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Keywords

Journal of Applied Communications (JAC), professionals, agricultural education, articles, communications, Methodologies

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Research Themes, Authors, and Methodologies in the *Journal of Applied Communications*: A Ten-Year Overview

Leslie D. Edgar, Tracy Rutherford, and Gary E. Briers

Abstract

The Journal of Applied Communications (JAC) has been a primary outlet of agricultural communications research and professional scholarship—a claim validated by a survey of professionals in the field. The purpose of this study was to assess ten years of JAC to determine primary and secondary research themes, frequent primary and secondary research themes by year, prolific authorship, and research methods and types reported, using a mixed-methods design. Analyzed in the study were 91 research and/or professional articles with research methodologies published from 1997 through 2006. The research identified twenty-one primary research theme areas and 28 secondary research theme areas. A compiled list of primary and secondary research theme areas and frequent themes identified by year are reported. JAC authors were identified totaling 222 contributors; Tracy Irani and Ricky Telg (13.2%) were the most prolific authors. A majority of the articles (65.9%) employed quantitative research methods, and survey methodology (47.3%) was the most common data collection measure. Research themes appear cyclic, with specific themes moving in and out of primary and secondary areas, which may contribute to research theme diversity. Research must continue to determine whether cycles exist; if cycles do indeed exist then focus should be placed on determining cycle depth and the influence on research in agricultural communications as an integrated specialization area of agricultural education. This research should be used comparatively with priority areas identified in the National Research Agenda: Agricultural Education and Communication, 2007–2010, to determine where future research might be focused.

Literature Review

Tucker, Whaley, and Cano (2003) indicated that some faculty may emphasize teaching at the expense of other valuable activities, such as research. They further indicated that “with its strong emphasis on education and teaching methods, agricultural education has probably improved the methods of instruction for agricultural communications students” (Tucker et al., p. 25). “Given the institutional demands of research, teaching, extension, and service, faculty often must allow one area to suffer to meet the expectations of another” (Myers & Dyer, 2005, p. 35). However, if research suffers, then every aspect of agricultural communications suffers with it.

A majority of agricultural communications programs are housed in university departments of agricultural education (historical designation) (Boone, Meisenbach, & Tucker, 2000); it is increasingly important for agricultural communications faculty to find ways to collaborate with and within these units while strengthening research agendas. Frequently, initiatives are made to incorporate agricultural communications courses into agricultural education programs. This course collaboration potential can create natural, logical collaborative research projects with agricultural communication

and education faculty. Often research is a determinate of one's prestige and acceptance in a discipline. Therefore, agricultural communications research must be at a level equal to agricultural education research, in order to more easily form, build, and expand collaboration efforts. However, research quality, continuity, and rigor in the discipline have been questioned (Buriak & Shinn, 1993; Dyer et al., 2003; Radhakrishna & Xu, 1997; Silva-Guerrero & Sutphin, 1990; Warmbrod, 1986).

Commentary in the *Journal of Applied Communications (JAC)* has focused on the need for creating research focus, cohesion, and goal-oriented vision (Doerfert, 2003; Tucker, 2004; Whiting, 2002). In an effort to strengthen research agendas, the National Research Agenda [*NRA*]: Agricultural Education and Communication, 2007-2010 was created as a guide for developing futuristic research (Osborne, n.d.). Yet, how can we be sure where we are headed with research, and if the direction is adequate and appropriate, if we are unclear as to where we have been?

The need for this research is grounded in previous research. Newcomb (1993) indicated that agricultural education programs should include agricultural communications courses. Knight (1984) wrote that a discipline's journals and magazines are good indicators of research priorities in the discipline. Radhakrishna and Xu (1997) found that research journal articles are indicators of the profession's scientific activity, philosophy, and application. Ball and Knobloch (2005) indicated that it is critical for practitioners to examine the knowledge base of the field to allow the profession to reflect upon actions and ultimately improve the discipline. Crunkilton (1988) identified the need for agricultural researchers to know where research can and should go in the pursuit to develop empirical knowledge. Doerfert (2003), Tucker (2004), and Whiting (2002) called on agricultural communicators and others to examine their discipline, focus research, create cohesion, and develop goal-oriented visions. Miller, Stewart, and West (2006) identified the need to review literature to maintain a clear sense of the discipline's research agenda. Baker, Shinn, and Briers (2007) indicated the need to examine core knowledge objects and knowledge domains. The expressed need to focus disciplines, examine their knowledge base, and review their literature creates a need to examine research in agricultural communications.

