a breadth of tools and processes and activities and specializations we face within the context of our jobs. If we are effective at what we do, we must be integrators and interpreters and collaborators. We must be creative. We must be relevant" (Donnellan, 1997).

Following are recommended stops for doing so during the years ahead:

1. On campuses, encourage administrative and operational structures and arrangements that strongly connect agricultural communications students, teachers and researchers with communications practitioners who serve Extension Services, Experiment Station/Research services and other related programs. Continue efforts to position all as full partners in the teaching, research and service mission of colleges and universities.
2. Enhance collaborative efforts among agricultural communications faculty members and practitioners to provide informal and credit-based opportunities to help current professionals (agricultural journalists and communicators, Extension specialists and educators, agricultural scientists and others) grow in their understanding and skills in using personal and mediated communications.
3. Foster more decision-guiding research, decision data and evaluation efforts that connect communication theory with sound and effective practice.
4. Continue to strengthen the *Journal of Applied Communications* in the special role of highlighting effective practice and advancing the development of new knowledge about communications related to agriculture.
5. Through internships, employment, mentoring and other means, encourage communications units and individual ACE members to nurture the development of students preparing to become professionals in this field.
6. Create forums that involve a broader range of stakeholders in discussing needs and opportunities for agricultural communications as a professional and academic field. For example, forums might involve academic administrators, communications scholars and those who teach and conduct research in agriculture subject areas, as well as agricultural communications practitioners, faculty members and students.
7. Take steps to analyze and assess more clearly the hybrid vigor and academic contributions of organizations such as ACE that, across decades, consistently and in unique ways advance partnerships of theory and practice within the academic community.
8. Develop ways to engage more fully, in teaching and research, communicators associated with the U. S. Department of Agriculture and other public agencies involved in agriculture-related matters.
9. Continue efforts to keep curricula focused on helping students master journalistic skills as a basic foundation for our degree programs.

10. Maintain high academic standards in communications and journalism, no matter if students are taking core courses within our programmatic curriculum or outside our program (journalism or communications program).
11. To that end, we must build strong relationships, when possible, with our colleagues in journalism/communication schools.
12. Create opportunities for students and professionals to interact and become involved in international opportunities, fostering an understanding of cross-cultural communications.

References

Boone, K., Meisenbach, T. & Tucker, M. (2000). Agricultural communications: changes and challenges. Ames: Iowa State University Press.

Busha, C.H. & Harter, S.P. (1980). Research Methods in Librarianship: Techniques and Interpretation. New York: Academic Press.

Carpenter, W. (1978). Five roles of the agricultural editor in communications research. ACE Quarterly 61(2), p. 11-14.

Communications Handbook. (1976). Third Edition. Danville, IL: Interstate Printers and Publishers.

Davis, O.L., Jr. (1991). Historical inquiry: Telling real stories. In E. C. Short (Ed.), Forms of Curriculum Inquiry (pp.77-87). Albany, NY: State University of New York Press.

Doerfert, D.L., Cepica, M.J., Jones, J. & Fiel, S.J. (1991). The current status of agricultural communications/journalism programs in the United States. Report. Center for Agricultural Technology Transfer, Texas Tech University, Lubbock. 39 pages.

Doerfert, D., Evans, J., Cartmell, D. & Irani, T. (2007). Developing an international framework and agenda for agricultural communications research. (2009). Journal of Applied Communications, 91(3,4), p. 7-21.

Donnellan, LaRae (August 1997). Shaping our future. Signals, 8(4), p. 2-3.

Donnellan, LaRae (October 1998). Creating our future. Signals, 9(5), p. 1, 4.

Edgar, L. D., Rutherford, T. & Briers, G.E. (2009). Research themes, authors and methodologies in the Journal of Applied Communications: a ten-year overview. Journal of Applied Communications, 93(1, 2), p. 21-34.

Evans, J.F. and Bolick J.G. (1965). Today's curricula in agricultural journalism and communications. ACE Quarterly, 65(1), p. 29-38.

Evans, J. (December 1969). Moving into ACTion. AAACE, p. 1.

Evans, J. (1972). Broadening the academic base in agricultural communications. AAACE, 55(4), p. 30-40.

Evans, J. (1975). In a fledgling discipline. Paul A. Funk Recognition Program. Special Publication 36, College of Agriculture, University of Illinois, Urbana.

Evans, J. (June 2004). Thoughts about the development, role and future of academic programs in agricultural communications. Invited paper for the 2004 Agricultural Communications Summit, Lake Tahoe, NV, June 23-24, 2004.

Exploring the land of fact. (December 1932). ACE, 15(1), p. 6-12.

Formation of the American Association of Agricultural Communicators of Tomorrow (ACT): Capsule summary. (n.d.). 2 pages.

Graham, G. (May-June 2006). There's more to it than just professional development. Signals, 17(3), p. 4.

Grey, C. G. (July 1959). Case of missing communications research. AAACE, 40(5), 6-7.

