

**A 10-YEAR CONTENT ANALYSIS TO ASSESS RESEARCH THEME AREAS
IN AGRICULTURAL EDUCATION:
GAP ANALYSIS OF FUTURE RESEARCH PRIORITIES IN THE DISCIPLINE**

A Dissertation

by

LESLIE DAWN JENKINS EDGAR

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2007

Major Subject: Agricultural Education

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ABSTRACT

A 10–year Content Analysis to Assess Research Theme Areas in Agricultural Education:

Gap Analysis of Future Research Priorities in the Discipline.

(December 2007)

Leslie Dawn Jenkins Edgar, B.S., Utah State University;

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The field of agricultural education relies on multiple research journals to disseminate findings. This study focused on a 10-year content analysis of research published in premier journals in agricultural education. The study ascertained primary research themes, types of research conducted, prolifically published authors, frequently cited authors, and frequently cited referenced works, and discussed how the formation and usage of research in agricultural education has changed from 1997 to 2006. The study sought assistance from agricultural educators to narrow the focus of the study and to ensure study content validity.

A conceptual model, based on a thorough review of literature and a focus on the peer discipline areas of agricultural education, guided the study. The study utilized a field study and employed descriptive statistics.

Premier agricultural education (AGED) journals were identified: the *Journal of Agricultural Education* (93%); *Journal of International Agricultural and Extension Education* (67%); *Journal of Extension* (63%); *North American Colleges and Teachers*

of Agriculture Journal (48%); *Journal of Applied Communications* (41%); and *Journal of Leadership Education* (41%). The study identified primary and secondary research themes, prolific authorship, research methods and types, and frequently cited authors and referenced works in each of the identified premier AGED journals. The research used compiled data, from each of the research journals, to analyze the frequencies and gaps identified in the *National Research Agenda [NRA]: Agricultural Education and Communication 2007-2010* (2007).

Agricultural education in domestic and international settings: Extension and outreach was the research priority area noted as the most frequently identified in past research and no gaps were identified in the NRA.

To continue to strengthen the agricultural education discipline, research from this study should be used to adjust research priority areas in the NRA and on the regional and state levels.

DEDICATION

This work is dedicated to my parents, Dan and Diane Jenkins, for teaching me the importance of an education and for their love and support throughout my pursuit of knowledge. Dad - thank you for always being just a phone call away and for teaching me that an education can disguise many shortcomings. Mom – thank you for believing in me and never letting-on about the “short-bus.”

This work is also dedicated to my best friend, my husband Don. I will never be able to thank you enough for your love and support. You are my greatest treasure and I am so thankful you are a part of my life. Thank you for all your help (especially the countless hours of data entry), patience, encouragement, and love. You are the love-of-my-life and I can not believe we are both doctors!

To my children, Madison, Paden, Ryle, Alissa, and Emily, I love each of you dearly. I want each of you to know that I believe in the power of an education. I hope each of you will make a commitment to attend a college or university.

I send a special thank you to my sisters, Mindy and Michelle. You are both amazing woman and it is an honor to be your sister. Thank you for your love, support, and encouragement. To my brothers, I told you so! From special education to doctor, life has gone full-circle. I love each of you, thank you for the laughs, love, and the jokes that fueled my passion to complete my education.

No acknowledgement of gratitude would be complete without expressing my sincere appreciation to my Heavenly Father, who made this all possible.

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CHAPTER I

INTRODUCTION

Agricultural education contributes scholarship to agricultural and educational systems by linking technical areas of agriculture and the humanistic dimensions (Barrick, 1988). It has been difficult to appraise the impact of agricultural education, and it is equally difficult to see its potential (Williams, 1991). In 1987, action by the North Central Regional Association of State Agricultural Experiment Station Directors expanded the acceptance of agricultural education as a discipline (NCA-24 Committee).

With the forming of agricultural education as a discipline, research has sought to further understand the theoretical and conceptual underpinnings in its context, and numerous attempts have been made to focus the discipline. These attempts have typically focused on three main objectives: (a) analyzing the dimensions of agricultural education, (b) summarizing critiques of agricultural education research, and (c) suggesting strategies to focus the discipline (Barrick, 1989).

Newcomb (1993) identified the need to transform university agricultural education programs and encouraged universities to broaden programs by offering leadership programs, extension education, agricultural communications, and international development, and to add depth to teacher education programs. He also encouraged embracing a different approach to research in agricultural education to include a defined program of inquiry.

Today's agricultural educator must be able to adjust to constant changes in the

This dissertation follows the style and format of the *Journal of Agricultural Education*.

agricultural industry while developing and delivering educational materials that meet the needs of diverse publics. Change is constant, and it brings with it the inability of some disciplines to reinvent themselves, which has impacted the academic world (Welch, 2005). Welch identified that newer modes of inquiry are not easily confined in preexisting fields of study and suggested that advances in pedagogy, changing demographics of students, changes in the managerial structure of higher education, international challenges, and a loss of exclusivity have impacted the academic environment.

Although there have been few specific calls from in the discipline to examine its very essence, numerous scholars have expounded on disciplinary typology (Baker, Shinn, & Briers, 2007; Miller, 2006; Miller, Stewart, & West, 2006; Dyer, Haase-Wittler & Washburn, 2003; Kotrlik, Barlett, Higgins, Williams, 2002; Barrick, 1998; Radhakrishna & Xu, 1997; Radhakrishna, 1995; Radhakrishna & Mbaga, 1995; Shinn, 1994; Radhakrishna, Eaton, Conroy, & Jackson, 1994; Buriak & Shinn, 1993; 1989; Radhakrishna & Jackson, 1992; Frick, Kahler, & Miller, 1991; Williams, 1991; Silva–Guerrero & Sutphin, 1990; McKinney, 1987; Crunkilton, 1988; Warmbrod, 1987; 1986; Moss, 1986; Knight, 1984; Mannebach, McKenna, & Pfau, 1984; McCracken, 1983; Mannebach, 1981; Love, 1978; Hamlin, 1966; Warmbrod & Phipps, 1966).

“The future of agricultural research depends upon many variables, not the least important of which is acquisition and application of new knowledge generated from research” (Dyer, Hasse–Wittler, & Washburn, 2003, p. 61). Moore (2005) posited that it is clear that agricultural educators are not “driving” the profession and they spend their

time “dabbling in esoteric research that doesn’t have much relevance to the real world” (p. 1). Concerns have been voiced about whether the future can be forecasted, but without looking ahead, where will agricultural education be in the next decade?

Peter Drucker (1998) suggested:

...in human affairs political, social, economic, and business, it is pointless to try to predict the future, let alone attempt to look ahead 75 years. But it is possible and fruitful to identify major events that have already happened, irrevocably, and that therefore will have predictable effects in the next decade or two. It is possible, in other words, to identify and prepare for the future that has already happened. (p. 16)

The world is changing and will continue to do so; making it increasingly imperative to continue the search for timeless principles (Collins, 2001). The practices of agricultural education will continue to evolve and change, and the professoriate must be ready to meet those changes. Scholarly efforts are a part of the promotion and tenure process for faculty members; however, there are varying degrees in the quality and quantity of scholarship published. “As a rule there are in everyone all sorts of good ideas, ready like tinder. But much of this tinder catches fire, or catches it successfully, only when it meets some flame or spark from outside” (A. Schweitzer, as cited in Balian, 1994, p. v). Scholarship varies in importance, need, content, superiority, and capacity; however, the research created in the discipline influences the future efforts of the field.

Since the 1990s, a rapid growth in research and publishing activities in the agricultural education profession has resulted in enormous growth of agricultural

literature (Radhakrishna & Jackson, 1995), and new research outlets were created. There is a need to develop a national, regional, and state research agenda for agricultural education (Greiman & Birkenholz, 2003; Shinn, 1994; Williams, 1991). “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. 45). If research suffers, every aspect of agricultural education suffers with it. Balian (1994) noted that research is satisfying when you have a fascination for the work. “Research is fundamental to learning; learning is intrinsic to growth; and growth is what life is about...when we stop researching and learning, we pass away from this place” (p. 3).

Knight (1984) and Radhakrishna and Xu (1997) indicated that research journal articles and research articles in conference proceedings are indicators of the profession’s current state. Greiman and Birkenholz (2003) completed research using faculty representing 24 land-grant institutions. Their research indicated that faculty authorship of research manuscripts during a 5-year period represented two-thirds of refereed research papers and one-third of refereed journal articles.

Newcomb (1993) suggested that research in agricultural education has become more focused, coordinated, and conducted with a “passionate vision” (p. 8). Ball and Knobloch (2005) indicated that it is critical for practitioners to examine the research base of the practice to allow the profession to reflect upon those actions and ultimately improve the discipline. Miller, Stewart, and West (2006) identified the need to review literature and track citations to maintain a clear sense of the discipline’s research agenda.

Crunkilton (1988) suggested that a framework be developed to show researchers where they have been and where they can and should go. The expressed need to focus the agricultural education discipline, examine its research base, review its literature, track its citations, and create a future framework creates a call for the completion of a holistic approach to examine research in the discipline.

There have been few specific calls in agricultural education to examine the very essence of its research. Yet there is a need to understand where the discipline has been to allow the profession to better understand where to focus research efforts in the future. “There is a need to re-examine agricultural education in a future that has already happened. Has the knowledge changed along with the times?” (Baker, Shinn, & Briers, 2007, p. 1). Baker, Shinn, and Briers indicated a need to examine core knowledge objects, and the collective knowledge domains for agricultural education, and this need remains. There is a need, as illustrated by research, to analyze the dimensions of agricultural education in a holistic manner and suggest strategies to focus the discipline and prepare it for the future.

Purpose of the Study

The purpose of this study was to conduct a thorough review of research published in major research journals in the agricultural education to critically examine the status of the discipline and provide a basis from which to direct future research. The primary purpose of this study was to determine primary and secondary research themes used in the agricultural education from 1997 to 2006. The secondary purpose was to examine the *National Research Agenda: Agricultural Education and Communication*

2007 – 2010 (2007) to determine frequencies and gaps in research. “If research and development are to lead the way, we must continually review and evaluate our efforts” (Mannebach, McKenna, & Pfau, 1984, p. 1).

Objectives of the Study

Four objectives were established to guide this study:

1. Determine premier research article outlets (research journals).
2. Describe published research, from 1997 to 2006, in each of the premier agricultural education research journals identified in objective 1:
 - a. Identify primary and secondary research themes in the identified published research articles.
 - b. Identify primary and secondary research themes among research articles published by year.
 - c. Identify the most prolific authors.
 - d. Identify research methods and types.
 - e. Identify the most frequently cited authors in the premier AGED journals (as identified in objective 1).
 - f. Identify the most frequently cited referenced works.
3. Synthesize and compile the research from the premier agricultural education journals from 1997 to 2006:
4. Determine frequencies and gaps in agricultural education research as compared to the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007).

Implications of the Study

The implications of this study are far-reaching as it draws attention to past, present, and future research in agricultural education via a holistic approach. The research examines dimensions of agricultural education and suggests strategies to focus the discipline. Agricultural education research can be influenced by individual researchers, research initiatives, and funding sources that have the potential to fragment the discipline and cause professionals to focus on research that may not be a priority. This study used the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) because it was the most holistic research framework available for comparison with past research. This research can assist professionals in agricultural education to make better research decisions.

Operational Definitions

Agricultural Communications – “the exchange of accurate information about the agricultural and natural resources industries, ideally through the most effective and efficient channels available using appropriate communication techniques and theories” (Texas A&M University Department of Agricultural Leadership, Education, and Communications, 2006, p. 7).

Agricultural Education – involves both formal and non-formal processes, activities, and programs associated with agriculture; blending applied sciences of agriculture with the applied behavioral sciences of education. It addresses education in and about agriculture as part of formal public education and as part of non-formal education (McCormick, 1989).

Conference Proceedings – an organized conference to present research manuscripts to expand and to update agricultural education research and primary research themes addressing current trends and issues, descriptions or analyses of innovations, research, philosophical concerns, and learner/program evaluation in agricultural education; often peer-reviewed and/or refereed; usually published electronically (NAERC, 2006; SAAS-AgComm, 2006).

Extension Education – professional development opportunities in program development, strategic planning, tactical planning, evaluation and accountability, leadership development, and experiential education for Extension personnel or those individuals interested in being involved with Extension education (Texas A&M University Department of Agricultural Leadership, Education, and Communications, 2006) and/or grassroots programs designed to address issues, problems, and concerns of individuals, organizations, and communities (Albright, 2000).

International Agricultural Education – “to develop knowledge, experience, and scholarly competence among faculty and students, provide service, and foster involvement in activities that enhance agricultural education in the international arena” (Texas A&M University Department of Agricultural Leadership, Education, and Communications, 2006, p. 6).

Journal – a publication of manuscripts, either online or in print or both, to expand and update the research and knowledge base addressing current trends and issues, descriptions or analyses of innovations, research, philosophical concerns, and

learner/program evaluation in agricultural education; often peer-reviewed or refereed or both (*JAE*, 2006; *JAC*, 2006; *JOE*, 2006).

Leadership Education – Leadership education involves implementing strategies to educate students to develop into leaders who are able to guide and direct the industry (Birkenholz & Schumacher, 1993).

Peer-Discipline – the context areas composing agricultural education; namely teacher education, Extension education, agricultural communications, international agricultural education, and leadership education (McCormick, 1989; National Summit on Agricultural Education, 1989).

Teacher Education – systematic post-secondary preparation of agriculture teachers to fulfill agricultural teaching needs at the secondary school level (Herren & Edwards, 2002) and the delivering of unique skills and competencies associated with teaching in classroom settings to youth or adults (Texas A&M University Department of Agricultural Leadership, Education, and Communications, 2006).

Theoretical and Conceptual Base of the Study

The theoretical framework of this study lies in Boulding's (1956) general systems theory: "the skeleton of science that aims to provide a framework or structure of systems on which to hang the flesh and blood of particular disciplines and particular subject matters in an orderly and coherent corpus of knowledge" (p. 208). The theory is used to study all relationships abstracted from any body of empirical knowledge. This is a mathematics-based theory with language underpinnings but it does not give content. In a sense, agricultural education corresponds to a specific segment of the empirical world,

and the discipline develops theories that have applicability to its own empirical segment. Agricultural education creates certain elements of the experience of individuals and develops theories and patterns of research that provide understanding to its empirical knowledge. Furthermore, the general systems theory is a “single, self-contained theory that contains practically everything” (Boulding, 1956, p. 197). The theory does not focus on specific content.

Systems theory deals with epistemological processes underlying knowledge acquisition and allows algorithms to be developed for computer-based systems modeling (Gaines & Shaw, 1984). It is typically a part of positivistic research that can be used with gap analysis or with fuzzy analysis (post-positivistic research). “System theory can be used to analyze, logically, precisely and completely, the implications of philosophical position” (Gaines, 1978, p. 13). The theory is used to consolidate, define, and formalize the notion of a system. Theoretically, this model can assist agricultural education in establishing a system (agenda) of research.

General systems theory indicates that the agricultural education discipline is embedded in the agricultural education context that encompasses peer discipline areas: teacher education, Extension education, agricultural communications, international agricultural education, and leadership education. These peer discipline areas have faculty involved in teaching, scholarship (research), service, and funding and each of these areas influence research occurring in journal articles. Past research indicates that research themes, prolific authors, works cited, authors cited, and research methods are important in determining the current state of research (Barrick, 1989; Harder, & Roberts, 2006;

Radhakrishna, & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992; Miller, Stewart, & West, 2006). This information will become the experience-base of agricultural education research. The *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) was developed to outline future research priorities for the discipline and will be used as a benchmark for the study. This agenda is the first holistic document outlining research priority areas in each of the peer discipline areas. Gap analysis will be used to compare the experience-base to the benchmark to determine the future state of agricultural education research. The agricultural education context is based on research theories derived from the discipline (Figure 1). The general systems model works to develop theoretical models having applicability to two or more of the peer disciplines in agricultural education. The theory has been used in life sciences, sociology, political science, biology, ecology, engineering, cybernetics, economics, and many other areas and disciplines (Gaines, 1978).