Rapid growth in research and publishing activities under the broad umbrella of agricultural education has resulted in enormous growth of agricultural education literature since the 1990s (Radhakrishna & Jackson, 1995), and new research outlets were created. This growth in literature has further strengthened the need for this study.

A review of literature identified little research focusing on examining the essence of agricultural communications discovery and procedures. By holistically examining the critical components of agricultural communications research, the discipline can deepen its understanding of the current state of its research and take a futuristic approach to knowledge pursuit, development, and examination. The agricultural communications discipline can examine many components: research theme areas, variety in research theme areas by year, prolifically-published authors, and types of research being conducted. If a discipline's journals are indicators of research priorities (Knight, 1984), then by analyzing research-based articles in *JAC* the agricultural communication discipline should be able to reflect on critical dimensions and needs in its research. Understanding research occurring in agricultural communications can assist the field and practice by offering insight into research breadth and depth. Agricultural communications research can impact other integrated specialization areas as outlined in the *NRA*; namely agricultural leadership, international agriculture, extension education, and teacher education. By identifying previous literary focus and determining if prior research initiatives are fulfilling research needs, agricultural communications researchers can focus future research

on areas of importance. This study assisted in creating a framework for agricultural communications by determining the experience base (previous research framework) of research reported in *JAC*.

Conceptual Framework

The future of agricultural communications depends on many variables, and application and acquisition of new knowledge via research are extremely important (Dyer, Haase-Wittler, & Washburn, 2003). Yet, the quality of research in agricultural education, with the inclusion of agricultural communications, has been questioned for more than two and one-half decades, and in some cases it has been identified as inferior to other disciplines (Buriak & Shinn, 1993; Dyer et al., 2003; Radhakrishna & Xu, 1997; Silva-Guerrero & Sutphin, 1990; Warmbrod, 1986).

The conceptual framework of the study (Figure 1) was grounded in previous work by scholars from integrated specialization areas supporting the big umbrella of agricultural education. Several researchers have completed various components of journal analysis in agricultural communications and agricultural education: familiarity and quality of journals and importance of faculty publishing (Miller et al., 2006; Radhakrishna, 1995; Radhakrishna & Jackson, 1993); research theme areas (Buriak & Shinn, 1993; Dyer et al., 2003; Edgar, Edgar, Briers, & Rutherford, 2008a; Miller et al., 2006; Moore, 1991; Radhakrishna & Xu, 1997; Silva-Guerrero & Sutphin, 1990); prolific authors (Harder & Roberts, 2006; Radhakrishna & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992); and statistical methods used (Bowen, Rollins, Baggett, & Miller, 1990; Dyer et al., 2003; Mannenbach, McKenna, & Pfau, 1984).

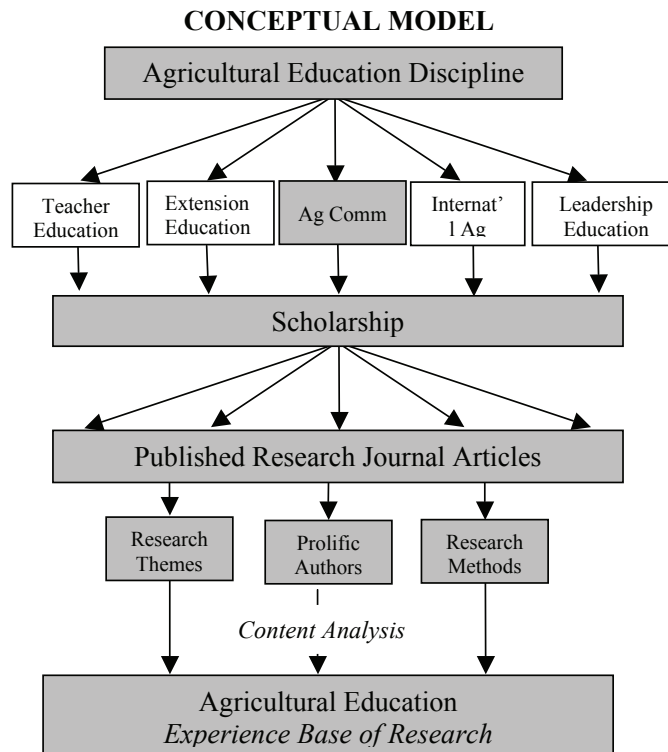


Figure 1. Conceptual base of the study.