Hopkins, A. (1934). Are we, as editors, alive to our responsibilities? ACE, 17(1), p. 1.

Hutson, C. & Vance, L. (July 1970). Formal organization for ACT. Agricultural Communicators of Tomorrow Newsletter, No. 1, p. 2.

Jarnagin, R. A. (1966). Origin and development of the American Association of Agricultural College Editors, 1913-1967. Hoopeston, IL: Mills Publications.

Jeter, F. H. (1920). We may become the outstanding organization. ACE, 1(3), p. 2.

Kansas Draws on Student Talent. (June 1933). AAACE, 15(6), p. 4.

Kern, K. R. (1979). Task force proposes research. ACE Quarterly, 61(4), p. 3-10.

Key, J. P. (1997). Module R12, Historical research. AGED 5980, Research Design, p.107-109. Department of Agriculture Education, Communication, and 4-H Youth Development, Oklahoma State University.

Liss, E. (November-December 1995). Mastering the Web: super workshop a success. Signals, 6(6), p. 1, 3.

Mansfield, S. (1995). Never Give In. The Extraordinary Character of Winston Churchill. Nashville, TN: Cumberland House Publishing Inc.

McAlpin, V. (November-December 1994). Driving change: the future of AgComm. Signals, 5(6), p. 1, 2-4.

McCormick, J. (October 1962). Establishing some bases for communications research. AAACE, Issue 2, p. 1-2, 4-5.

McKeegan, M. (1956). Students help and learn. ACE, 39(4) : 1-3

Meade, A. R. (October-December 1977). A teaching experience and how it came to pass. AAACE, 60(4), p. 24-27.

Miller, M. (August 1962). AAACE members report own research. AAACE, Issue 1, p. 3.

Morgan, V. (May-June 2006). Je me souviens. Signals, 17(3), p. 2.

Naile, T. L., Robertson, J. T. & Cartmell, D. D. II. (2010). Examining JAC: an analysis of the scholarly progression of the Journal of Applied Communications. Journal of Applied Communications, 94(1,2), p. 49-60.

National ACT meeting sites and host professional partners, 1970-1995. (1995). 2 pages.

Nikolai, M. (November/December 2002). How ACT's name came about: The history of the ACT name. National ACTion Newsletter, 23(2), p. 3.

NPAC: an inquiry into its future. (1959). Board of Control, National Project in Agricultural Communications, Michigan State University, East Lansing, MI.

NPAC: the first seven years, 1953-60. (1960). National Project in Agricultural Communications. Michigan State University, East Lansing, MI.

Opportunities for AAACE. (1951). As discussed by the Professional Improvement Committee of the American Association of Agricultural College Editors, meeting October 15-16, 1951, at the University of Illinois, Champaign. Mimeograph. 9 pages.

Osborne, E. (ed.) (n.d.) National Research Agenda in Agricultural Education and Communication: Research Priority Areas and Initiatives, 2007-2010. A joint project of the American Association of Agricultural Education, Association for Communication Excellence, Association for International Agricultural and Extension Education, Association of Leadership Education, NCAC-24 – Experiment Station Committee on Organization and Policy, and the National Council for Agricultural Education. Gainesville: University of Florida.

Pates, J. (1987). What kind of research information do communications practitioners need? ACE Quarterly, 70(2), p. 10-14.

Prabha, C. and Evans, J. (1982). The literature of ag communication: a partial view, 1970-1979. ACE Quarterly, 65(4), p. 15-31.

Read, H. (June 1962). Our dilemma in an academic world. AAACE, p. 3.

Reeder, R. L. (December 1960). Ag editors put research to work. AAACE, p. 1, 6-8.

Report of Committee on Professional Training. (August 1934). AAACE, 17(1), p. 10-11.

Report of the program development conference on improving agricultural communications. (1952). American Association of Agricultural College Editors meeting in Chicago, Illinois, May 25-31, 1952.

Resolution Committee recommendation. (August-September 1933). ACE, 16(1).

Rodekohr, J. (September-October 1996). From the president. Signals, 7(5), p. 2-3.
Rogers, C. E. (1926). The daily on the R.F.D. ACE, 8(3,4), p.10-15.

Round, G. S. (1945). Some things that need DOING. ACE, 38(11), p. 8.

Scruggs, C.G. and Moseley, S.W. (1979). The role of agricultural journalism in building the rural South. Agricultural History, 53(1), p. 22-29.

U.S. Department of Agriculture. (2011). Food and Agricultural Education Information System, maintained in cooperation with the College of Agriculture and Life Sciences, Virginia Tech, Blacksburg.

Wheeler, C. S. (1919). The editor's opportunity. ACE, 1(2), p. 2-3.

Whiting, L. (January/February 2005). Looking at communications research over time. Signals, 16(1), p. 4.

Will to do research appears to lie dormant. (December 1932). ACE, 15(1), p. 6.

Research