The need for this research is grounded in research by Knight (1984), Radhakrishna and Xu (1997), Crunkilton (1988), Newcomb (1993), Miller, Stewart, and West (2006), and Baker, Shinn, and Briers (2007). Knight's research indicated that a discipline's journals and magazines are good indicators of research priorities in the discipline. Radhakrishna and Xu's research indicated that research journal articles and research articles in proceedings are indicators of the profession's scientific activity, philosophy, and application. Crunkilton's research identified the need for agricultural education to know where it can and should go with research in its pursuit to develop empirical knowledge. Newcomb's research called for agricultural education research to

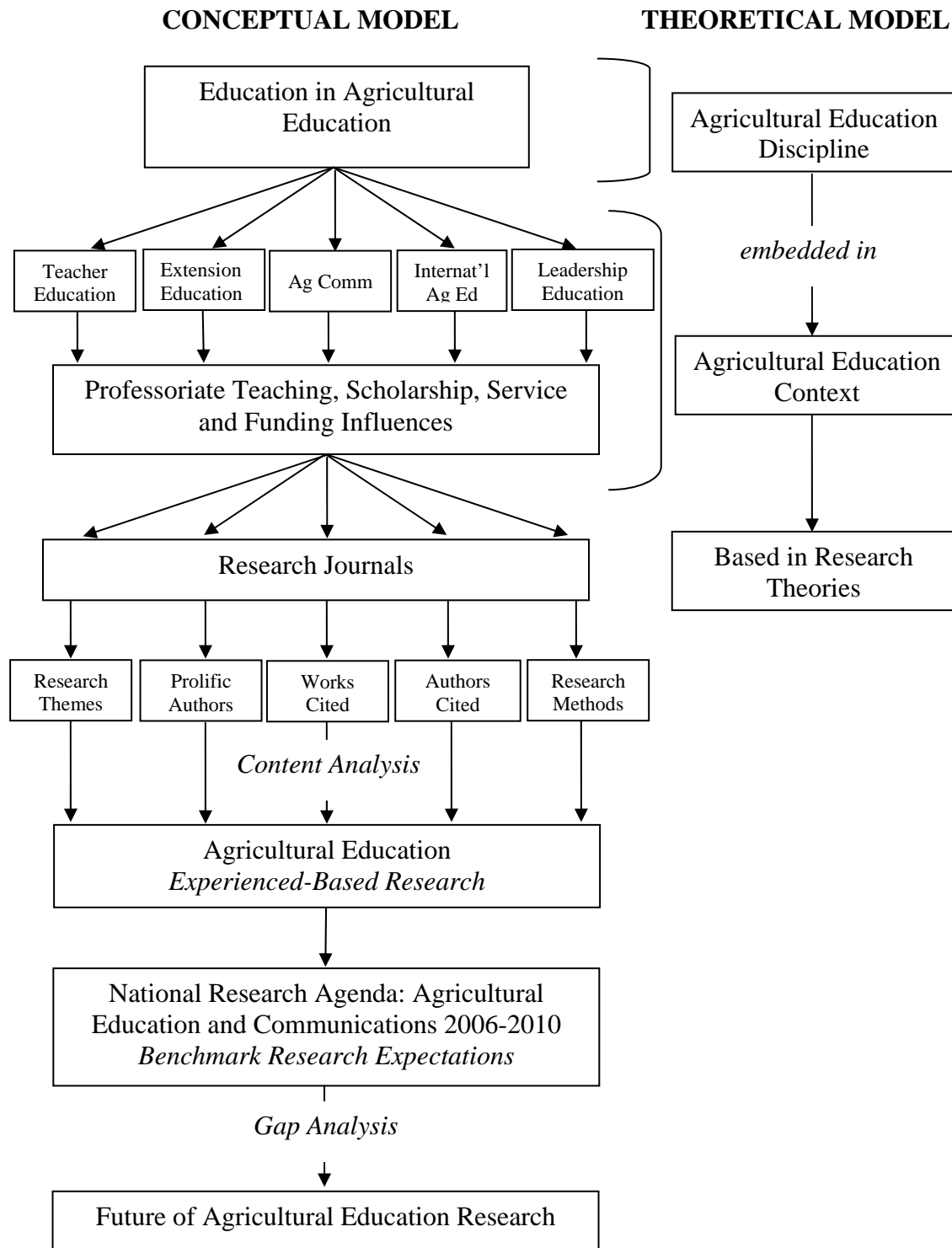


Figure 1. Theoretical and conceptual base of the study.

become more focused and coordinated, and conducted passionately. Miller, Stewart, and West's research identified the need to review literature and track citations to maintain a clear sense of the disciplines research agenda. Baker, Shinn, and Briers indicated the need to examine core knowledge objects and knowledge domains.

Education in agricultural education has developed into numerous peer discipline areas that support the greater context, namely teacher education, Extension education, agricultural communications, international agricultural education, and leadership education. The conceptual framework of the study was grounded in context developed in the peer disciplines of agricultural education and research by numerous scholars in the field. The study analyzed research articles published in agricultural education journals, including all peer discipline areas. Several researchers have examined various aspects of journal analysis in the agricultural education profession: familiarity and quality of journals and importance of faculty publishing (Radhakrishna, 1995; Radhakrishna & Jackson, 1993); research themes, specifically looking at primary and secondary research themes (Miller, Stewart & West, 2006; Dyer, Haase–Wittler & Washburn, 2003; Radhakrishna & Xu, 1997; Buriak & Shinn, 1993; Moore, 1991; Silva–Guerrero & Sutphin, 1990); prolific authors (Harder, 2006; Radhakrishna & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992); works cited (Miller, Stewart & West, 2006); authors cited (Miller, Stewart & West, 2006; Moore, 1991); and research statistical methods used (Dyer, Haase–Wittler & Washburn, 2003; Bowen, Rollins, Baggett, & Miller, 1990; Mannenbach, McKenna & Pfau, 1984).

In this study, research articles will be examined for research themes (primary and secondary research themes), prolific authorship, works cited, authors cited, and research methods employed using a content analysis approach. This information will be used as a baseline in determining experience-base in agricultural education. The *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) sought to identify research priorities in the field of agricultural education. This agenda is the first step to identify where agricultural education can and should go, but the need still exists to develop a literature framework to illustrate where research has been (Crunkilton, 1988). The agenda will provide a benchmark for agricultural education research. The use of gap analysis will provide insight into the research theme frequencies and gaps in research for the discipline. Conceptually, the study is completed with a future outlook for the discipline.

Assumptions

This study assumes that the agricultural research journals identified by prolific authors represent prominent research outlets in the discipline. It is assumed that research published in these outlets are representative of research occurring at universities with colleges of agriculture offering agricultural education programs. The *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) is assumed to represent future research priorities in the agricultural education discipline.

Limitations

The study is limited by time period, focusing on published agricultural education research articles published from 1997 to 2006. The study also is limited to those

agricultural education research articles published in journals identified as premier by prolific agricultural educators in the discipline. The study is also limited by the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) and the extent to which the agenda outlines future research priority areas for the discipline.

Organization of the Remainder of the Dissertation

Chapter II contains a review of literature for this study. The review of literature examines the following:

1. Introduction
2. Historical perspective of the Agricultural Education discipline and the peer disciplines of:
 - a. Teacher Education,
 - b. Extension Education,
 - c. Agricultural Communications,
 - d. International Agricultural Education, and
 - e. Leadership Education
3. Major Influential Factors of the Discipline:
 - a. Teaching,
 - b. Scholarship,
 - c. Service, and
 - d. Funding
4. Summary discussion.

Chapter III describes the methodology and collection of the data techniques used to conduct the study. Chapter IV discusses the data analysis, results, and findings of the study. Finally, Chapter V discusses the summary, conclusions, implications, and recommendations for further study.

CHAPTER II

LITERATURE REVIEW

The agricultural education field of study has developed into numerous peer discipline areas that support the greater context. These peer discipline areas are teacher education, Extension education, agricultural communications, international agricultural education, and leadership education (Figure 2). This literature review first discusses this branching from a historical perspective providing particular focus on agricultural education before delving into teacher education, Extension education, agricultural communications, international agricultural education, and leadership education. After these areas are discussed, the literature then explores major influential factors affecting professors in the agricultural education discipline: teaching, scholarship, service, and funding, and the chapter is completed with a summary discussion.

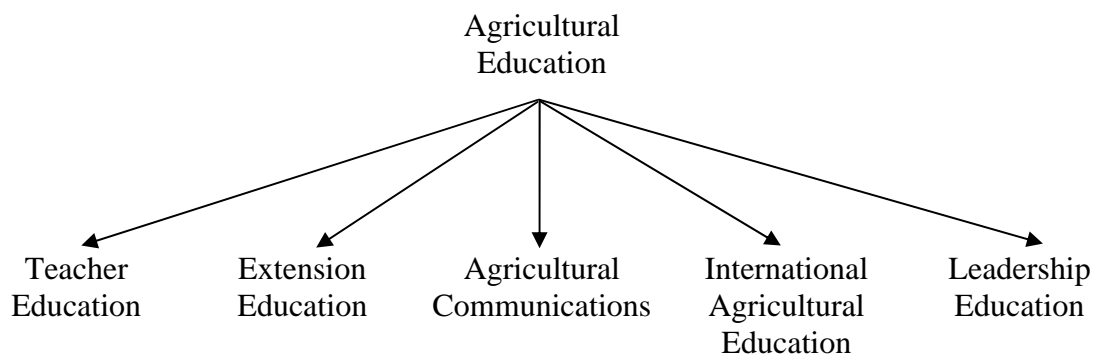


Figure 2. Delineation of the agricultural education discipline.

Agricultural Education

Pinpointing the exact time that agricultural education began is very difficult. Literature tends to state that agricultural education (AgEd) was more of an evolutionary process that developed step-by-step over a long period of time (Hillison, 1997). Agricultural education has had a long and close working relationship with land grant institutions (Herren & Hillison, 1996). With the signing of the Morrill Act in 1862, each state received land to begin Agricultural Schools, known as land grant institutions. These college or universities were established with the primary purpose to provide instruction, in a comprehensive school setting, for agricultural education and home economics education (Hillison, 1989). These schools were to be available to the masses of American people oppressed by the elitist European higher education system that was designed to cater to upper-class citizens (York, 2003). The profession of agriculture education has existed since 1862, and it has since developed a presence in nearly every land grant institution across the nation (Stefferrund, 1962).

Passage of the Smith-Hughes Act of 1917 fostered a greater interest in agricultural education. States were rapidly signing-up for Federal money to support agricultural education programs, and students began to sign-up for classes by the thousands (Hillison, 1997). In the 1950s agricultural education was centered on male agricultural education students who had been raised on a farm and had learned good farming practices on a home farm and in the classroom (Hillison, 1997). The role of today's agricultural education teacher includes greater leadership, more applied science, and greater use of technology (Covington & Dobbins, 2001; Hillison, 1997).

McCormick (1989) defined agricultural education as:

...embracing both formal and non-formal processes, activities and programs associated with agriculture. Agricultural education blends applied sciences of agriculture with the applied behavioral sciences of education. Furthermore, it can be inferred agricultural education addresses education in and about agriculture as part of formal public education and also as part of non-formal education. (p. 46)

McCormick suggested that formal agricultural education involves teacher education and non-formal agricultural education involves Extension education, agricultural literacy (communications), and international agriculture education (1989). Leadership education was also introduced in 1989 via the Strategic Plan for Agricultural Education that identified the need for leadership education in agricultural education. Newcomb (1993) encouraged all agricultural education programs at the university to offer leadership programs, Extension education, agricultural communications, international development, and add depth to their teacher education programs.

Since the beginning of agricultural education programs both educators and learners have had to adapt to changes in the curriculum, audiences, and in the way that the information is conveyed. Today's agricultural educator must be able to adjust to the constant changes taking place in the agricultural industry while developing and delivering educational materials that meet the needs of their diverse publics.

Four decades ago, Berry (1977) suggested that land grant institutions had lost sight of the 1862 Morrill Act intentions. He indicated that agricultural science practitioners' minds had "no direction other than that laid out by the career necessity and

the logic of experimentation” (p. 156). Berry further suggests that lack of direction and moral allegiances leads entities with the greatest power to wield institutions of higher education to their favor. This competition is driven by the fundamental differences in liberal (based on excellence in various disciplines) and practical education (typically based on monetary value).

Love and Yoder (1989) reported:

...as early as 1980...agricultural industry representatives were publicly criticizing the quality of higher education programs in general and agricultural in particular. These representatives addressed student’s lack of practical experience, inability to solve problems and communicate effectively, lack of leadership, management, accounting skills and inability to “get along.” (p. 3)

The modern world has been drawn by a yearning for the future. “The modern mind longs for the future as the medieval mind longed for heaven” (Berry, 1977, p. 56). Berry suggests that the aim of modern life has been to improve the future with the assumption that the future will be better. In our society we have continued to look to the future with favor and for answers, direction, and positive outcomes. Agricultural education is not devoid of this ideology.

Trends in academic, social, and business environments are reshaping education (Lindner & Baker, 2003). Lindner and Baker’s work indicated that “a successful agricultural education graduate student will draw on a variety of academic fields, primary research themes, and secondary research themes to achieve his or her personal and professional goals” (p. 50). To receive this knowledge, skills, and abilities, students

are guided by professionals in agricultural education who have knowledge, skills, experience and competence in teaching and research. Knowledge is supported by professionally acceptable theory and research; skills are the competence to perform a learned psychomotor act. Experience and competence develop with time and an observable behavior results in progression of the discipline.

There are a number of forces evoking a re-examination of agricultural education. The past couple of decades have brought with them the inability of some disciplines to reinvent themselves and this has impacted the academic world (Welch, 2005). Welch further indicated that newer modes of inquiry are not easily confined in preexisting fields of study. He suggested that advances in pedagogy, changing demographics of students, changes in the managerial structure of higher education, international challenges, and a loss of exclusivity have impacted the academic environment.

Some principles in agricultural education have been derived from years of research and practice, while others are new and are still being tested (Williams, 2003). Agricultural education applies its principles through program planning, teaching and learning methodologies, and program evaluation in a variety of settings, including universities, schools, Extension, agencies, and industry (Williams, 1991).

As a result of the efforts of land grant institutions, American agriculture and related life sciences have developed into one of the great marvels of the modern world (Herren & Edwards, 2002). Yet, much debate exists regarding the current status and future direction of America's land grant institutions.

Teacher Education

Congressional District Agricultural Schools in Alabama, Arkansas, Georgia, and Virginia were the first to provide instruction and teacher training in agricultural education and home economics (Herren & Hillison, 1996). Popularity of the programs created a greater need to prepare agricultural education teachers. By 1908 normal schools, those not classified as land grant institutions, were training agricultural education teachers. Myer and Dyer (2004) indicated that agricultural teacher preparation programs today are primarily administratively housed in colleges of agriculture.

In 1917, the Smith-Hughes Act was passed; the legislation formalized the need for systematic post-secondary preparation of agriculture teachers to fulfill agricultural teaching needs at the secondary school level (Herren & Edwards, 2002). This meant departmental establishment of teacher education programs in colleges of agriculture (Herren & Hillison, 1996).

The history of teacher education in higher education, particularly land grant institutions, is unclear (Swortzel, 1998). There has been continuous debate regarding the role and status of teacher educators in higher education (Ducharme & Ducharme, 1996). Carter (1981) found that individuals choose to become teacher educators because they drifted into college teaching, they wanted to work with college-aged students, and they wanted jobs with security and prestige. Burch (1989) found that education professoriates desired to make a difference in education, enjoyed teaching, sought intellectual stimulation, the lifestyle of a college teacher, encouragement and influence of others, and status and prestige of the profession.

In the 1970s, vocational education was deemed a public necessity, with programs, including agricultural education open to everyone (Talbert, Vaughn, & Croom, 2005). The 1970s and 1980s saw an emphasis on the individual student and the need to improve worker efficiency by providing a total education package. The package focused on individualized instruction, career guidance and counseling, vocational assessment, and evaluation. During this time, agricultural education was also charged with assisting each student to locate a good job and keep the job through relevant and specific technical training.

The technology explosion in the 1980s called for workers who could adapt to their changing work environments (Talbert, Vaughn, & Croom, 2005). In 1984 public education in general was criticized. Fundamental changes in American education were called for (United States National Commission on Excellence in Education). Criticism in teacher education programs intensified with the onset of Nation at Risk reforms (Griggs, Jones, & Slocum, 1988). In the late 1980s, agricultural education was notified of changes needed after an examination found it lacking in essential competencies (National Academy of Science, Committee on Agricultural Education in the Secondary Schools, 1988). By the early 1990s, vocational education was tasked to assist with teaching basic competencies in American education to meet the future of an internationally competitive workforce (United States Department of Labor, 1991). In 1996, the National Council for Agricultural Education initiated Reinventing Agricultural Education for the Year 2020 (Talbert, Vaughn, & Croom, 2005). The initiative sought to

create a framework by which professionals could develop a vision for the future direction of food, fiber, and natural resources education.

Today, agricultural education provides training for all students, including those who will not be farming or entering the agricultural industry (Talbert, Vaughn, & Croom, 2005). Change is ever-present and as agricultural education continues into the 21st century it must change with emerging trends in society and the agricultural industry. Although most Americans know little about the agriculture industry, agricultural education professions continue to provide educational experiences for the students of today and for the agribusiness, agriscientists, and agricultural educators of tomorrow.

The teacher is the single most important variable in school effectiveness (Goodland, 1983). “Maintaining an effective teaching force requires that qualified teachers regularly enter the ranks and that practicing teachers are kept abreast of the changes in the profession” (Anderson, Barrick, & Hughes, 1992, p. 43). The quality of teacher education programs is dependent on the quality of its professoriate (Troyer, 1986). Teacher education professoriates are comprised of the men and women who design, develop, implement, and evaluate teacher education programs. Little research could be found on these individuals before the 1960s (Howey & Zimpher, 1990). Today minimal research regarding those individuals involved in teacher education programs can be found (Swortzel, 1998). Little knowledge regarding the professoriate makes it challenging to understand how educators teaching requirements add to research development.

Swortzel (1998) indicated that certain demographic characteristics influence the reasons why individuals at land grant institutions choose to become agricultural teacher educators. These characteristics vary and are not specific determinates as to why individuals enter the profession. “Agricultural teacher educators employed at 1862 land grant institutions perceive it important to make a contribution to the teacher education profession through research” (p. 71). Agricultural educators in higher education use research to influence teaching.

Even though teacher educators roles have changed over the past several years (Hillison, 1998), the preparation of agricultural teacher educators still remains the focus of most agricultural education programs (Anderson, Barrick, & Hughes, 1992). Due to teacher preparation program inconsistency, there is a need to evaluate agricultural teacher educators’ roles (Myers & Dyer, 2004). There is little empirical research on teacher education in agriculture (Swortzel, 1999). This lack of evidence represents a need to understand how research influences teacher preparation programs.