This study examined research articles and professional articles with research methodologies published in *JAC* from 1997 to 2006. Using a content analysis approach, the study assessed primary and secondary research theme areas, authorship, and research methods and designs. This research is a step in identifying a research experience base (previous research) in agricultural communications, using the premier agricultural communications journal, as identified in a field study (Edgar, Rutherford, & Briers, 2008b). Conceptually, this research examined agricultural communications' current research role. The experience base from this research can be used as a framework to suggest future research strategies in agricultural communications.

Purpose and Objectives

The purposes of this study were to review research published in the *Journal of Applied Communications* from 1997 to 2006 and to examine the historical record of the journal to provide a base from which to direct future research. *JAC* is a research journal with authors who are teaching-based as well as practitioner-based. The specific objective was to describe and synthesize published research in *JAC* during the ten year period by (a) identifying primary (knowledge-base) and secondary (conceptual-base) research themes in published research articles; (b) identifying primary and secondary research theme areas among research articles published by year; (c) identifying the most prolific authors; and (d) identifying research methods and designs.

Research Methods and Procedures

This study employed a mixed-methods content analysis design. Content analysis as a research method has existed for decades, and the best content-analytic studies employ mixed-methods methodology (Weber, 1990). Content analysis can be used to give researchers insight into problems or hypotheses that can then be tested by more direct methods. Content analysis is a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952; Krippendorff, 1980; Weber, 1990).

Content validity was maintained using both previous research as a guide and a field study to focus the research. Baker, Shinn, and Briers (2007) identified 104 individuals as active agricultural education research authors. A field questionnaire was developed and sent to 96 of those authors with valid email addresses. The contacted authors were asked to identify premier journals in agricultural education specifically in the integrated specialization areas that support the discipline (agricultural leadership, agricultural communications, international agriculture, extension education, and teacher education) and to validate or add to research theme categories. Research theme categories were created based on previous content analyses of journals in agricultural communications, teacher education, leadership education, international agricultural education, and extension education. These categories were provided to the pilot study, and it was the respondents' responsibility to compress or expound on research theme areas. The pilot study identified 37 research theme areas for the five specialization areas identified in the *NRA*.

Dillman's Tailored Design Method was implemented (Dillman, 2000), and 62 of 94 possible respondents completed the questionnaire, yielding a 66% response rate. Sixteen of the 62 field questionnaires were returned blank or partially completed and represented non-useable responses. Non-response error was controlled by comparing early to late respondents (Lindner, Murphy, & Briers, 2001). T-tests indicated no significant differences between the early and late respondents.

Research journal articles and professional articles with research methodologies from 1997 to 2006 in the identified journal, the *Journal of Applied Communications*, were used as the frame for the

study. The main focus of each article (knowledge-base) was coded as the primary research theme area. The most prevalent supporting theme (conceptual-base) was identified as the secondary theme of each article. The principal investigator and a peer independently reviewed the material and formed a checklist of information required during the review of each journal article. The researchers compared notes and reconciled differences on their initial checklists via negotiations. Researchers used a consolidated checklist to independently apply coding. The researchers then checked for agreement in coding; if reliability was not acceptable (researchers coding all content with at least 70% accuracy), then the previous steps were repeated. Once reliability had been established, the coding was applied on a large-scale basis. The final stage was a periodic quality control check (Weber, 1990). Inter-coder reliability was completed, and researcher coding was assessed using at least 10% of each researchers previously analyzed articles. Final reliability was calculated using a random sample of 5% of the analyzed articles. Reliability was assessed using Spearman’s rho. Reliabilities met or exceeded the minimum standard of .70 (Bowen et al., 1990; Tuckman, 1999).