Lytle (2000) suggests that teacher education programs are becoming marginal and dated. Hillison (1998) indicated that constant program reflection is needed by teacher educators to find the most effective ways to fulfill their roles. Future research is needed to collect data to indicate the content in agricultural education programs (McLean & Camp, 2000). Myer and Dyer’s (2004) research analyzed 13 years of content (1989-2002) and determined that more research is needed in the teacher education area.

Extension Education

In 1914, the Smith-Lever Act brought into existence the Cooperative Extension Service as a means of disseminating newly acquired information, knowledge, and innovations, as a part of land grant institution research, to agriculturalists (Rasmussen, 1989). Agriculturalists were able to put the new methods into practice and the practices frequently resulted in improved efficiency and greater productivity. The agricultural education discipline has close ties to agricultural experiment station research and the cooperative Extension program (Herren & Hillison, 1996).

“The vision of utilizing the land grant university’s mission and extending it to the people through cooperative Extension or Extension education has deep roots in American history” (Albright, 2000, p. 32). Harris Townsend commenting on the land grant university system, “Open the doors to all...Let the children of the rich and poor take their seats together and know of no distinction save that of industry, good conduct, and intellect” (Campbell, 1998, p. 3). The rich land grant history from which Extension was borne has proven successful over the past century.

The Cooperative Extension System (CES) is a public funded, non-formal, educational system that links the education and research resources of the United States Department of Agriculture (USDA), land grant universities, and county administrative units (Seevers, Graham, Gamon, & Conklin, 1997). This collaborative system has successfully provided services to all people, without discrimination (Rasmussen, 1989).

The Cooperative Extension program is experiencing challenges for continued survival, due to changing legislative priorities and budget cuts in these ever-changing

economic times (Varea–Hammond, 2004). These challenging times have pushed Extension, in recent years, to look harder at their audiences, the leadership of the organization, and how to deal with societal, global, and demographic changes (Albright, 2000).

“Knowledge has been the product of Extension since its inception,” (Albright, 2000, p. 17). America’s colleges of agricultural sciences that have land grant missions are expected to deliver outreach to clientele and that outreach has occurred primarily through the CES (Bowen & Thomson, 1995). The outreach has traditionally included a) nonformal education not leading to an academic degree and b) research generated by experiment station scientists. Bowen and Thomson indicated that rarely has the research included credit courses taught by agriculture sciences faculty.

Extension education provides professional development opportunities in a) program development, b) strategic planning, c) tactical planning, d) evaluation and accountability, e) leadership development, and f) experiential education for Extension personnel or those individuals interested in being involved with Extension education (Texas A&M University Agricultural Leadership, Education, and Communications Department, 2006). These focal points leverage employee skills to meet changing needs of Extension clientele. Since the passage of the Smith-Lever Act in 1914, colleges of agriculture have prepared individuals to work in the CES, as researchers, field agents, and administrators (Legacy & Wells, 1987). Research needs to analyze research content in Extension education programs (McLean & Camp, 2000).

Agricultural Communications

In the early 1800s, there was a need to share important farm and home information with rural audiences who were isolated (Marti, 1979). This need created the founding of agricultural communications (AgComm) in the United States. Prominent characters such as George Washington, Thomas Jefferson, and Benjamin Franklin helped define the field (Boone, Meisenbach, & Tucker, 2000). These dynamic and influential individuals were outspoken national leaders and served as the early editors and writers in the field. Their reputations and publications assisted with arguments for a number of important political and social issues aimed at improving farming.

By the 1900s agricultural communications had evolved into a highly competitive industry requiring business practice knowledge as well as editorial skills (Burnett & Tucker, 2001). Iowa State offered the first agricultural communications course in 1905. Research interest in persuasion and public opinion heated up with the use of propaganda techniques during World War I. In 1921, radio broadcasts began with weather reports and commodity marketing.

The 1920s through the 1940s brought the United States economic hardship with a waning economy, the onset of the Great Depression (1929-1940), and World War II (1931-1945) (Boone, et al., 2000). During this time, the introduction of new media for news and entertainment (movies and radio) was a major development fueling competition in the communications marketplace (Evans & Salcedo, 1974).

The latter part of the 19th century and beginning of the 20th century, brought with it further technological advances (the world-wide web, computerized tractors and

machinery, satellite marketing, etc.). While a depressed farm economy (hard times and debt), dwindling agricultural audiences, consolidations and mergers, a rural to urban population shift, a globalized economy, and further need to understand how communications affect our existence (Tucker, et al., 2003; Boone, et al., 2000) created an expansion of research in agricultural education.

The state of the agricultural communications profession has been discussed for more than two decades (Boone, et al., 2000). At issue is agricultural communications willingness and ability to report on important social and economic issues as well as controversial topics that could threaten their relationship with agribusiness (Pawlick, 2001; Logsdon, 1992; DeVault, 1983). Despite criticisms, agricultural communications continues to offer viable career options for students combining university coursework in science, agriculture, and communications (Wargo, 1993).

For more than a century, agricultural communications programs have prepared professionals for communication careers and these academic programs are often housed in departments of agricultural education (Weckman, Witham, & Telg, 2000; Reisner, 1990). “Because of their relatively small size and reliance on other academic units to deliver curricula, agricultural communications programs face special challenges to future development in the university setting” (Tucker, et al., 2003, p. 22). Research indicates that agricultural communications academic programs continue to attract a relatively small but steady number of students into this specialized field (Wargo, 1993; Deorfert & Cepica, 1991; Cooper & Bowen, 1989).

“In the 21st century, academic programs in agricultural communications continue to fulfill an important role in preparing professionals for a variety of communications careers in both the private and the public sectors (Tucker, et al., 2003, p. 24). Due to agricultural communications applied science orientation, it is an appropriate venue to incorporate topical general education capacities in teaching, outreach, and research (Ballantine, 1989). The future viability of agricultural communications depends on developed strategies with agricultural education and its ability to balance teaching, research, and outreach programs, and with constructive collaborations with other academic programs (Tucker, et al., 2003).

International Agricultural Education

Agricultural educators have become increasingly aware of the necessity to view the profession from a global perspective and teachers perceive themselves and their students as part of the world community (Harbstreet & Welton, 1992). The global dimension of agricultural education has evolved from teaching prospective teachers the pedagogical skills needed to plan, teach, and evaluate local high school agricultural programs to developing awareness in international agriculture (Welton, 1987). Harbstreet and Welton (1992) indicated that a review of the history of teacher education in agriculture revealed no formal reference to international education until the early 1970s.

Nehrt (1993) indicated that the United States had entered a global era and responsibility falls on education to prepare people for the world. Today’s agricultural educators must be able to adjust to the constant changes taking place in the agricultural industry while developing and delivering educational materials that meet the needs of

their diverse student population (Crunkilton & Krebs, 1982). The ultimate goal in higher education is the achievement of sound educational programs. This should be no different in agricultural education programs.

Since the 1970s the international community has moved toward greater interdependence and globalization is driving a revolution in educational institutions (Zhai & Scheer, 2004). White (1990) noted that internationalizing agricultural education sparked students' interests, revitalized agricultural education programs, and provided students with a more complete picture of agricultural education. Globalization and cultural diversity issues, in recent years, have gained increasing attention in higher education (Zhai & Scheer, 2004). For more than a decade, research has abounded with the need to expand offerings in international agricultural education to students (Irani, Place, Lundy, & Friedel, 2004; Wingenbach, Boyd & Lindner, 2003; Harbstreet & Welton, 1992).

In recent years, agricultural educators have become increasingly aware of the necessity to view the profession from a global perspective (Harbstreet & Welton, 1992). Educators and students are viewing themselves as part of a world community. Harbstreet and Welton (1992) were some of the first researchers to recommend that efforts to teach secondary agricultural students about international agriculture be accelerated. Irani, Place, Lundy, and Friedel (2004), discovered that agricultural students have limited international background and experience with respect to the amount of international learning opportunities. There is an evident need for students to have knowledge of other countries and cultures (Wingenbach, et al., 2003). Allowing students studying

agricultural education to experience international agriculture will increase experiential learning and student understanding. Higher education, at the university level, must be prepared to assist students in their endeavors of maintaining agricultural standards and becoming more internationally minded.

In a study by Zhai and Scheer (2004), global perspectives and attitudes among agriculture students were examined. It was discovered that there was a need to develop programs in higher education to address globalization and diversity issues in colleges of agriculture. Naisbitt (2006) indicated that the global market demands a global sharing of talent and there is a need to stop the decline in the quality of graduates if the U.S. is to compete in a global market. More than a decade ago higher education was charged with “the education of the global citizen, one who will be comfortable visiting, working and living in diverse countries” (Lundstrum, White & Schuster, 1996, p. 14).

As agriculture changes throughout the world it is important for universities to prepare individuals to achieve global awareness. An examination of international agricultural research is needed to assist with understanding where the discipline lies with the acquisition and application of new knowledge generated from research in the international agricultural education peer discipline area (Dyer, Hasse–Wittler, & Washburn, 2003).

Leadership Education

The mission of agricultural education included charges to develop the abilities to exercise and follow effective leadership as early as 1976 (Brown & Fritz, 1994). In 1989 the Strategic Plan for Agricultural Education identified the need to “amplify and expand

the whole person concept of education, including leadership” (National Summit on Agricultural Education, p. 4). It is the charge of agricultural education to provide leadership education (Brown & Fritz, 1994).

According to Gardner (1990), leadership at all levels in society need to be developed. Kouzes and Posner (1987; 1988) indicated that leadership is an observable, learnable set of practices and effective leaders are constantly looking for ways to improve themselves and their departments. Universities have recognized the need and benefits that formal leadership instruction can offer in the classroom setting and in extracurricular programs (Hays, 1999).

Educational systems have been criticized for their inability to develop leaders (Gardner, 1990). Leadership development is “snuffed out” due to the emphasis systems place on individual performance and society’s need for professionals and experts instead of leaders. This emphasis is often at the expense of group performance.

Post-secondary institutions are fulfilling the need for leadership development via curricular and co-curricular offerings and often leadership development is found in departments of agriculture (Fritz & Brown, 1998). The content of leadership courses hinges on several important considerations: students’ comfort level with the concept of leadership, identification of leadership elements, acceptance of leadership as a process, greater awareness of the practice of leadership, establishment of leadership purpose, development of a personal leadership approach, enhancement of analytical skills, and sharing new and emerging leadership theories (Lewis, 1995; Watt, 1995; Wren, 1994). Leadership education also hinges on agricultural educators who recognize the need to

implement strategies to be leaders and/or effectively educate students to develop into leaders who are able to effectively guide and direct the industry in the future (Birkenholz & Schumacher, 1993). Leadership by its nature is multidisciplinary and leadership education often flows over into other disciplines.

Leadership scholars have warned organizations to ensure of their survival in rapidly changing times by becoming learning- or knowledge-based organizations that foster growth and creativity (Bridges, 1996; Senge, 1990). Successful organizations in the 21st century will be discernible by their ability to learn together (Senge, 1990). The changing organizational structure of higher education relies on greater faculty input and reflection in decision-making (Ellsworth, 2001). Mannebach (1990) indicated that changes have occurred at an unprecedented rate in agricultural education. Research needs to be conducted regarding leadership needs in agricultural education to prioritize future research, training and development (Spotauski & Carter, 1993).

Major Influential Factors

Early legislation created a complete tripartite land grant institution model that encompassed education, research, and extension. This model has become envied by much of the world (Herren & Edwards, 2002). Developing countries undertaking the creation of universities, especially institutions that will include agricultural components, closely study the American land grant institution model.

There has been concern echoed by notable scholars regarding land grant universities losing sight of their original mission (Iowa State University, 2001; Campbell, 1996). Research by Herren and Edwards (2002) created a need to determine if

land grant institutions are still serving those individuals outlined in the original mission. Furthermore, their research questioned whether or not Agricultural and Extension departments, including allied Leadership and Communication programs, were “champions” and “arbiters” of the social science components of colleges of agriculture (p. 96).

The 2006-2007 Texas A&M University Faculty Handbook delineates that faculty tenure and promotion is contingent upon teaching, scholarship, service, and funding in the land grant institution (Figure 3). Teaching is identified as classroom and laboratory instruction, development of new courses, labs and teaching methods, publication of instructional materials, and supervision of graduate students. Scholarship deals with the creation and dissemination of new knowledge, or other creative activities. Service is described as providing assistance, benefit or advantage to the institution, the students, colleagues, the department, the college, and the University as well as beyond the campus. Funding is identified as securing monies for areas of teaching, scholarship, and service.

Faculty members drive the agricultural education profession and their success is contingent upon balancing their many responsibilities (D’Arcy, Barrick & Garrow, 2004; Troyer, 1986). It is important for faculty members to thrive in teaching, scholarship, service, and funding in order to achieve and maintain tenure. Scholarship or research is a critical piece of the model. Buriak and Shinn (1993) challenged the agricultural education discipline to identify a research agenda for three reasons: (a) to maintain compatibility with the national priorities for the food and agricultural science

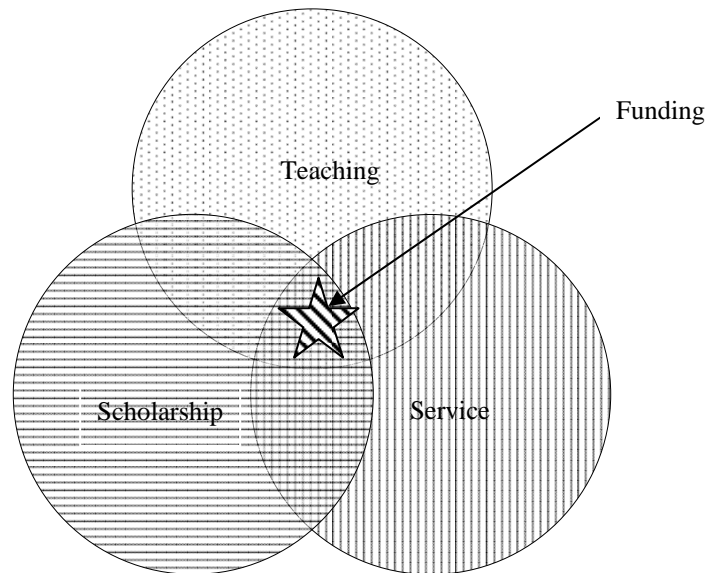


Figure 3. Major influential factors in the agricultural education discipline.

system and the educational system, (b) to guide research investments, and (c) to communicate priorities to agencies and organizations that have national responsibilities for planning and budgeting research. The research focused on the success of individuals publishing research in agricultural education journals. This research is grounded in the idea that the profession must understand where it has been in order to plan where it is headed.

Teaching

Public interest in the quality of teaching in America's college classrooms prompted improved instruction in the 1990s (Wardlow & Johnson, 1999). Those involved in delivering college-instruction in agriculture began placing new emphases on quality teaching (Board on Agriculture, National Research Council, 1992).

Clark (1991) noted that "to educate is to lead responsibly by influencing students' knowledge, skills, and dispositions in ways that will serve them and their society well" (p. 257). Lockaby and Vaughn (1999) suggested that educators primary role to the public is to nurture and contribute to the emotional, social, and personal development of people.

Wiedmer (1994) indicated that students, the primary clients of higher education, considered teaching as the most important function of faculty members. His work suggests that the importance of teaching to the mission of land grant institutions has yet to become a major influence in faculty personnel decisions. Boyer (1990) noted that part of scholarly duties for faculty members was to use research to assist students with learning. His view of teaching as a component of scholarship with both having equal importance includes rewards for both functions. The rewards include promotion, tenure, and salary considerations. Furthermore, Boyer noted that "teaching is one of the most important activities of a college professor" (p. 96). Goecker (1992) posited that teaching is a priority for colleges and universities with agricultural education faculty.

The literature indicates that the quality of teacher education programs is dependent on the quality of its professoriate (Troyer, 1986). Tucker, Whaley, and Cano

indicated that there is a potential tendency to emphasize teaching at the expense of other valuable activities, such as research (2003). They further indicate 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., 2003, p. 25).

Wardlow and Johnson (1999) posited that faculty members in land grant institutions devote approximately one quarter of their time and energies to teaching. Greiman and Birkenholz (2003) indicated that agricultural education faculty spent about one half of their appointment devoted to teaching duties. Their research also indicated that the majority of faculty surveyed had a high interest in learning more skills to improve teaching. Williams (1991) noted that one of the strategies for the agricultural education discipline was the need to tie agricultural education research to educational centers of excellence. The tie would allow these centers to assist educators with teaching and learning strategies for agriculture. Today, Centers of Teaching Excellence are common entities on university campuses (Frost & Teodorescu, 2001).

Peterson (1999) noted that the agricultural education discipline values excellence and professionalism in research, teaching and service. He also placed importance on the value of scholarship that uses research to inform the profession. Peterson posited that by 2009, “we envision a million-dollar research and development agenda that is focused on the teaching and learning processes in and about agricultural, food and environmental education” (p. 8).

There has not been extensive research looking at faculty members' interest, time spent, or competence in teaching. The research indicates that teaching plays an important role in the requirements of the professoriate and that research should add to teaching. Teaching, research, and service together add to the integrity and longevity of the agricultural education discipline.

Scholarship

Research in the 1990s indicated that the frequently held view of being a scholar was being a researcher, and that the amount of publications was "the primary yardstick by which scholarly productivity is measured" (Boyer, 1990). Boyer called on American higher education to redefine scholarship with an exclusive focus on conducting and publishing research to a broader view than was currently occurring.

Surely scholarship means engaging in original research. But the work of a scholar also means stepping back from one's investigation, looking for connections, building bridges between one's theory and practice and communicating one's knowledge effectively." (p. 16)

McCracken (1983) and Barrick (1989) indicated that scholars are needed in the agricultural education discipline to provide leadership for the profession and to further the scientific studies of agricultural education processes. "A research program can be a tool for planning a career and setting goals for preeminent scholarship," (Williams, 2003, p. 4). Williams also shared that it may take a lifetime of research in a focused area to significantly impact practice. He also noted that full professors are expected to be risk-takers and leaders in the profession. He indicated that leadership may be through

scholarship in discovery, learning, and/or engagement and that success in one area frequently leads to opportunities in other areas.

Agricultural education “represents an enormously broad and flexible dimension of education” (Peterson, 1999, p. 4). Agricultural education contributes scholarship to agricultural and educational systems by linking technical areas of agriculture and the humanistic dimensions (Barrick, 1988). In higher education, research indicates that research productivity plays a major role in attaining academic success and it relates to salary, promotion and tenure, and other fringe benefits of the profession (Kotrlik, Barlett, Higgins, & Williams, 2002). These researchers also indicate that research varies widely from institution to institution depending on the emphasis placed on teaching, research and service.

Drucker (2006) indicated a need to set priorities in the search for new knowledge and he further indicated that knowledge differs contingent upon the ability and interests of people. He also noted that in universities there is a difference in quality of people, the quality of research, and priorities for new knowledge pursuit. Priorities in research and the quality of the professorate and the research has a substantial impact upon the agricultural education discipline.

Agricultural educators research vast and diverse issues confronting the American agricultural industry and there is a growing recognition that agriculturalists and public institutions need communications (Miller, Stewart, & West, 2006). “Diversity in our literature’s content, purpose, and methodology reflects the important fact that

agricultural education is a complex social phenomena, involving individuals and group perceptions and behaviors” (Boone, et al., 2000, p. 88).

Faculty members with longstanding success in research are often admired by other faculty members and students and regarded as knowledgeable about most issues in their field (Kotrlik, Barlett, Higgins, & Williams, 2002). These faculty members are viewed as more powerful educators and these individuals often serve as a frame of reference for junior faculty or others who are developing their personal research agenda (Levine, 1997). Research prestige can influence the disciplines direction.

The agricultural education scholarship is multi-disciplinary, by necessity and mission; that is, scholarship can be exhibited through teaching, research, and outreach activities (Miller & Sandman, 2000). Agricultural communications and leadership have struggled for a *home* on most university land grant campuses. With this struggle, Agricultural communications and leadership have developed strong, often vigorous connection with related disciplines (James F. Evans personal communication August 2, 2005). In that sense, collaborations with scholarship in sociology, educational psychology, education, psychology, economics, history, anthropology, linguistics, philosophy, and other fields can be seen in the research.

Scholarship is sometimes defined as teaching, research and service, the triad of expectations in the mission of many land grant institutions (Barrick, 1989). Often scholarship is the development of new or adaptation of existing knowledge. The pursuit of knowledge in any discipline is critical and the development of a research base is essential. Knowledge bases can be assessed for understandings, skills, and judgments of

faculty members (Reynolds, 1989, ix, as cited in Texas A&M University Agricultural Leadership, Education, and Communications Department, 2006, p. 1) and the data can be used to provide a current frame for the discipline (Buriak & Shinn, 1993).

Radhakrishna and Xu (1997) indicated that research journal articles and research articles in proceedings are “good indicators of the profession’s scientific activity, philosophy, and application” (p. 59). According to Knight (1984) “what a profession writes about in its journals and magazines might be considered a fairly good indicator of what is perceived as being important and the topics researched might give insight into the priorities of a profession” (p. 6). Greiman and Birkenholz (2003) completed research using faculty representing 24 land grant institutions and their research indicated that faculty authorship of research manuscripts represented two-thirds of research placement into refereed research papers and one-third into refereed journal articles.

Schulman (2000) noted that scholarship should be public, susceptible to critical review and evaluation, and assessable for exchange and use by other members of the scholarly community. Miller, Stewart, and West (2006) indicated that well-respected authors in agricultural academia agree that the discipline “must constantly analyze itself, question its purpose, and propose new directions in order for it to grow, progress, and be of use to the profession it serves” (p. 3). Well-respected professionals’ in higher education agricultural communications have provided commentaries urging colleagues to assist with discipline focus, professional cohesion, and a goal-oriented vision (Tucker, 2004; Doerfert, 2003; Whiting, 2002). Disciplinary growth, progress, and research focus are the foundations of the discipline and the profession (Miller, et al., 2006). The results

of agricultural education research should guide practitioners' work and this should set the course for further academician research (Miller, et al., 2006).

Research indicates that there is a growing interest in publishing literature that relates to agricultural education and there is a need for the literature to be synthesized (Miller, Stewart & West, 2006; Dyer, Haase–Wittler & Washburn, 2003; Radhakrishna & Xu, 1997; Buriak & Shinn, 1993; Moore, 1991; Silva–Guerrero & Sutphin, 1990). Research provides practical insights for the agricultural educator and research assists with the understanding of how the discipline works and offers direction in planning and strategy decisions (Hays, 2000).

Based on the explosion of scholarship, the *Journal of International Agricultural and Extension Education (JIAEE)* was launched in 1994 and the *Journal of Applied Communications (JAC)* in 1996 to help meet the needs of the agricultural communicators in the United States. JIAEE was still making changes in 2002 as seen in the unveiling of a new format intended to make its contents more applicable to those members of the Association for Communication Excellence (ACE) (Tucker & Boone, 2002). Furthermore, the *Journal of Leadership Education (JOLE)* appeared in 2002, to help meet the needs of leadership educators.

There is a need to advance agricultural education efforts to meet the confronting challenges of the agricultural industry. “If research and development are to lead the way, we must continually review and evaluate our efforts” (Manneback, McKenna, & Pfau, 1984). Rudd (2005) noted that “scholarship in any discipline must continue to improve to be of use to practitioners and constituents” (p. 3). Research productivity in agricultural

education is strongly encouraged in the form of publication in refereed research journals (Kotrlik, Barlett, Higgins & Williams, 2001).

An increase in publication research (Sax, Astin, Korn, & Gilmartin, 1999) brought the expansion of research outlets. Since this expansion little research can be found regarding the examination of the very essence of the agricultural education discipline. There is a need to synthesize agricultural education research identified as the premier outlets in the discipline. It is necessary to determine past research theme areas in agricultural education in order to verify where additional focus is needed.

Service

Wiedmer (1994) indicated that students, the primary clients of higher education, considered faculty service as the second most important function of faculty members. Peterson (1999) noted service as a top priority in the agricultural education discipline and that service encompasses outreach to clientele groups, partners and stakeholders.

Service is also seen as outreach in the profession of agricultural education (D'Arcy, Barrick & Garrow, 2004). Teaching and scholarship are a part of service. Service often occurs in the form of providing assistance, benefit or advantage to the institution, the students, colleagues, the department, the college, and the University as well as beyond the campus (Texas A&M University Faculty Handbook, 2006). Publications, presentations, use of research in teaching, peer evaluation, contributions to Extension, participation in educational efforts, collaborations, leadership roles and the amount of funding are factors associated with service (D'Arcy, et al., 2004).

Service often serves as a means for research dissemination (D'Arcy, et al., 2004). Service is a critical factor and influences professorates associated with agricultural education. Teaching, scholarship and service often go hand-in-hand as educators strive to strengthen themselves and the discipline (Peterson, 1999).

Funding

With crises in profits and productivity in United States corporations the 1980s brought higher education reduced federal funding and the need to bridge research connections between the business world and higher education (Slaughter & Rhoades, 1993). To deal with the funding cutbacks research universities diversified their revenue portfolios. State funding typically accounts for 30% of their monies; however, this funding rate is largely based on student enrollment numbers. At research universities federal funding accounts for a little more than 50% of their monies, local government about 9%, with the remaining funding coming from the private sector. "Excellence in professional programs is typically determined and regulated by state agencies and legislatures" (Oliver, 1988, p. 11).

With the increased need to secure funds from the private sector there has been a need for faculty members to secure funding via internal and external grants (Barrett, Banset & Gilbertson, 1995). Faculty members participate in creating funding proposals that have the potential to secure funds to meet the needs of their teaching, scholarship, and service obligations. Peterson (1999) indicated that a barrier in the agricultural education discipline was financial resources to support the development of a research

agenda. Connors (1998) identified that funding was the most critical factor affecting agricultural education programs.

Greiman and Birkenholz (2003) noted that agricultural education faculty reported an average of five funded grants totaling approximately \$377,000 for a five year period. Their research also indicated that securing funding was an important indicator in faculty research capacity. Policy makers engage in discourse and reallocate limited resources to fund initiatives (Association of Career and Technical Education, 2003 as cited in McDermott & Knobloch, 2005) that they believe will help solve the problems that are in that nations best interest. Career and technical education and agricultural education have received state and federal funds for many years and these funds have not been without scrutiny (Applegate, 2003; NRC, 1988). McDermott and Knobloch (2005) discovered that national leaders would be willing to work more closely with agricultural education professionals to assist personnel in securing funds.

The National Research Agenda: Agricultural Education and Communication 2007 – 2010 (2007) has sought to identify research priorities in the field of agricultural education. This *agenda* is the first step to identify where the profession can and should go but the need still exists to develop a literature framework to show researchers where they have been. The agenda may provide biased benchmarks due to its funding derivation. However, the agenda has the potential to allow the professoriate to align teaching, scholarship, and service goals to identify areas of futuristic funding. Funding is a critical component in agricultural education programs and educators are responsible for

identifying and securing external funding. The national research agenda has the potential to assist with these efforts.

Summary

The peer disciplines of teacher education, Extension education, agricultural communications, international agriculture, and leadership education add to the context of agricultural education. Agricultural education professors are responsible for teaching, scholarship, service and funding requirements. These influential factors contribute to the quality and quantity of research produced.

Agricultural education was identified as a discipline in 1987. Since that time there have been attempts to focus the discipline; however, research has been almost devoid of complex analyses to understand the nature of research in the discipline. Research attempts have typically focused on five main objectives: a) analyzing the dimensions of agricultural education, b) summarizing critiques of agricultural education research, c) suggesting strategies to focus the discipline (Barrick, 1989), and more recently d) summarizing prolific authors (Harder, 2006; Radhakrishna & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992), and e) summarizing works most cited (Miller, Stewart & West, 2006).

As far back as 1990 the agricultural education discipline has been encouraged to “develop an improved conceptual framework for future investigators” and “integrate existing work” (Birkenholz, Harbstreit & Law, 1990, p. 32). Peterson (1999) noted that a barrier to the agricultural education discipline was the lack of a research agenda. He indicated the need for a “thematically oriented research agenda” (p. 9).

Knowledge has been the product of agricultural education since its inception and institutions of higher education have made many important contributions toward the “knowledge economy” (Drucker, 2006, p. 271). Drucker indicated that we have a “concentration of brain power in a few large universities such as has never been seen in any other area of social life” (p. 174). The search for knowledge is increasingly entrusted to these institutions. As agricultural education embraces the knowledge economy, it is increasingly important to understand the contributions being made by individuals in the discipline.

Although there have been few specific calls from within agricultural education to examine the very essence of our discipline, numerous scholars have expounded on disciplinary typology (Baker, Shinn, & Briers, 2007; Miller, 2006; Dyer, Haase–Wittler & Washburn, 2003; Kotlik, Barlett, Higgins, Williams, 2002; Barrick, 1998; Radhakrishna & Xu, 1997; Radhakrishna, 1995; Radhakrishna & Mbaga, 1995; Shinn, 1994; Buriak & Shinn, 1993; 1989; Radhakrishna & Jackson, 1992; Radhakrishna, Eaton, Conroy, & Jackson, 1994; Williams, 1991; Silva–Guerrero & Sutphin, 1990; McKinney, 1987; Crunkilton, 1988; Warmbrod, 1987; 1986; Moss, 1986; Knight, 1984; Mannebach, McKenna, Pfau, 1984; McCracken, 1983; Mannebach, 1981; Love, 1978; Hamlin, 1966; Warmbord & Phipps, 1966). However, the review of literature failed to identify a holistic approach to examining research in the discipline. It is essential to examine critical components of agricultural education research to understand the current state of research, establish a research agenda, and take a more futuristic approach to knowledge pursuit, development and examination.

There is a need to understand where we have been in the agricultural education discipline to allow us to better understand where we are headed in the future. “There is a need to re-examine agricultural education in a future that has already happened. Has the knowledge changed along with the times?” (Baker, Shinn, & Briers, 2007, p.1). Baker, Shinn, and Briers (2007) indicated a need to examine core knowledge objects, and the collective knowledge domains for agricultural education and this need remains. Analyzing the dimensions of agricultural education and suggesting strategies to focus the discipline can have an impact on research priorities.

With the influx of research and the creation of new journals in the 1990s there has been little research to examine the current state of the agricultural education discipline. The agricultural education discipline must determine: primary and secondary research themes used, how research theme areas have varied over the past decade, determine prolifically published authors, types of research being conducted, frequently cited authors, frequently cited works, how the formation and usage of research in agricultural education research varied over the past 10 years, and determine frequencies and gaps in agricultural education research. Understanding these areas will assist the discipline to more fully focus literary contexts and further strengthen the discipline by assisting with the major influential factors affecting today’s agricultural education professionals.

CHAPTER III

METHODS AND PROCEDURES

Introduction

This chapter introduces the basic methodology used to achieve the purposes of the study, including the design of the research, procedures to select and reject research articles found in identified journals, development of a collection form and instructions for form completion, field testing to narrow and fine-tune the study's focus, collection of data, establishment of validity and reliability, and content and gap analysis.

The purpose of this study was to conduct a thorough review of research published in major research journals in agricultural education to critically examine the status of the discipline and provide a basis from which to direct future research. The primary purpose of this study was to determine primary and secondary research themes used in research published in agricultural education from 1997 to 2006. The secondary purpose was to examine the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) to determine frequencies and gaps in the research. “If research and development are to lead the way, we must continually review and evaluate our efforts” (Mannebach, McKenna, & Pfau, 1984).

Objectives of the Study

Four objectives were established to guide this study:

1. Determine premier research article outlets (research journals).
2. Describe published research, from 1997 to 2006, in each of the premier agricultural education research journals identified in objective 1:

- a. Identify primary and secondary research themes in the identified published research articles.
 - b. Identify primary and secondary research themes among research articles published by year.
 - c. Identify the most prolific authors.
 - d. Identify research methods and types.
 - e. Identify the most frequently cited authors in the premier AGED journals (as identified in objective 1).
 - f. Identify the most frequently cited referenced works.
3. Synthesize and compile the research from the premier agricultural education journals from 1997 to 2006:
 4. Determine frequencies and gaps in agricultural education research as compared to the *National Research Agenda: Agricultural Education and Communication 2007-2010* (2007).

Institutional Review Board

The policies of Texas A&M University, as well as federal regulations, require all research studies involving human subjects be reviewed and approved before investigators can begin their research. In compliance with this policy, this study received the proper surveillance and was granted permission to proceed. This research was assigned the following research project number: 2006-0491. A copy of the IRB approval form is presented as Appendix A.

Population

The field study used ninety-six individuals identified as agricultural education research authors publishing in agricultural education journals for a two year period as recognized in Delphi research led by Baker, Shinn, and Briers (2007). These individuals were a pre-selected sample used to determine the data source (research journals). The data source consisted of *ten years* of research articles accepted in the identified agricultural education research journals.

The data source population is a census of research articles published in the identified premier agricultural education journals (every unit in the population is included in the content analysis) from 1997 to 2006. A census provides the most valid discussion of a population because it includes all units.

A 10-year window was chosen because research indicates that the 1990s were a time of increase in publication research (Sax, Astin, Korn, & Gilmartin, 1999). This expansion brought about the need for additional research outlets. Since this expansion, minimal research has been conducted regarding the examination of where the agricultural education discipline has been and where the discipline is headed. Research articles identified in premier agricultural education journals were used to examine primary and secondary research themes in the discipline. These included articles published between 1997 and 2006 in the five identified premier journals: *Journal of Agricultural Education (JAE)*, *Journal of International Agricultural and Extension Education (JIAEE)*, *Journal of Extension (JOE)*, *Journal of Applied Communications*

(*JAC*), and *Journal of Leadership Education (JOLE)*. Selection of these data sources resulted in examination of 1,151 published research journal articles (Table 1).

Table 1

Total Number of Research Articles Published by Year (1997–2006) in Agricultural Education Journals (N = 1,151)

Journals	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
<i>JAE</i>	29	26	30	43	27	28	31	34	33	42	323
<i>JIAEE</i>	11	11	15	12	13	20	17	21	12	12	144
<i>JOE</i>	24	36	40	38	55	59	57	73	83	83	548
<i>JAC</i>	14	9	10	12	8	6	5	11	12	4	91
<i>JOLE</i>	0	0	0	0	0	11	5	11	6	12	45
Total	78	82	95	105	103	124	115	150	146	153	1,151

Methodology Background

Quantitative and qualitative content analyses were used to determine the degree to which primary and secondary research themes vary in each of the target populations. The study used quantitative gap analysis to understand where the agricultural education field of study is in terms of current research (primary and secondary research themes) and whether or not research meets the current needs of the discipline as outlined in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007).