Findings

The *Journal of Applied Communications* was identified in the field study as a premier research journal by 41% of respondents. All research articles and professional articles with research methodologies published (N = 91 articles) in *JAC* from 1997 to 2006 were analyzed. Primary research themes identified in *JAC* are shown in Table 1. The research identified 21 primary research themes from the ten-year content analysis. The most frequently identified primary research theme was information sources and technology (23.1%). The second most frequent primary research theme was communications management, identified in 14.3% of the *JAC* research articles. Additional primary research theme areas are identified in the table.

Table 1
Primary Research Themes Identified in the Journal of Applied Communications 1997–2006
 (N = 91)

Research Theme	f	%
Information Sources and Technology	21	23.1
Communications Management	13	14.3
Communications of Scholarship (research methods & models)	9	9.9
Biotechnology Communications	6	6.6
Media Relations	6	6.6
Distance Education	5	5.5
Accountability	3	3.3
Consumer/Audience Response and Analysis	3	3.3
Curriculum and Program Development	3	3.3
Electronic Media	3	3.3
Food, Agriculture, Natural Resources, Health, and Family	3	3.3
Institutional Organization and Institutionalization	3	3.3
Critical Thinking	2	2.2
Framing	2	2.2
Professional Development	2	2.2
Risk and Crisis Communications	2	2.2
Agriculture Literacy	1	1.1
Instructional and Program Delivery Approaches	1	1.1
Policy Issues	1	1.1
Processes, Principles, and Styles of Learning	1	1.1
Volunteer Development and Leadership	1	1.1

Secondary research themes identified in the *JAC* are displayed in Table 2. The research identified 28 secondary research theme areas. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (14.3%). The second most frequent theme was information sources and technology, identified in 11.0% of the research articles. Additional secondary research theme areas are identified in the table.

Table 2
Secondary Research Themes Identified in the Journal Applied of Communications 1997–2006
(*N* = 91)

Research Theme	<i>f</i>	%
Food, Agriculture, Natural Resources, Health, and Family	13	14.3
Information Sources and Technology	12	13.2
Communications Management	6	6.6
Communications of Scholarship (research methods & models)	4	4.4
Diversity (culture, ethnicity, gender)	4	4.4
Institutional Organization and Institutionalization	4	4.4
Media Relations	4	4.4
Needs Assessment	4	4.4
Skill Development and Competencies	4	4.4
Accountability	3	3.3
Consumer/Audience Response and Analysis	3	3.3
Distance Education	3	3.3
Globalization and Internationalization	3	3.3
Instructional and Program Delivery Approaches	3	3.3
Perceptions and Attitudes Assessment	3	3.3
Writing	3	3.3
Academic Programs	2	2.2
Funding (resource development/needs)	2	2.2
Policy Issues	2	2.2
Agriculture Literacy	1	1.1
Appropriateness of Education	1	1.1
Career Development and Assessment	1	1.1
Community Development and Leadership	1	1.1
Curriculum and Program Development	1	1.1
Framing	1	1.1
Graphic Design	1	1.1
Leadership Development	1	1.1
Risk and Crisis Communications	1	1.1

The research identified research theme by year to determine movement/importance of literature by specific year. Table 3 identifies most frequently-occurring primary research themes by year. Number of research articles by year, theme details, frequencies, and percentages can be seen in the table.

Table 4 outlines frequently used secondary research themes, identified in the *JAC*, by year. Number of research articles by year, theme details, frequencies, and percentages can be seen in the table.

Table 3
Most Identified Primary Research Themes in the Journal of Applied Communications by Year
 (N = 91)

Year	Research Theme	n	f	%
1997	Information Sources and Technology	14	4	28.6
1998	Institutional Organization and Institutionalization	9	3	33.3
1999	Information Sources and Technology	10	2	20.0
2000	Communications Management			
	Communications of Scholarship			
	Communications Technology (3-way tie)	12	2	16.7
2001	Information Sources and Technology	8	4	50.0
2002	Distance Education	6	2	33.3
2003	Information Sources and Technology	5	2	40.0
2004	Communications Management	11	3	27.3
2005	Critical Thinking			
	Information Sources and Technology (2-way tie)	12	2	16.7
2006	Accountability			
	Communications Management			
	Food, Agriculture, Natural Resources, Health, and Family			
	Framing (4-way tie)	4	1	25.0