Content analysis as a research method has existed for decades and the best content-analytic studies use both qualitative and quantitative operations (Weber, 1990). Content analysis as a methodology is often used in conjunction with other methods, in particular historical and ethnographic research. Content analysis can be used to give researchers insight into problems or hypotheses that can then be tested by more direct methods. Content analysis allows an unobtrusive appraisal of texts; however it is susceptible to the effects of research biases, which can affect decisions made in the collection, analysis, and interpretation of data (Kolbe & Burnett, 1991).

Content analysis has been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952; GAO, 1996; Krippendorff, 1980; Weber, 1990). Qualitative researchers define content analysis as the searching of text for recurring words or themes with the use of a coding scheme (Berg, 2001; Patton, 2002). Of course, there are numerous definitions regarding content analysis, but for this study content analysis was defined as a systematic research method that uses various types of coding for text to make inferences into the content under studying.

Content analysis enables researchers to sift through large volumes of data with relative ease in a systematic fashion (GAO, 1996). It is a useful technique used to discover and describe the focus of individual, group, institutional, and social attention (Weber, 1990). It allows inferences to be made using both quantitative and qualitative methods of data collection. "Content analysis research is motivated by the search for

techniques to infer from symbolic data that would be either too costly, no longer possible, or too obtrusive by the use of other techniques” (Krippendorf, 1980, p. 51).

Content analysis is a research technique for making replicable and valid inferences from textual data to their context. Researchers often use this technique to examine texts in a way that provides knowledge, new insights, a representation of facts, and practical guide to action (Krippendorf, 1980). Content analysis is appropriate for analyzing many types of documents, including historical documents, transcripts, and publications. Content analysis can be a powerful tool in determining authorship, examining trends and patterns in documents, and providing an empirical basis for monitoring shifts in public opinion (Stemler, 2001).

When looking at data analysis, content analysis is more than just word counts to make inferences about matters that are important. Synonyms may be used for stylistic reasons throughout a document and thus may lead the researcher to underestimate the importance of concept (Weber, 1990). Each word analyzed in a content analysis may not represent a category equally well and some words may have multiple meanings (Stemler, 2001). Also, when looking at a content analysis over time, word meanings may be different from the past as opposed to today. Words or other coding units classified together need to possess similar connotations in order for the classification to have semantic validity (Weber, 1990). Krippendorf (1980) stated that semantic validity exists when persons familiar with the language and texts examine lists of words (or other units) placed in the same category and agree that these words have similar meaning or

connotations. Key Words In Context (KWIC) was the technique used to ensure semantic validity with consistency of usage of words (Weber, 1990).

Content analysis relies on the coding and categorization of the data. “A category is a group of words with similar meaning or connotations” (Weber, 1990, p. 37).

“Categories must be mutually exclusive and exhaustive” (GAO, 1996, p. 20). Mutually exclusive categories exist when no unit falls between two data points, and each unit is represented by only one data point. The requirement of exhaustive categories is met when the data language represents all recording units without exception.

To achieve exhaustive categories and assist with semantic validity, the researcher used previous publications to develop a potential framework of primary and secondary research theme areas. Primary and secondary research themes were considered context units, which set physical limits on the kind of data the researcher was trying to record (Neuendorf, 2002). Although previous research was used as a coding guide, the researcher was aware of the possibility of additional emerging primary and secondary research theme areas surfacing throughout the research.

According to Knight (1984), effective analysis of subject matter topics researched lies in the categories used for grouping the topics under appropriate categories. Previous research regarding research themes in agricultural education guided this study (Baker, Shinn, & Briers, 2007; Miller, 2006; Miller, Stewart, & West, 2006; Dyer, Haase–Wittler & Washburn, 2003; Kotrlik, Barlett, Higgins, & Williams, 2002; Radhakrishna & Xu, 1997; Radhakrishna & Mbagi, 1995; Shinn, 1994; Frick, Kahler, & Miller, 1991; Williams, 1991; Crunkilton, 1988; Moss, 1986; Knight, 1984; Mannebach,

McKenna, & Pfau, 1984; Hamlin, 1966; Warmbord & Phipps, 1966). A list of potential primary and secondary research themes were compiled, and definitions explaining each of the coding categories were provided. Research theme areas served as context units that set physical limits on the kind of data the researcher was trying to record.

Face and content validity were maintained using previous research as a guide and a field study to focus the study. One hundred and four individuals were identified as agricultural education research authors (premier researchers) based on a Delphi study by Baker, Shinn, and Briers (2007). Eight individuals were eliminated after failed attempts to identify usable email addresses. To accomplish objective one of the study a field questionnaire was developed and administered to prolific authors with valid email addresses. These individuals were targeted in the field study and qualitative research methods were used in a form of triangulation (Gall, Borg, & Gall, 1996) to compare premier researchers' perceptions of the identified research primary and secondary research theme topics.

The field study participants were contacted via email correspondence (Appendix B) to determine premier agricultural education journals and conference proceedings and to focus identified research themes. The field questionnaire (Appendix C) was administered via email and used to collect all data for this portion of the study. To obtain the best possible response rate, Dillman's Tailored Design Method was implemented (Dillman, 2000). On August 10, 2006 the initial email to the identified prolific authors was sent. Ten days later a follow-up reminder was sent (Appendix D). A second correspondence reminder was administered approximately two-weeks after the initial

mailing (Appendix E). During the second follow-up correspondence the field questionnaire was also submitted to the participants. There were sixty-two out of ninety-four respondents consisting of a 66% response rate. Sixteen of the sixty-two field questionnaires were returned blank or partially completed and represented non-useable responses. Non-response error was controlled by the “double-dip” method (Miller & Smith, 1983). Five percent of the non-respondents were randomly sampled. Their responses were compared to respondents using summated means. T-tests indicated no significant differences between the non-respondents and respondents.

Lincoln and Guba (1985) identified why humans are the instrument of choice in qualitative research: humans are responsive to cues from the environment, they can interact with the situation, they have the ability to collect information at multiple levels simultaneously, they have the ability to perceive situations holistically, they can process data immediately, provide feedback immediately, and they can explore unexpected responses. Qualitative analysis methods derived from Lincoln and Guba were employed to analyze the qualitative portion of the content analysis.

The intent of the field study was to focus the research and provide validity to the study. Respondent feedback provided validity of the classification scheme and allowed research categories to be further compressed and definitions combined to include possibilities of the types of words seen in the categories (Appendix F). Feedback from the pilot served as a basis for developing a codebook to guide the study. The revised primary and secondary research theme list served as a frame. The frame was used to

analyze each research article in the 10-year period. The entire article was needed to record information to meet the objectives of this study.

Research has not been conducted since 1995 to determine core research journals in agricultural education (Radhakrishna) and the review of literature did not find a source indicating core conference proceedings in the discipline. Therefore, the field study sought to assess the premier researchers' opinions regarding premier research journals and proceedings in the agricultural education discipline. Researchers identified premier research journal and proceeding outlets. These data were compiled and used as a guide to focus the research. Research journals identified 40% or more of the time were included in the study except the National Association of Colleges and Teachers in Agriculture Journal (*NACTA*) (Appendix G). *NACTA* Journal was excluded since it is a broad college and teaching journal that does not focus on the peer discipline areas outlined in this study. The researcher looked for natural splits in the frequencies of identified premier research journals there was a natural split identified around a 40% frequency. The researcher excluded conference proceedings from the study. There was evident concern noted in the field study and with committee members regarding the possible over-emphasis of research theme areas if both research journal articles and conference articles were used. Minimal research has been conducted regarding research articles moving from conference proceedings to journal publications and visa versa. Therefore, in an effort to avoid possible article over-emphasis this study focused on research articles in the identified 10-year period. Field study findings regarding premier

conference proceedings in the agricultural education discipline are located in Appendix H.

In content analysis research an objective coding scheme must be applied to the notes or data (Berg, 2001). Coding levels or units were determined *a priori* and a coding frame developed. To achieve an objective coding scheme, the study employed coding instructions (Appendix I) and a coding form (Appendix K) based on information obtained from the field study. The research allowed for emergent coding. Emergent coding consists of establishing categories following a preliminary examination of data. The researcher and an assistant 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 emerging on their initial checklists via negotiations. Researchers used a consolidated checklist to independently apply coding. The researchers then checked the reliability, if it was not acceptable, 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).

To assist with the elimination of negotiations, researcher training, coding instructions (codebook), and a coding form was developed and implemented. The coding instructions consisted of a comprehensive and detailed list of instructions to assist coders. The instructions were explicit and sought to contain all of the possible problems or concerns which a coder may encounter. The code-form was developed to assist coders in answering necessary questions in the context of the study. Furthermore, a variation of

a Lasswell dictionary was developed and included in the coding instructions (Weber, 1990). The Lasswell dictionary contained definitions of the primary and secondary research themes and research methodologies sought in the content analyses. Variations or wording that may have multiple meanings were identified and discussions developed as to where the information would be coded. As trials were run and categories become mutually exclusive and exhaustive the codebook, code-form, and Lasswell dictionary were revised and researchers were notified of any changes or adjustments.

Inferring causal relationships requires the researcher to be knowledgeable regarding the time in which the content occurs, the control of identified variables in the content, knowledge of possible variation in the content, and to have control over influencing (moderator) variables, and a rationale for the presumed cause and effect relationship (Neuendorf, 2002; Weber, 1990). To accomplish this, research procedures and coding categories were established *a priori* to enable researchers making casual inferences. Emerging themes were seen in the primary and secondary research theme areas and correct qualitative procedures were followed to code and quantify emerging categories (Lincoln & Guba, 1985).

“To make valid inferences from the text, it is important that the classification procedure be reliable in the sense of being consistent: Different people should code the same way” (Weber, 1990, p. 12). Reliability problems usually grow out of ambiguity of word meanings, category definitions, or other coding rules (Weber, 1990). For this study, the development of appropriate coding schemes for the content was used and

explicit recording instructions were used (Krippendorff, 1980). These instructions allowed outside coders to be trained until reliability requirements are met.

Reliability is the extent to which a measuring procedure yields the same results on repeated trials (Neuendorf, 2002). Good measurements have reliability, validity, accuracy (the extent to which a measuring procedure is free of bias or nonrandom error) and precision (the fineness of distinction made between categories of levels of a measure) (Neuendorf, 2002).

Reliability issues (Krippendorff, 1980) are classified into three areas:

- 1) Stability – (inter-rater reliability) refers to the extent to which the results of content classification are invariant over time. Can the same coder get the same results try after try? In longitudinal studies do words have varying degrees of meaning and are these words handled appropriately to ensure reliability of coding?
- 2) Reproducibility - (inter-coder reliability – the amount of agreement or correspondence among two or more coders) the extent to which content classification produces the same results when the same text is coded by more than one coder (often occur due to cognitive differences, ambiguous coding instructions or from random recording error). Essentially this is the consistency of shared understandings (meanings) by more than one coder. Validation of the coding scheme allows one individual to use the coding scheme as a measurement tool and get similar results.

- 3) Accuracy – refers to the extent to which the classification of text corresponds to a standard or norm.

The above listed reliability issues were addressed in the study. Data were recorded by three trained coders (an agricultural communications graduate student, an agricultural education doctoral candidate, and the researcher). Coders first participate in training sessions where they discussed research articles and agreed upon the research theme areas being examined in each article as suggested by the compiled research theme frame. A codebook, with all variable measures fully explained, and a coding form were employed to assist coders (Weber, 1990). The code-form was developed to meet the objectives of the study and was employed using a digital format for ease of data collection and for future data manipulation.

Reliability (Cohen's kappa) was determined by measuring the percent of agreement between raters (add the number of cases that were coded the same way by the two raters and divide by the total number of cases) (Cohen, 1960). A reliability coefficient (the total number of the agreements divided by the total number of coding decisions) of 0.83 was achieved in the training session. Then, in an independent coding test, the reliability on each variable was determined. At each stage, the codebook and coding form was revised as needed. Inter-coder reliability coding was completed independently, with at least 10% overlap for the reliability test. Final reliability was calculated using a random sample of 5% of the analyzed articles. Reliability was assessed using Spearman's rho for each variable. Reliabilities met or exceeded the minimum standard of .70.

Entire articles were analyzed, articles were divided between the three coders, and coders documented the articles research theme areas, article authorship, research methods, cited referenced authors in the identified journals, and cited referenced works for each article. Weber (1990) posited that where possible, the entire text should be analyzed because this preserves the semantic coherence of texts. As new research themes emerged, coders participate in further training meetings to develop agreement on assignment of themes and the definition of the emergent theme (Appendix L expanded research themes and Appendix M compressed research themes). The findings were entered into the code-form which was sent via a web-database to data storage. The web-database was deposited into an Excel© spreadsheet. The Excel© spreadsheet was imported into SPSS 15.0 for data analyses.

Data were analyzed to determine frequencies of primary and secondary research theme areas, authorship, research methods, cited referenced authors in the journals of interest, and cited referenced works were reported. The results from the content analysis of the research themes were used to complete the secondary purpose of the study, which was to examine the *National Research Agenda: Agricultural Education and Communication 2007 - 2010* (2007) to determine frequencies and gaps in the research. The researcher and two external reviewers examined the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* and compared research priority areas found in the document with the research themes identified in the content analysis. Appendix N contains a list of research themes identified in the respective research priority area. Data was analyzed and frequencies of research priority areas reported.

The need of continuous improvement in agricultural education requires periodic outcomes assessments (Davis, 2002). Part of the process includes a monitoring of the relevance of current research as compared to identified relevance of research as outlined in the *National Research Agenda: Agricultural Education and Communication 2007 - 2010*. Specifically a gap analysis approach was employed in that the highest frequency of primary and secondary research theme areas and the research priorities in the National Research Agenda were contrasted. Gap analysis findings provided special empirical insights on the gaps that exist from research previously completed and research priorities identified as critical in agricultural education.

Assessing the outcomes and/or needs of higher education is no easy task, as research in this area appears to follow no standard protocol and is often conducted to a limited extent in disciplines (Evers & Gilbert, 1991). Agricultural education, with inclusion of its peer disciplines, is no exception. Professionals in agricultural education have assessed various components of research in the discipline for decades. There have also been attempts to assist the discipline with research focus and guidelines; however, minimal attempts have been made to assess where research currently lies in the discipline, and compare past and current research strategies to future research focus.

Gap analysis is not readily used as a research methodology in agricultural education; however, it is prevalent in agricultural sciences including plant and animal analyses, communications, marketing, as well as many other fields of study. Gap analysis involves the identification of gaps between the current state and the future state or the desired state of research (Fuchs, Wilcock, & Aung, 2004). The process of

identifying gaps included a deep analysis of the factors that constitute research in agricultural education. Figure 4 is a graphic representation of the gap analysis of the current state of agricultural education. The content analysis was used to assess premier research articles and this data is identified as experience-based research. The *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) was used as a benchmark. A gap analysis compared research themes from experience-based research with benchmark research themes to determine frequencies of research themes. These analyses can be used to assist with the identification of the future state of agricultural education research which will allow for suggestions for an improvement plan.

Experience-based research is more appropriate than expectations to serve as benchmark research against which research priorities are compared (Cadotte, Woodruff, & Jenkins, 1987; Woodruff, Cadotte, & Jenkins, 1983). Therefore, this study used past and current (experience-based) research and a benchmark (National Research Agenda) to assess gaps in agricultural education research and used the analysis to make recommendations for future research. Frequencies of research themes identified in the content analysis will be used to determine the frequencies and gaps in agricultural education research.

Potential gaps that relate to experience-based research and benchmark research have a significant impact on the agricultural education discipline. In general, these gaps include: a) an interaction between research currently occurring and research

expectations, or the identified research focus, in the future and b) the impacts that gaps can have on the future of the discipline.

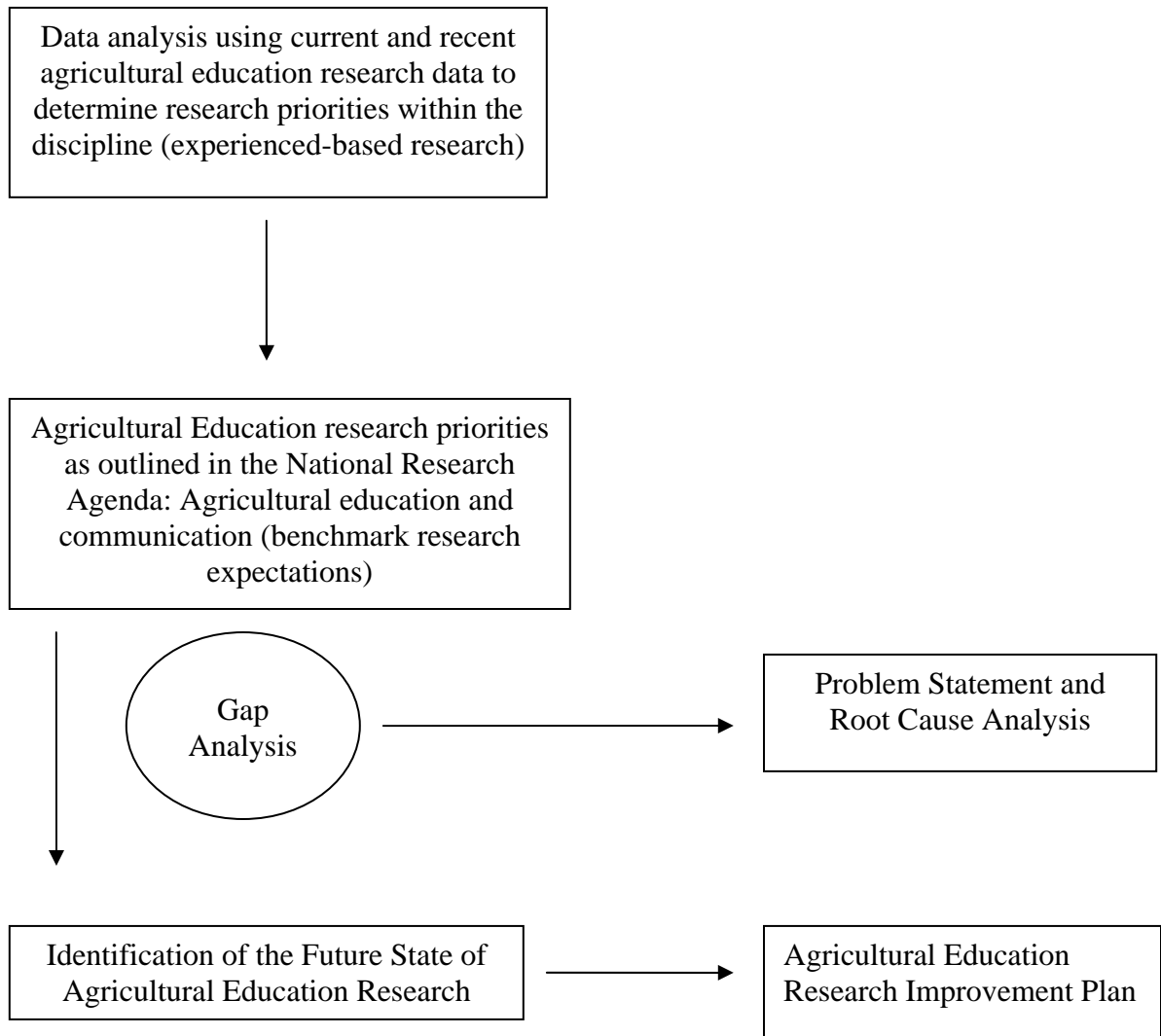


Figure 4. Analysis of the current state of research in agricultural education.