Table 4
Most Identified Secondary Research Themes in the Journal of Applied Communications by Year (N = 91)

Year	Research Theme	n	f	%
1997	Institutional Organization and Institutionalization			
	Diversity (culture, ethnicity, gender) (2-way tie)	14	2	14.3
1998	Food, Agriculture, Natural Resources, Health, and Family			
	Information Sources and Technology (2-way tie)	9	2	22.2
1999	Information Sources and Technology	10	3	30.0
2000	Food, Agriculture, Natural Resources, Health, and Family	12	3	25.0
2001	Food, Agriculture, Natural Resources, Health, and Family	8	2	25.0
2002	Academic Programs			
	Globalization and Internationalization			
	Institutional Organization and Institutionalization			
	Media Relations			
	Perceptions and Attitudes Assessment			
	Skill Development and Competencies (6-way tie)	6	1	16.7
2003	Communications Management	5	2	40.0
2004	Communications Management			
	Information Sources and Technology (2-way tie)	11	2	18.2
2005	Food, Agriculture, Natural Resources, Health, and Family			
	Funding (resource development/needs)			
	Information Sources and Technology (3-way tie)	12	2	16.7
2006	Career Development and Assessment			
	Food, Agriculture, Natural Resources, Health, and Family			
	Framing			
	Skill Development and Competencies (4-way tie)	4	1	25.0

Prolific authors from *JAC* research articles and professional articles with research methodologies were identified and are listed in Table 5. No distinction was made between lead and supporting authorship. There were 222 authors (duplicated count) identified in the 91 analyzed *JAC* articles. Tracy Irani and Ricky Telg were identified as the most prolific authors in the journal, authoring or co-authoring 12 of the 91 analyzed articles (13.2%). Three of the four most prolific *JAC* research authors are from the University of Florida. Additional prolific *JAC* authors (authoring three or more research articles from 1997 to 2006) are identified in the table.

Table 5
Prolific Research Authorship in Journal of Applied Communications 1997–2006
(*N of Authors = 222, N of Articles = 91*)

Authors	Institutional Affiliation	<i>f</i>	% of Authors	% of Articles
Irani, Tracy A.	University of Florida	12	5.4	13.2
Telg, Ricky	University of Florida	12	5.4	13.2
Lundy, Lisa K.	University of Florida	6	2.7	6.6
Tucker, Mark	Purdue University	6	2.7	6.6
Boone, Kristina M.	Kansas State University	5	2.3	5.5
Ruth, Amanda M.	University of Florida	5	2.3	5.5
Evans, Jim F.	University of Illinois	4	1.8	4.4
Cartmell, Dwayne D., II	Oklahoma State University	4	1.8	4.4
Banning, Steve A.	Bradley University	3	1.4	3.3
Richardson, John G.	North Carolina State University	3	1.4	3.3
Sitton, Shelly P.	Oklahoma State University	3	1.4	3.3
Whaley, Sherry R.	University of Georgia	3	1.4	3.3

Research methods used by *JAC* authors were identified. Quantitative research methods were the most common at 65.9% (60 out of 91 articles), followed by qualitative in 22.0% (20 out of 91 articles); the least often used research methods were mixed (qualitative and quantitative) methods (12.1%; 11 out of 91 articles). Research designs used in the 91 analyzed articles published in *JAC* are outlined in Table 6. Surveys were the most frequently used research design (47.3%). Content analysis research was used in 15.4% of the published research. Additional research designs and procedures, in *JAC* research articles, are identified in the table.