Applying a disconfirmation paradigm to the evaluation of research encountered suggests that researchers in the discipline will compare his or her research priorities with the priorities as outlined in the discipline (Brown & Swartz, 1989). These expectations may be based, in part or in total, on past research experiences, including those gathered vicariously. Understanding of the evaluation of research in agricultural education can be expressed analytically as:

$$O_i - X_i = G_i$$

where:

O_i = evaluation outcome of research topic i

X_i = expectations of research (National Research Agenda) topic i

G_i = gaps in research topic i

Data was analyzed on a macro exploratory level to determine frequencies and gaps in research. Primary and secondary research themes in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) (benchmark) and the premier research journals from 1997 to 2006 (experience-based) were analyzed to determine frequencies in research theme areas. Research priorities were compared frequencies and gaps reported.

Reliability analysis was preformed to refine factors in the benchmark and experience-based research topics. Frequency scores were obtained for each of the research theme areas. Individual-topic analysis determined whether identified research topics existed.

Frequencies and gaps were computed by compiling identified primary and secondary research theme areas identified in experience-based and benchmark through the factor analyses. Frequencies and gaps were reported in comparison to past and present research. Past research (content analysis) was utilized to determine if future research (National Research Agenda) initiatives are plausible.

Data Collection

Content analysis methodologies, based on the clear guidelines of Neuendorf were employed (2002). Neuendorf's content analysis research process can be seen below (2002, p. 50):

- 1) Theory and Rationale – what content will be examined and why? Used a literature review. Are there certain theories or perspectives that indicate that this particular message content is important to the study? Will you be using an integrative model, linking content analysis with other data to show relationships with source or receive characteristics? Do you have research questions? Hypotheses?
- 2) Conceptualization decisions – What variables will be used in the study, and how do you define them conceptually?
- 3) Operationalization measures – (is the process of developing measures). Measures should match the conceptualizations (internal validity). What unit(s) of data collection will you use? (coding scheme) Are the variables measured well? (at a high level of measurement, with categories that are exhaustive and mutually exclusive = only one appropriate code for each and

every unit coded) An a priori coding scheme describing all measures was created. Both face and content validity was assessed at this point.

- 4) Human coding or computer coding? Human develop coding schemes are necessary for this research. A codebook (with all variable measures fully explained) and a coding form was developed to assist coders (Weber, 1990). Design and implement a coding scheme: 1) recording units (primary and secondary research themes) were defined, 2) categories were mutually exclusive, 3) test coding on sample test, 4) assessed accuracy and/or reliability, 5) revised the coding rules, 6) returned to step 3, 7) coded all text, and 8) assessed reliability and/or accuracy.
- 5) Sampling – Is a census of the content possible? (if yes go to step 6). How will you randomly sample a subset of the content? This could be by time period, by issue, by page, by channel, etc.
- 6) Training and initial reliability – During a training session in which coders work together, the researcher discovered the coders could agree on the coding variables. Then, in an independent coding test, the researcher noted the reliability on each variable. At each stage, the codebook/coding form was revised as needed.
- 7) Coding – The study used multiple coders (a minimum of two coders) in order to establish intercoder reliability. Coding was done independently, with at least 10% overlap for the reliability test.

- 8) Final reliability – reliability was calculated (percent agreement or Pearson's r) for each variable.
- 9) Tabulation and reporting – Report results. Figures and statistics for one variable (univariate) or variables could be cross tabulated in different ways (bivariate or multivariate). Over-time trends could be reported. Relationships between content analysis variables and other measures were used to establish criterion and construct validity.

To achieve objective 1, the code-form was e-mailed to prolific agricultural educator authors to determine premier research journal article outlets. The responses were collected using email and two systematic follow-ups were employed for non-respondents. An accessible population of ninety-four individuals was identified as prolific researcher authors in agricultural education (Baker, Shinn, & Briers, 2007). These individuals were targeted in the field study and qualitative research methods were used in a form of triangulation (Gall, Borg, & Gall, 1996) to compare premier researchers' perceptions of the identified research primary and secondary research theme topics. A 66% response rate (62 out of 94 respondents) was achieved. Respondent feedback provided validity of the classification scheme and allowed research categories to be further compressed and definitions combined to include possibilities of the types of words seen in the categories (Appendix J).

To achieve objectives 2 and 3, the research articles in the premier agricultural education research journals for the 1997 to 2006 time period were identified using electronic and library data searches. Table of contents for each of the research journals in

the identified ten-year window were used to ensure that all research articles were analyzed. Each research article was coded and data was entered into the code-form. The articles were copied into a word processing program (Microsoft Word or Adobe Acrobat) for formatting and printing. Items identified as editorials, commentaries, book reviews, or without research methodologies were excluded from the study because, by definition, editorials, commentaries, and book reviews do not represent research findings. Upon completion of the data collection, the researcher uploaded the data from the server and imported it into a spreadsheet program. Data were collected in the winter of 2006 and spring of 2007. Data were compiled and compared to complete objective 3.

To achieve objectives 4, the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) was coded and each research priority was analyzed to determine the research theme in each research priority. The researcher used a modified version of the code-form to accomplish the task. Upon completion of the data collection, the researcher uploaded the data from the server and imported it into a spreadsheet program for analysis.

Data Analysis

Data were analyzed using the SPSS© for Windows statistical package version 15.0. The content was described using descriptive statistics. Frequencies were reported for each objective and used to explain the variance between previous (experience-based) research and identified research priority areas (benchmark research). Emerging themes were analyzed using Lincoln and Guba (1985) procedures. Each emerging theme was

coded with a descriptive number for tracking. The data were compiled using the raw data for each research theme.

Summary of Methodology

Shapiro and Markoff (1997) assert that content analysis itself is only valid and meaningful to the extent that the results are related to other measures. From this perspective, an exploration of the relationship between the content analysis and gap analysis measures will enhance the validity of this study's findings. Content can be seen as the dependent variable of other social processes or as an independent variable influencing those other processes.

Past and recent research in higher education has shown that research productivity plays a major role in attaining success in academia. Research success is delineated into promotion and tenure, salary and fringe benefits of the profession (Kotlik, Bartlett, Higgins, & Williams, 2002). Radhakrishna and Xu (1997) indicated that research journal articles are "good indicators of the profession's scientific activity, philosophy, and application" (p. 59). According to Knight (1984), "what a profession writes about in its journals and magazines might be considered a fairly good indicator of what is perceived as being important and the topics researched might give insight into the priorities of a profession" (p. 6). Crunkilton's (1988) research identified the need for agricultural education to know where it can and should go with research in its pursuit to develop empirical knowledge. Therefore, it is important to assess research journal articles in agricultural education to determine past and current research theme areas.

The interactive analyses of content and gap analysis allowed the researcher to use the agricultural education discipline as a frame to identify indicators of the profession's scientific activity, philosophy, and application and compare those indicators to research priorities identified by leaders in the field (National Research Agenda). These analyses assisted the researcher in determining where research has been, the potential gaps in research, and recommendations for future research.

CHAPTER IV

RESULTS AND FINDINGS

Introduction

The intent of this study was to conduct a thorough review of research published in major research journals in agricultural education, with an emphasis on the peer discipline areas, to critically examine the status of the discipline and provide a basis to direct future research. The primary purpose of this study was to determine primary and secondary research themes demonstrated in agricultural education research from 1997 to 2006. The secondary purpose was to examine the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) to determine frequencies and gaps in the research. “If research and development are to lead the way, we must continually review and evaluate our efforts” (Manneback, McKenna, & Pfau, 1984, p. 1).

Objectives of the Study

Four objectives were established to guide this study:

1. Determine premier research article outlets (research journals).
2. Describe published research, from 1997 to 2006, in each of the premier agricultural education research journals identified in objective 1:
 - a. Identify primary and secondary research themes in the identified published research articles.
 - b. Identify primary and secondary research themes among research articles published by year.

- c. Identify the most prolific authors.
 - d. Identify research methods and types.
 - e. Identify the most frequently cited authors in the premier AGED journals (as identified in objective 1).
 - f. Identify the most frequently cited referenced works.
3. Synthesize and compile the research from the premier agricultural education journals from 1997 to 2006:
 4. Determine frequencies and gaps in agricultural education research as compared to the *National Research Agenda: Agricultural Education and Communication 2007-2010* (2007).

Field Study

A field study was utilized to focus the research and consisted of ninety-six individuals identified as prolific authors in the agricultural education field as identified by Baker, Shinn, and Briers (2007). These individuals were a pre-selected sample and were used to determine the data source (research journals) for the study. The field study assessed the prolific agricultural education researchers' opinions regarding premier research journals and conference proceeding outlets in the discipline. The definition of "premier" was not given to respondents. Therefore, respondents used their personal opinion regarding premier to identify journals in agricultural education. Those involved in the field test were also used to consolidate and expand the research theme areas identified in previous research and add validity to the study. The prolific authors in the study identified premier research journal and proceeding outlets for the discipline.

Respondents indicated that the *Journal of Agricultural Education (JAE)* (93%) was the premier journal in the agricultural education discipline. The *Journal of International Agricultural & Extension Education (JIAEE)* was identified as the second premier journal (67%) in the discipline. The *Journal of Extension (JOE)* was identified as the third premier journal (63%). The fourth premier journal identified was the *North American Colleges and Teachers of Agriculture (NACTA) Journal* (48%). *Journal of Applied Communication (JAC)* and the *Journal of Leadership Education (JOLE)* were identified as the fifth and sixth most premier journals in AGED.

Respondents identified twenty-one journals as premier research outlets in agricultural education. Respondents identified fourteen conferences as premier research outlets in the discipline. The journals identified 40% or more, as premier agricultural education journals, by the respondents were utilized in this study. The researcher looked for a natural split in the frequencies of premier research journals. The natural split existed at a frequency of 40%.

Respondents indicated that the *National Agricultural Education Conference (NAERC)* was the premier conference proceeding outlet with agricultural education (87%). The *Association for International Agricultural and Extension Education (AIAEE)* was identified as the second most premier conference proceeding (61%). The *Association for Communication Excellence (ACE) Conference* was identified as the third most premier AGED proceedings (38%). The *Southern Agricultural Education Research Conference (S-AAAE)* was the fourth most premier proceeding (33%). The *Association of Leadership Education (ALE)* and the *North American Colleges and Teachers of*

Agriculture (NACTA) Conferences were fifth premier conference proceedings (30%). The *Western Agricultural Education Research Conference (W-AAAE)* was identified as the sixth premier conference outlet (26%). The *North Central Agricultural Education Research Conference (NC-AAAE)* was the seventh premier conference outlet (24%) The *Southern Association of Agricultural Scientists - Agricultural Communications (SAAS-AgComm)* was identified as the eight premier conference proceeding outlet in AGED (13%).

These data were used as a guide to focus the research. Research journals identified 40% or more were included in the study except the National Association of Colleges and Teachers in Agriculture (*NACTA*) Journal. *NACTA* Journal was excluded from the study due to its broad college and teaching scope. Also, the journal does not have a distinct focus on the peer discipline areas outlined in this study.

The researcher excluded conference proceedings from the study. There was evident concern noted in the field study and with committee members regarding the possible over-emphasis of research theme areas. Minimal research has been conducted regarding research articles moving from conference proceedings to journal publications and visa versa. Therefore, in an effort to avoid possible article over-emphasis this study focused on research articles published in the five premier AGED journals from 1997 to 2006.

The field study respondents were utilized to develop an objective coding scheme in the content analysis. Respondents participated in additions, deletions, and compressions of the existing research theme areas. These research themes were utilized

as the coding levels or units used to guide the content analysis of the study. However, in the content analysis portion emerging research themes were noted (Lincoln and Guba, 1985).

The data source consisted of ten years of research articles published in the identified agricultural education research journals. Research articles with research methodologies, from 1997 to 2006, were identified and analyzed. The tables of contents for each of the research journals were used to ensure all research articles were analyzed. There were 323 articles analyzed in *Journal of Agricultural Education*; 144 articles in *Journal of International Agricultural and Extension Education*; 548 in *Journal of Extension*; 91 in *Journal of Applied Communications*; and 45 in *Journal of Leadership Education*. A total of 1,151 articles were analyzed in the content analysis.

Journal of Agricultural Education

The *Journal of Agricultural Education (JAE)* was identified in the field study as being the premier agricultural education research journal. Ninety-three percent of respondents indicated that the *JAE* journal was representative of the agricultural education discipline. All articles in the *Journal of Agricultural Education* from 1997 to 2006 were analyzed in the content analysis. There were a total of 323 articles in the 10-year period.

Primary and Secondary Research Themes

Primary research themes identified in the *Journal of Agricultural Education* are represented in Table 2. There were 39 primary research theme areas identified in *JAE* in the 10-year content analysis. The most frequently identified primary research theme was

teacher preparation and competence (10.2%). The second most frequent primary research theme was needs assessment, identified in 9.0% of the *JAE* research articles. Perceptions and attitudes assessment was identified as the third most frequently used primary research theme (6.5%). Food, agriculture, natural resources, health, and family was the fourth most frequently identified primary research theme (6.2%). The fifth most frequent primary research theme was research (methods and models), identified in 5.3% of the *JAE* research articles. Primary research theme areas identified in *JAE* research articles 3.7% or less are identified in the table below.

Table 2

Primary Research Themes Identified in the Journal of Agricultural Education 1997–2006 (N = 323; 39 primary research themes)

Research Theme	<i>f</i>	<i>P</i>
Teacher Preparation & Competence	33	10.2
Needs Assessment	29	9.0
Perceptions & Attitudes Assessment	21	6.5
Food, Agriculture, Natural Resources, Health, & Family	20	6.2
Research (methods and models)	17	5.3
Academic Programs	12	3.7
Critical Thinking	12	3.7
Distance Education	12	3.7
Evaluation	12	3.7
Instructional & Program Delivery Approaches	12	3.7
Processes, Principles, & Styles of Learning	12	3.7
Youth Leadership & Development	12	3.7
Appropriateness of Education	10	3.1
Leadership Management	10	3.1
Institutional Organization and Institutionalization	8	2.5
Curriculum & Program Development	7	2.2
Professional Development	7	2.2
Service & Experiential Learning	7	2.2
Diversity (culture, ethnicity, gender)	6	1.9

Table 2 (continued)

Research Theme	<i>f</i>	<i>P</i>
Knowledge Competencies & Development	6	1.9
Leadership Development	6	1.9
Volunteer Development & Leadership	6	1.9
Career Development & Assessment	5	1.5
Leadership Education	5	1.5
Agriculture Literacy	4	1.2
Communication Management	4	1.2
Formal & Informal Teaching Approaches	4	1.2
Skill Development & Competencies	4	1.2
Communication Technology	3	0.9
Policy Issues	3	0.9
Communications of Scholarship	2	0.6
Globalization & Internationalization	2	0.6
Information Sources & Technology	2	0.6
Organizational Development & Leadership	2	0.6
Writing	2	0.6
Diffusion of Innovations	1	0.3
Marketing & Promotion	1	0.3
Media Relations	1	0.3
Quality of Life & Life Skills	1	0.3

Secondary research themes identified in the *Journal of Agricultural Education* are represented in Table 3. There were 37 secondary research theme areas identified in *JAE* during the 10-year analysis. The most frequently identified secondary research theme was teacher preparation and competence (11.8%). The second most frequent secondary research theme was food, agriculture, natural resources, health, and family, identified in 6.5% of the research articles. Curriculum and program development was the third most frequently identified secondary research theme (6.2%). Distance education and evaluation were identified as the secondary research theme in 5.6% of the *JAE*

articles. There were three secondary research theme areas identified as the fifth most frequently identified secondary research area (5.3%) of the research articles. The secondary research theme areas were: formal and informal teaching approaches; institutional organization and institutionalization; and youth leadership and development. Secondary research theme areas identified in *JAE* research articles 5.0% or less are identified in the table below.

Table 3

Secondary Research Themes Identified in the Journal of Agricultural Education 1997–2006 (N = 323, 37 secondary research themes)

Research Theme	<i>f</i>	<i>P</i>
Teacher Preparation & Competence	38	11.8
Food, Agriculture, Natural Resources, Health, & Family	21	6.5
Curriculum & Program Development	20	6.2
Distance Education	18	5.6
Evaluation	18	5.6
Formal & Informal Teaching Approaches	17	5.3
Institutional Organization & Institutionalization	17	5.3
Youth Leadership & Development	17	5.3
Instructional & Program Delivery Approaches	16	5.0
Appropriateness of Education	15	4.6
Academic Programs	12	3.7
Processes, Principles, & Styles of Learning	12	3.7
Diversity (culture, ethnicity, gender)	9	2.8
Perceptions & Attitudes Assessment	9	2.8
Professional Development	9	2.8
Needs Assessment	8	2.5
Leadership Management	7	2.2
Research (methods and models)	6	1.9
Communications of Scholarship	5	1.5
Leadership Education	5	1.5
Volunteer Development & Leadership	5	1.5
Career Development & Assessment	4	1.2
Critical Thinking	4	1.2

Table 3 (continued)

Research Theme	<i>f</i>	<i>P</i>
Knowledge Competencies & Development	4	1.2
Leadership Development	4	1.2
Quality of Life & Life Skills	4	1.2
Skills, Knowledge, & Competencies	4	1.2
Community Development & Leadership	3	0.9
Accountability	2	0.6
Information Sources & Technology	2	0.6
Media Relations	2	0.6
Collaborations, Partnerships, & Coalitions	1	0.3
Consumer/Audience Response & Analysis	1	0.3
Globalization & Internationalization	1	0.3
Marketing & Promotion	1	0.3
Policy Issues	1	0.3
Service & Experiential Learning	1	0.3

Frequently Used Primary and Secondary Research Themes by Year

Table 4 outlines the frequently used primary research themes identified in the *Journal of Agricultural Education* by year. In 1997, needs assessment was the most frequently identified primary research theme, 20.7% (6 out of 29 articles). In 1998, the most used primary research theme was needs assessment, 15.4% (4 out of 26 articles). In 1999, needs assessment was the most frequently used primary research theme at 23.3% (7 out of 30 articles). In 2000, the most frequent primary research theme was food, agriculture, natural resources, health, and family, 14.0% (6 out of 43 articles). In 2001, the most frequent primary research theme was perceptions and attitudes assessment used 14.8% (4 out of 27 articles). In 2002, the most frequently used primary research themes was teacher preparation and competence used 10.7% (3 out of 28 articles). In 2003, the

most frequent primary research theme was teacher preparation and competence, 12.9% (4 out of 31 articles). In 2004, teacher preparation and competence was the primary research theme identified 8.8%, critical thinking, food, agriculture, natural resources, health, and family, and teacher preparation and competence (4 out of 34 articles). In 2005, the most used primary research theme was teacher preparation and competence, 18.2% (6 out of 33 articles). In 2006, teacher preparation and competence was the most frequently identified primary research theme, 23.8% (10 out of 42 articles).

Table 4

Most Identified Primary Research Themes in the Journal of Agricultural Education by Year (N = 323)

Year	Primary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Needs Assessment	29	6	20.7
1998	Needs Assessment	26	4	15.4
1999	Needs Assessment	30	7	23.3
2000	Food, Agriculture, Natural Resources, Health, and Family	43	5	11.6
2001	Perceptions and Attitudes Assessment	27	4	14.8
2002	Teacher Preparation and Competence	28	3	10.7
2003	Teacher Preparation and Competence	31	4	12.9
2004	Teacher Preparation and Competence	34	4	11.8
2005	Teacher Preparation and Competence	33	6	18.2
2006	Teacher Preparation and Competence	42	10	23.8

Table 5 outlines the frequently used secondary research themes identified in the *Journal of Agricultural Education* by year. In 1997, youth leadership and development was the most frequently used secondary research theme, 13.8% (4 out of 29 articles). In

1998, there were four secondary research themes, identified 11.5%, appropriateness of education, distance education, diversity (ethnicity, gender, culture), and evaluation (3 out of 26 articles). In 1999, the most frequently identified secondary research theme was perceptions and attitudes assessment, 13.3% (4 out of 30 articles). In 2000, the most frequently used secondary research theme was teacher preparation and competence used 18.6% (8 out of 43 articles). In 2001, there were two secondary research theme areas identified, food, agriculture, natural resources, health, and family and institutional organization and institutionalization 11.1% (3 out of 27 articles). In 2002, teacher preparation and competence was the most frequently identified secondary research theme, 14.3% (4 out of 28 articles). In 2003, the most frequent secondary research theme was teacher preparation and competence, 16.1% (5 out of 31 articles). In 2004, institutional organization and institutionalization was the most frequent secondary research themes, 11.8% (4 out of 34 articles). In 2005, there were three secondary research themes identified as the most frequently used, they are distance education, institutional organization and institutionalization, and teacher preparation and competence, 12.1% (4 out of 33 articles). In 2006, teacher preparation and competence was the most frequently identified secondary research theme areas, 21.4% (9 out of 42 articles).

Table 5

Most Identified Secondary Research Themes in the Journal of Agricultural Education by Year (N = 323)

Year	Secondary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Youth Leadership and Development	29	4	13.8
1998	Appropriateness of Education			
	Distance Education			
	Diversity (ethnicity, gender, culture)			
	Evaluation	26	3	11.5
1999	Perceptions and Attitudes Assessment	30	4	13.3
2000	Teacher Preparation and Competence	43	8	18.6
2001	Food, Agriculture, Natural Resources, Health, and Family			
	Institutional Organization and Institutionalization	27	3	11.1
2002	Teacher Preparation and Competence	28	4	14.3
2003	Teacher Preparation and Competence	31	5	16.1
2004	Institutional Organization and Institutionalization	34	4	11.8
2005	Distance Education			
	Institutional Organization and Institutionalization			
	Teacher Preparation and Competence	33	4	12.1
2006	Teacher Preparation and Competence	42	9	21.4

Prolific Authorship

The prolific authors identified in the *Journal of Agricultural Education*, 0.5% or more of the total authors and 1.5% or total articles, are identified in Table 6. There were 751 *JAE* authors in the 323 analyzed articles. James Dyer was the most prolific author in the journal, authoring or co-authoring 29 of the 323 articles (9.0%) between 1997 and 2006. Dyer was the most prolific author of all *JAE* authors cited in the 10-year period (29 out of 751 authors). Greg Miller was the second most prolific author in *JAE* authoring or co-authoring 5.9% of the total articles. James Lindner and Rick Rudd were

the third most prolific authors, authoring or co-authoring 3.7% of the total published articles. David Williams authored or co-authored 3.4% of the articles. The fifth most prolific author was Grady Roberts (3.1%). Additional prolific *JAE* authors are identified in the following table.

Table 6

Prolific Authorship in the Journal of Agricultural Education 1997 – 2006 (N of Authors = 751; N of Total Articles = 323)

<i>JAE</i> Author	<i>f</i>	<i>P</i> of Authors	<i>P</i> of Total Articles
Dyer, James E.	29	3.9	9.0
Miller, Greg	19	2.5	5.9
Lindner, James R.	12	1.6	3.7
Rudd, Rick D.	12	1.6	3.7
Williams, David L.	11	1.5	3.4
Roberts, T. Grady	10	1.3	3.1
Ball, Anna L.	9	1.2	2.8
Balschweid, Mark A.	9	1.2	2.8
Edwards, M. Craig	9	1.2	2.8
Garton, Bryan L.	9	1.2	2.8
Thompson, Gregory W.	9	1.2	2.8
Briers, Gary E.	8	1.1	2.5
Knobloch, Neil A.	8	1.1	2.5
Johnson, Donald M.	8	1.1	2.5
Murphy, Tim H.	8	1.1	2.5
Osborne, Edward W.	8	1.1	2.5
Wingenbach, Gary J.	8	1.1	2.5
Conroy, Carol A.	7	0.9	2.2
Dooley, Kim E.	7	0.9	2.2
Kelsey, Kathleen D.	7	0.9	2.2
Myers, Brian E.	7	0.9	2.2
Talbert, B. Allen	7	0.9	2.2
Trexler, Cary J.	7	0.9	2.2
Connors, James J.	6	0.8	1.9
Cano, Jamie	6	0.8	1.9
Gamon, Julia A.	6	0.8	1.9
Gartin, Stacy A.	6	0.8	1.9

Table 6 (continued)

<i>JAE</i> Author	<i>f</i>	<i>P</i> of Authors	<i>P</i> of Total Articles
Shih, Ching-Chun	6	0.8	1.9
Torres, Robert M.	6	0.8	1.9
Baker, Matt	5	0.7	1.5
Breja, Lisa M.	5	0.7	1.5
Boyd, Barry L.	5	0.7	1.5
Haygood, Jacqui D.	5	0.7	1.5
Joerger, Richard M.	5	0.7	1.5
Kotrlik, Joe W.	5	0.7	1.5
Lawrence, Layle D.	5	0.7	1.5
Martin, Robert A.	5	0.7	1.5
Miller, W. Wade	5	0.7	1.5
Park, Travis D.	5	0.7	1.5
Pilcher, Carol L.	5	0.7	1.5
Wardlow, George W.	5	0.7	1.5
Andreasen, Randall J.	4	0.5	1.5
Bowen, Blannie E.	4	0.5	1.5
Camp, William G.	4	0.5	1.5
Culp, Ken, III	4	0.5	1.5
Dormody, Thomas J.	4	0.5	1.5
Fritz, Carrie A.	4	0.5	1.5
Moore, Gary E.	4	0.5	1.5
Moore, Lori L.	4	0.5	1.5
Seevers, Brenda S.	4	0.5	1.5
Townsend, Christine D.	4	0.5	1.5
Whittington, M. Susie	4	0.5	1.5
Wilson, Elizabeth B.	4	0.5	1.5

Research Methods

Research methods utilized in the *Journal of Agricultural Education* are identified in Table 7. Quantitative research methods were the most common (80.5%), followed by qualitative (11.1%), and least frequently used research methods were mixed (8.4%).

Table 7

Research Methods Used in the Journal of Agricultural Education 1997 – 2006 (N = 323)

Method	<i>f</i>	<i>P</i>
Quantitative	260	80.5
Qualitative	36	11.1
Mixed Methods	27	8.4

Research method types used in the 323 articles published in the *Journal of Agricultural Education* are outlined in Table 8. Survey methods were the most frequent research method types used (45.5%). Correlational research was utilized in 10.5% of the published research. The third most common research type was experimental research identified in 8.7% of the *JAE* articles. Historical research comprised 7.7% of the *JAE* studies. Delphi methods were identified in 5.9% of the research. Ex Post Facto research methods were identified in 12 of the 323 articles (3.7%). Additional research method types utilized in *JAE* research articles less than 3% are described in the table below.

Table 8

Research Method Types Used in the Journal of Agricultural Education 1997 – 2006 (N = 323)

Method Type	<i>f</i>	<i>P</i>
Survey	147	45.5
Correlation	34	10.5
Experimental	28	8.7
Historical	25	7.7
Delphi	19	5.9
Ex Post Facto	12	3.7
Case Study	9	2.8
Content Analysis	9	2.8
Interviews	9	2.8
Evaluation	8	2.5
Survey with Open-Ended Questions	7	2.2
Focus Groups	3	0.9
Interviews and Focus Groups	3	0.9
Observations	2	0.6
Survey, Interviews, and Focus Groups	2	0.6
Evaluation and Case Study	1	0.3
Evaluation and Open-Ended Questions	1	0.3
Holistic	1	0.3
Interviews and Document Analysis	1	0.3
Open-Ended Questions/Reflections	1	0.3
Survey and Focus Groups	1	0.3

Cited Referenced Authors from the Peer Discipline Areas of AGED

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the *Journal of Leadership Education* were identified in the field study as premier research journal outlets in agricultural education. Each of these journals supports the broad

contexts of the peer discipline areas in agricultural education. To better understand the scope of the discipline citing its own works, a content analysis was utilized to determine the cited referenced works in the *Journal of Agricultural Education*.

Journal of Agricultural Education

There were 808 cited referenced works from previous publications in the *Journal of Agricultural Education (JAE)* represented in the *Journal of Agricultural Education*. Dyer and Osborne (1996) were the most frequently cited referenced *Journal of Agricultural Education* authors in the 10-year analysis of *JAE*. Their article was cited in more than 2% of the referenced *JAE* articles. Lindner, Murphy, and Briers (2001) were the second most frequently cited referenced *JAE* authors, 2.0%. The third most frequently cited referenced *JAE* authors were Torres and Cano (1995) being cited in the reference section 1.6%. A list of frequently cited referenced *JAE* authors being cited 0.5% or more in the *Journal of Agricultural Education*, are identified in Table 9.

Table 9

Frequently Cited Referenced Journal of Agricultural Education Authors in the Journal of Agricultural Education 1997 – 2006 (N = 808)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Dyer, J. E., & Osborne, E. W. (1996)	17	2.1
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	16	2.0
Torres, R. M., & Cano, J. (1995)	13	1.6
Buriak, P., & Shinn, G. (1989)	11	1.4
Cano, J., & Garton, B. L. (1994)	11	1.4
Roegge, C. A., & Russell, E. B. (1990)	11	1.4
Mundt, J. (1991)	10	1.2
Talbert, B. A., Camp, W. G., & Heath-Camp, B. (1994)	10	1.2
Mundt, J. P. Connors, J. J. (1999)	9	1.1

Table 9 (continued)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Murphy, T. H., & Terry, H. R., Jr. (1998)	9	1.1
Williams, D. L. (1991)	9	1.1
Cano, J. (1999)	8	1.0
Connors, J. J., & Elliot, J. (1994)	8	1.0
Dyer, J. E., Lacey, R., & Osborne, E. W. (1996)	8	1.0
Miller, G. (1995)	8	1.0
Whittington, M. S. (1995)	8	1.0
Cano, J., Garton, B. L., & Raven, M. R. (1992)	7	0.9
Hoover, T. S., & Scanlon, D. C. (1991)	7	0.9
Johnson, D. M. (1996)	7	0.9
McLean, R. C., & Camp, W. C. (2000)	7	0.9
Balschweid, M. A., Thompson, G. W., & Cole, R. L. (2000)	6	0.7
Born K. A., & Miller, G. (1999)	6	0.7
Edwards, M. C., & Briers, G. E. (2001)	6	0.7
Garton, B. L., & Chung, N. (1996)	6	0.7
Humphrey, J. K., Stewart, B. R., & Linhardt, R. E. (1994)	6	0.7
Marrison, D. L. & Frick, M. J. (1994)	6	0.7
Newman, M. E., & Johnson, D. M. (1993)	6	0.7
Cano, J., & Miller, G. (1992)	5	0.6
Conroy, C. A. (2000)	5	0.6
Dyer, J. E., & Osborne, E. W. (1995)	5	0.6
Garton, B. L., & Chung, N. (1997)	5	0.6
Norris, R. J., Larke, A., Jr., & Briers, G. E. (1990)	5	0.6
Schumacher, L. G., & Johnson, D. M. (1990)	5	0.6
Waters, R. G., & Haskell, L. J. (1989)	5	0.6
Whittington, M. S., Stup, R. E., Bish, L., & Allen, E. (1997)	5	0.6
Barrick, R. K. (1993)	4	0.5
Boyd, B. L., & Murphrey, T. P. (2001)	4	0.5
Chizari, M., & Taylor, W. N. (1991)	4	0.5
Clason, D. L., & Dormody, T. J. (1994).	4	0.5
Day, T. M., Raven, M. R., & Newman, M. E. (1998)	4	0.5
Deeds, J. P., Flowers, J., & Arrington, L. R. (1991)	4	0.5
Dormody, T. J., & Seevers, B. S. (1994)	4	0.5
Edwards, M. C., & Briers, G. E. (1999)	4	0.5
Findley, H. J. (1992)	4	0.5
Fletcher, W. E., & Deeds, J. P. (1994)	4	0.5

Table 9 (continued)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Frick, M., Birkenholz, R., & Machtmes, K. (1995)	4	0.5
Frick, M., Birkenholz, R., Gardner, H., & Machtmes, K. (1995)	4	0.5
Garton, B. L., Spain, J. M., Lamberson, W. R., & Spiers, D. E. (1999)	4	0.5
Harlin, J. F., Edwards, M. C., & Briers, G. E. (2002)	4	0.5
Hillison, J. (1996)	4	0.5
Joerger, R. M., & Boettcher, G. (2000)	4	0.5
Mabie, R., & Baker, M. (1996)	4	0.5
Marshall, T., Herring, D., & Briers, G. (1992)	4	0.5
McCormick, D. F., & Whittington, M. S. (2000)	4	0.5
Miller, G., & Honeyman, M. (1993)	4	0.5
Miller, G., & Shih, C. (1999)	4	0.5
Rudd, R. D., & Hillison, J. H. (1995)	4	0.5
Rudd, R., Baker, M., & Hoover, T. (2000)	4	0.5
Shelley–Tolbert, C. A., Conroy, C. A., & Dailey, A. L. (2000)	4	0.5
Steele, R. (1997)	4	0.5
Thompson, G. (1998)	4	0.5
Thompson, G. W., & Balschweid, M. M. (1999)	4	0.5
Thompson, J. C., & Russell, E. B. (1993)	4	0.5
Turner, J., & Herren, R. V. (1997)	4	0.5
Whittington, M. S., & Raven, M. R. (1995)	4	0.5

Journal of International Agricultural and Extension Education

In the *Journal of Agricultural Education*, there were eleven cited references made to the *Journal of International Agricultural and Extension Education (JIAEE)* during the 10-year period. Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994) and Chizari, M., Lindner, J. R., & Bashardoost, R. (1997) were cited, *JIAEE* authors,

referenced three times (27.3%) in *JAE*. The remaining five cited referenced *JIAEE* authors in *JAE* were each referenced once.