Table 6
Research Method Designs Used in the Journal of Applied Communications
1997–2006 (N = 91)

Method Type	<i>f</i>	%
Survey	43	47.3
Content Analysis	14	15.4
Case Study	9	9.9
Interviews	6	6.6
Evaluation	4	4.4
Historical	4	4.4
Experimental	3	3.3
Correlation	2	2.2
Open-ended Questions/Reflections	2	2.2
Surveys and Interviews	2	2.2
Ex Post Facto	1	1.1
Survey and Focus Group	1	1.1

Conclusions

The *Journal of Applied Communications* was identified as a premier journal for reporting agricultural communications research (Edgar et al., 2008b). Research in *JAC* is adding to the scope and diversity of discovery occurring in the field. In the published articles a variety of research theme areas was seen. The breadth of research theme areas identified appears to contribute a lack of continuity in discovery, with 21 research themes identified as primary and 28 as secondary in the 91 analyzed articles. The theme “information sources and technology” was identified as the most frequent primary research theme area. Investigations focusing on food, agriculture, natural resources, health, and family were the most frequently identified secondary research theme areas. Research themes were cyclic, moving between primary and secondary, and moving out of primary and secondary for a time before cycling back in. An example of this phenomenon is the theme area “information sources and technology.” It is seen as the most frequent primary research theme in 1997, the most frequent secondary theme in 1998 and, again, as the most frequent primary theme in 1999, 2001, and 2003. In 2004, information sources and technology was the most frequent secondary research theme, and it was seen as the most frequent primary and secondary research theme area in 2005. These apparent research cycles may be indicators of the breadth of research occurring in the field. But are they indicators of research depth? Research themes identified most frequently may be indicators of what agricultural communicators’ value in terms of research priorities.

Few researchers contribute programmatically or consistently to agricultural communications research published in *JAC*; Irani and Telg author research in slightly more than one article per year and others much less. *JAC* is a research journal with authors who are faculty and practitioner-based, and research published in *JAC* is dominated by faculty. Quantitative research employing survey methods was most prevalent in published articles. Based on research methods and designs, agricultural communications research lacks diversity of research methodologies and scope, and perhaps depth and quality—if one assumes that depth and quality are indicated by methods that move toward cause and effect relationships.

This study was an attempt to establish an experience base (previous research framework) in research occurring in agricultural communications. It is critical to create an experience base in order to complete a comprehensive and holistic examination of a benchmark, such as the *NRA*. Numerous researchers (Ball & Knobloch, 2005; Crunkilton, 1988; Doerfert, 2003; Miller et al., 2006; Tucker, 2004; Whiting, 2002) have indicated the explicit need to examine the literature in an effort to improve research. Agricultural communications is viewed by professionals in the agricultural education field as supporting the discipline; the *NRA* adds to this evidence. Therefore, every effort must be made to understand how the field of agricultural communications affects agricultural education. Furthermore, it is important for the agricultural communications discipline to know where previous research has been focused in an effort to determine where research concentration should occur in the future (Crunkilton, 1988).

Discussion and Implications

Baker, Shinn, and Briers (2007) issued a specific call to examine the knowledge domains of agricultural education. Miller et al. (2006) identified the need to review literature to maintain a clear sense of the discipline’s research agenda. Doerfert (2003), Tucker (2004), and Whiting (2002) outlined the need for creating research focus, cohesion, and goal-oriented vision. This study was an attempt to assist with each of the above identified areas. This research identified variety, perhaps excessive variety

when looking at the relatively small number of published research articles in *JAC*. Agricultural communications research may reflect a broader view as it examines elements of numerous knowledge domains. Excessive variety in research themes may be a result of agricultural communications' attempt to find its place. For more than a century, agricultural communications programs and research have struggled to find a home in academic units and research agendas (Boone et al., 2000). Agricultural communications may still be searching to find where it fits in the context of agricultural education and communications and journalism. Even though agricultural communications has existed in academic units for more than a century, the discipline still has relatively few faculty members conducting research in numerous contextual areas and knowledge bases. The relatively small number of faculty members attempting to cover the numerous research priority areas of the discipline may be adding to research breadth, but it is unclear how this variety affects discipline depth. It is also highly likely that *JAC* is not the only premier agricultural communications journal, but it was identified as a premier journal (Edgar et al., 2008b).

Furthermore, this research discovered that few researchers add consistently to the scope and diversity of agricultural communications research; authors Irani and Telg clearly led the way in published *JAC* research. Four of the six most prolific authors either work for or graduated from the University of Florida. Because researchers bring with them a variety of interests in both research topics and strategies, this finding is an important component in research stability and diversity. Research in *JAC* may be influenced by programs with research prominence (e.g., University of Florida). Would agricultural communicators benefit from prolific authors assisting graduate students, new faculty, and practitioners interested in developing, producing personal research initiatives? Can we better utilize prolific authors by highlighting their areas of expertise and using them as specialists? Would this allow us the opportunity to move from a generalist approach in examining knowledge to becoming research area (theme) experts?

Knight (1984) and Radhakrishna and Xu (1997) indicated that published research journal articles are indicators of the profession's current state. Although this research supports Knight and Radhakrishna and Xu, it also provides a note of caution and an evident need for more variety in research methodology and design in agricultural communications research. The findings of this study indicate that a majority of research in agricultural communications is survey research. Based on the research published in *JAC* there is a clear need to focus research themes while improving and diversifying methodological research strategies beyond survey research. Criticisms have been made regarding research rigor and diversity in agricultural education; agricultural communications is often grouped in this field of study, and its research may be contributing to those critiques. There is a need to engage in research methodologies to answer the "why" questions as well as the "what is." There is a need to understand if current research is adding to depth and not just the breadth of research.

In 1993, Newcomb identified a need to transform university agricultural education programs: he encouraged universities to broaden programs by offering leadership programs, extension education, agricultural communications, and international development and to add depth to teacher education programs. As faculty members in agricultural communications continue to forge new alliances and collaborate with agricultural education, it is clear that our research must be at or above the current level of research in agricultural education. This study was a first step in determining the current state of research in agricultural communications. This research attempted to outline research priorities, strategies, and designs used during the past ten years; it calls for a comparison of the identified experience base to a futuristic framework, such as the *National Research Agenda: Agricultural Education and*

Communication, 2007–2010 (Osborne, n.d.). Although research work in agricultural communications feeds into multiple communications and journalism journals, our peers and others associated with agricultural education identified *JAC* as a premier journal. If these individuals are looking at *JAC* to assess our current level of research productivity and depth of the research, would they be pleased?

Recommendations

The *Journal of Applied Communications* must expand the breadth of researchers consistently publishing articles. The Journal might create thematic issues to reduce research fragmentation; it should also increase the number of research articles for each issue. Agricultural communication as a profession and practice must continue to reflect upon those actions that ultimately improve its field. It is imperative that professionals in agricultural communications improve research methodologies while decreasing the lack of continuity in research theme areas. This study calls for future studies to examine the essence of agricultural communications and its role under the large umbrella of agricultural education. It is imperative to understand if today's agricultural communications research is adding to the depth of our "well" of research and not merely to the breadth. Our research should strive for depth, richness and impact. We must continue to deepen our "well" of knowledge and not just expand our "pool." As an area of practice, do we have the volume and quality of theoretical underpinnings and fundamental work needed to support the field as it expands its research "well"? Or do we need to continue to move deeper before we expand in width? Reflections regarding efforts to improve and diversify the discipline must continue. Additional research must be completed to continue to determine types of and changes in research theme areas. Additional theme research would assist in determining how agricultural communications research is incorporated in agricultural education and other integrated specialization areas, as well as in other disciplines and research initiatives.

A pattern appears to exist in the primary and secondary research themes identified in this study. Further research must be completed to determine the degrees of research theme cycles, meaningfulness of cycles, and how cycles affect agricultural communications both as an area of scholarship and as an area of practice. Agricultural communications researchers must diversify their research methodological portfolios to include more variety in research methods and designs. Additional research must be completed to determine the depth and rigor of survey methods used in our research. Research must continue to determine whether current research methods are serving agricultural communications and the agricultural education discipline in an effort to advance its scholarship. Further research should provide methods and standards for exceptional, rigorous research in agricultural communications.

Reflections regarding efforts to improve and integrate agricultural communications into departments or units, historically, of agricultural education must continue. Current agricultural communications research (experience base) must be compared to emerging research priorities for agricultural communications. By using a benchmark, such as the *NRA* (Osborne, n.d.), agricultural communications can better determine if previous research is supporting emerging research priority areas and to determine where adjustments must be made.

Keywords

content analysis, research themes, research methods, prolific authors, *Journal of Applied Communications*

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