Journal of Extension

There were 136 cited referenced works from the *Journal of Extension (JOE)* represented in the *Journal of Agricultural Education*, during the 10-year period. Miller and Smith (1983) were the most frequently cited referenced *Journal of Extension* authors in *JAE* during the 10-year analysis. The article was cited in slightly more than 33% of the referenced *JAE* articles. Russell (1993) was the second most frequently cited referenced *JOE* author (4.4%). The third most frequently cited referenced *JOE* author was Penrod (1991), cited in the referenced section 3.7%. Table 10 contains a list of frequently cited referenced *Journal of Extension* authors cited 1.5% or more, in the *Journal of Agricultural Education*, during the 10-year content analysis.

Table 10

Frequently Cited Referenced Journal of Extension Authors in the Journal of Agricultural Education 1997 – 2006 (N = 136)

<i>JOE Author</i>	<i>f</i>	<i>P</i>
Miller, L., & Smith, K. (1983)	45	33.1
Russell, E. B. (1993)	6	4.4
Penrod, K. M. (1991)	5	3.7
Patterson, T. F. (1997)	3	2.2
Weber, J. A., & McCullers, J. C. (1986)	3	2.2
Culp, K., III & Schwartz, V. J. (1999)	2	1.5
Fetsch, R. J., & Yang, R. K. (2002)	2	1.5
Gilmore, G. D., Meehan-Strub, M., & Mormann, D. (1992)	2	1.5
Pittman, J. D., & Bruny, L. (1986)	2	1.5
Rouse, S. B., & Clawson, B. (1992)	2	1.5
Stone, B. B. (1997)	2	1.5

North American Colleges and Teachers of Agriculture Journal

There were 69 cited referenced works from the North American Colleges and Teachers of Agricultural (*NACTA*) Journal identified in the *Journal of Agricultural Education*, during the 10-year content analysis. Miller (1995) was the most frequently cited referenced *NACTA* author in the 10-year analysis of *JAE*. The article was cited in nearly 9% of the referenced *NACTA* articles, in *JAE*. Bekkum and Miller (1994) and Murphy (1997) were the second most frequently cited referenced *NACTA* authors, both *NACTA* articles were referenced 4.4%. Additional frequently cited referenced *NACTA* authors cited in *JAE* 2.9% or more are identified in Table 11.

Table 11

Frequently Cited Referenced North American Colleges and Teachers of Agricultural Journal Authors in the Journal of Agricultural Education 1997 – 2006 (N = 69)

<i>NACTA Author</i>	<i>f</i>	<i>P</i>
Miller, G. (1995)	6	8.7
Bekkum, V. A., & Miller, W. W. (1994)	3	4.3
Murphy, T. H. (1997)	3	4.3
Andelt, L. L., Barrett, L. A., & Bosshamer, B. K. (1997)	2	2.9
Coulter, K. J. (1985)	2	2.9
O'Kane, M., & Armstrong, J. D. (1997)	2	2.9
Radhakrishna, R. B., & Bruening, T. H. (1994)	2	2.9
Rudd, R. D., Baker, M., & Hoover, T. (1998)	2	2.9
Telg, R. W., & Cheek, J. G. (1998)	2	2.9

Journal of Applied Communications

There were 31 cited referenced works from the *Journal of Applied Communications (JAC)* represented in the *Journal of Agricultural Education*, between 1997 and 2006. Reisner (1990) was the most frequently cited referenced *JAC* author in *JAE*. The article was cited in slightly more than 16% of the referenced *JAC* articles. Miller and Carr (1997) and Sprecker and Rudd (1998) were the second most frequently cited referenced *JAC* authors, both *JAC* articles were referenced 12.9%. Table 12 contains a list of frequently cited referenced *JAC* authors, cited 6.5% or more, in the *Journal of Agricultural Education*.

Table 12

Frequently Cited Referenced Journal of Applied Communications Authors in the Journal of Agricultural Education 1997 – 2006 (N = 31)

<i>JAC Author</i>	<i>f</i>	<i>P</i>
Reisner, A. (1990)	5	16.1
Miller, G., & Carr, A. (1997)	4	12.9
Sprecker, K. J., & Rudd R. D. (1998)	4	12.9
Boone, K. M., Paulson, C. E., & Barrick, R. K. (1993)	2	6.5
Rockwell, S. K., King, J. W., & Tate, T. G. (1990)	2	6.5
Vestal, T. A., & Briers, G. E. (1999)	2	6.5
Weaver, J., Hipkins, P., Murphy W., & Hetzel, G. (1991)	2	6.5

Journal of Leadership Education

In the *Journal of Agricultural Education*, there was one cited author referenced to the *Journal of Leadership Education*. The cited reference was Stedman, N. and Rudd, R. D. (2004).

Prolific Citations of Premier AGED Journal Authors in JAE

In the *Journal of Agricultural Education*, there were 1,056 cited references to the six premier agricultural education (AGED) journals, from 1997 to 2006. The most frequently cited referenced premier AGED authors were Miller and Smith (1983) for their work cited from the *Journal of Extension*. Of all cited referenced work, from the premier AGED journals, their work was cited more than 4%. Dyer and Osborne's 1996 work in *JAE* was the second most frequently cited referenced premier AGED citations at 1.6%. In 2001, Lindner, Murphy, and Briers work, in *JAE*, was the third most frequently cited referenced premier AGED journal work (1.51%). Table 13 contains a list of

frequently cited referenced premier AGED journal authors who were cited 0.57% or more, in the *Journal of Agricultural Education*.

Table 13

Frequently Cited Referenced AGED Journal Authors in the Journal of Agricultural Education 1997 – 2006 (N = 1056)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Miller, L., & Smith, K. (1983)	<i>JOE</i>	45	4.26
Dyer, J. E., & Osborne, E. W. (1996)	<i>JAЕ</i>	17	1.60
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAЕ</i>	16	1.51
Torres, R. M., & Cano, J. (1995)	<i>JAЕ</i>	13	1.23
Cano, J., & Garton, B. L. (1994)	<i>JAЕ</i>	11	1.04
Roegge, C. A., & Russell, E. B. (1990)	<i>JAЕ</i>	11	1.04
Buriak, P., & Shinn, G. (1989)	<i>JAЕ</i>	10	0.95
Mundt, J. (1991)	<i>JAЕ</i>	10	0.95
Talbert, B. A., Camp, W. G., & Heath-Camp, B. (1994)	<i>JAЕ</i>	10	0.95
Mundt, J. P. Connors, J. J. (1999)	<i>JAЕ</i>	9	0.85
Murphy, T. H., & Terry, H. R., Jr. (1998)	<i>JAЕ</i>	9	0.85
Williams, D. L. (1991)	<i>JAЕ</i>	9	0.85
Cano, J. (1999)	<i>JAЕ</i>	8	0.76
Connors, J. J., & Elliot, J. (1994)	<i>JAЕ</i>	8	0.76
Dyer, J. E., Lacey, R., & Osborne, E. W. (1996)	<i>JAЕ</i>	8	0.76
Miller, G. (1995)	<i>JAЕ</i>	8	0.76
Whittington, M. S. (1995)	<i>JAЕ</i>	8	0.76
Cano, J., Garton, B. L., & Raven, M. R. (1992)	<i>JAЕ</i>	7	0.66
Hoover, T. S., & Scanlon, D. C. (1991)	<i>JAЕ</i>	7	0.66
Johnson, D. M. (1996)	<i>JAЕ</i>	7	0.66
McLean, R. C., & Camp, W. C. (2000)	<i>JAЕ</i>	7	0.66
Balschweid, M. A., Thompson, G. W., & Cole, R. L. (2000)	<i>JAЕ</i>	6	0.57
Born K. A., & Miller, G. (1999)	<i>JAЕ</i>	6	0.57
Edwards, M. C., & Briers, G. E. (2001)	<i>JAЕ</i>	6	0.57
Garton, B. L., & Chung, N. (1996)	<i>JAЕ</i>	6	0.57
Humphrey, J. K., Stewart, B. R., & Linhardt, R. E. (year)	<i>JAЕ</i>	6	0.57
Marrison, D. L. & Frick, M. J. (1994)	<i>JAЕ</i>	6	0.57

Table 13 (continued)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Miller, G. (1995)	<i>NACTA</i>	6	0.57
Newman, M. E., & Johnson, D. M. (1993)	<i>JAE</i>	6	0.57
Russell, E. B. (1993)	<i>JOE</i>	6	0.57

Frequently Cited Referenced Works

Referenced work adds to understanding and the literature base of the agricultural education discipline. In an effort to better understand where the discipline is securing information, to support the contexts of the peer discipline areas in agricultural education, the research used content analysis to analyze cited referenced books and/or texts; other journals (not identified as premier AGED journals in the field study); proceedings, conferences, and meetings; other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and web pages. To better understand the scope of the discipline works cited, in the above mentioned areas, were analyzed in the *Journal of Agricultural Education*.

Books/Texts

The *Journal of Agricultural Education* cited referenced books and texts 2,311 times. Content analysis was used to determine the most frequently cited books and texts in the *Journal of Agricultural Education*. Books with multiple edition and publication dates are noted in the following table. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method*, which was

cited in 2.68% of the total *JAE* book citations. The second most frequently cited referenced book was Davis' (1971) *Elementary Survey Analysis*, which was referenced 1.90%. Ary, Jacobs, and Razavieh's (2002) *Introduction to Research in Education* was the third most frequently cited referenced book (1.60%). The fourth most frequently cited referenced book was Gall, Borg, and Gall's (1996) *Educational Research: An Introduction* (1.25%). Borg and Gall's (1994) book titled *Educational Research: An Introduction* was the fifth most frequently cited referenced book being cited 0.65%. A list of frequently cited referenced books and texts identified 0.22% or more, in the *Journal of Agricultural Education*, are identified in Table 14.

Table 14

Frequently Cited Referenced Books and Texts in the Journal of Agricultural Education 1997 – 2006 (N = 2,311)

Book and Text	<i>f</i>	<i>P</i>
Dillman, D. A. (2000; 1978). Mail and Internet surveys: The tailored design method (2nd ed.; 1st ed.). New York: John Wiley and Sons, Inc.	62	2.68
Davis, J. A. (1971). Elementary survey analysis. Englewood Cliffs, NJ: Prentice Hall.	44	1.90
Ary, D., Jacobs, L. C., & Razavieh, A. (2002; 1996). Introduction to research in education (6th ed.; 5th ed.). Belmont, CA: Wadsworth Thompson Learning.	37	1.60
Gall, M. D., Borg, W. R., & Gall, J. P. (2003; 1996). Educational research: An introduction (7th ed.; 6th ed.). White Plains, NY: Longman Publishers USA.	29	1.25
Borg, W., & Gall, M. (1994; 1989; 1983). Educational Research: An introduction. (5th ed.; 4th ed.; 3rd ed.). White Plains: Longman.	15	0.65
Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand McNally College Publishing Co.	14	0.61

Table 14 (continued)

Book and Text	<i>f</i>	<i>P</i>
Cohen, J. (1988; 1977; 1969). <i>Statistical power and analysis for the behavioral sciences</i> (3rd ed.; 2nd ed.; 1st ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.	14	0.61
Fishbein, M., & Ajzen, I. (1975). <i>Beliefs, Attitudes, Intentions, and Behaviors</i> . Reading, MA: Addison-Wesley Publishing Company.	14	0.61
Dewey, J. (1938). <i>Experience and Education</i> . New York: Macmillan Publishing Company.	13	0.56
Lincoln, Y. S., & Guba, E. G. (1985). <i>Naturalistic inquiry</i> . Newbury Park, CA: Sage.	13	0.56
Kolb, D. A. (1984). <i>Experiential learning: Experience as the source of learning and development</i> . Upper Saddle River, NJ: Prentice Hall.	11	0.48
Dalkey, N. C. (1969). <i>The Delphi method: An experimental study of group opinion</i> . Santa Monica, CA: The Rand Corporation.	10	0.43
Kerlinger, F. N. (1986; 1973). <i>Foundations of behavioral research</i> . (3rd ed.; 2nd ed.). New York: Holt, Rinehart, and Winston.	10	0.43
Dunkin, M. J., & Biddle, B. J. (1974). <i>The study of teaching</i> . Washington, D.C.: Holt, Rinehart, and Winston.	9	0.39
Miles, M. B., & Huberman, A. M. (1994; 1984). <i>Qualitative data analysis: An expanded sourcebook</i> (2nd ed.; 1st ed.). Thousand Oaks, CA: Sage Publications, Inc.	9	0.39
Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). <i>Taxonomy of Education Objectives Book 1: Cognitive Domain</i> . New York: David McKay.	8	0.35
Cochran, W. G. (1977; 1963). <i>Sampling techniques</i> . New York, NY: John Wiley & Sons.	8	0.35
Fraenkel, J. R., & Wallen, N. E. (2003; 2002; 1999; 1996; 1993). <i>How to design and evaluate research in education</i> . New York: McGraw-Hill.	8	0.35
Kouzes, J. M., & Posner, B. Z. (2002; 1990; 1987). <i>The leadership challenge</i> . San Francisco: Jossey-Bass.	8	0.35

Table 14 (continued)

Book and Text	<i>f</i>	<i>P</i>
Bandura, A. (1986). <i>Social foundations of thought and action: A social cognitive theory</i> . Englewood Cliffs, NJ: Prentice Hall.	7	0.30
Boyer, E. L. (1990). <i>Scholarship reconsidered: Priorities of the Professorate</i> . Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.	7	0.30
Caine, R. N., & Caine, G. (1994). <i>Making connections: Teaching and the human brain</i> . Menlo Park, CA: Addison- Wesley Publishing.	7	0.30
Delp, P., Thesen, A., Motiwalla, J., & Seshadri, N. (1977). <i>Delphi. System Tools for Project Planning</i> . Columbus, OH: National Center for Research in Vocational Education, Ohio State University.	7	0.30
Helmer, O. (1966). <i>Social Technology</i> . New York, NY: Basic Books.	7	0.30
Moore, M. G., & Kearsley, G. (1996). <i>Distance education: A systems view</i> . Belmont, CA: Wadsworth Publishing Company.	7	0.30
Bennis, W. G. (2003). <i>On becoming a leader</i> . Cambridge, Massachusetts: Perseus Publishing.	6	0.26
Cruikshank, D. R. (1990). <i>Research that informs teachers and teacher educators</i> . Bloomington, IN: Phi Delta Kappa Educational Foundation.	6	0.26
Glesne, C. (1999). <i>Becoming qualitative researchers: An introduction</i> (2nd ed.). New York: Addison Wesley Longman.	6	0.26
Greenwald, A. G. (1989). <i>Attitude structure and function</i> . Hillsdale, NJ: Erlbaum Associates.	6	0.26
Hinkle, D. E., Wiersman, W. W & Jurs, S. G. (1979, 1994). <i>Applied statistics for the behavioral sciences</i> (3 rd ed.). Boston: Houghton Mifflin Co.	6	0.26
American Association for the Advancement of Science. (1993). <i>Benchmarks for science literacy</i> . New York, NY: Oxford University Press.	5	0.22
Bandura, A. (1997). <i>Self-efficacy: The exercise of control</i> . New York: W. H. Freeman.	5	0.22
Burns, J. A. (1978, 1989). <i>Leadership</i> . New York: Harper and Row Publishers, Inc.	5	0.22

Table 14 (continued)

Book and Text	<i>f</i>	<i>P</i>
Lancelot, W. H. (1944). Permanent learning a study in educational techniques. New York, NY: John Wiley & Sons, Inc.	5	0.22
Moore, C.M. (1987). Group techniques for idea building. Newbury Park, CA: Sage Publications.	5	0.22

Journals

The *Journal of Agricultural Education* cited referenced journals, other than those identified as premier AGED journals, 1,750 times. Journal articles were analyzed to determine the most frequently cited referenced journals in the *Journal of Agricultural Education*. The most frequently cited referenced journal, in *JAE*, was the *Journal of the American Association of Teacher Educators in Agriculture*. The journal was referenced 10.4%. The second most frequently cited referenced journal was *The American Journal of Distance Education*, which was referenced 3.09%. The third most frequently cited referenced journal was *Educational Leadership* (2.0%). Two cited referenced journals were identified as the fourth most frequently cited journals, in *JAE* (1.83%). The journals were the *Educational and Psychological Measurement* and *Journal of Vocational Education Research*. The fifth most identified frequently cited referenced journals were the *Journal of Teacher Education* and *Review of Educational Research* cited 1.77%. A list of frequently cited referenced journals identified 0.29% or more (not

including the identified premier AGED journals), in the *Journal of Agricultural Education*, are identified in Table 15.

Table 15

Frequently Cited Referenced Journals in the Journal of Agricultural Education 1997 – 2006 (N = 1,750)

Other Journal	<i>f</i>	<i>P</i>
The Journal of the American Association of Teacher Educators in Agriculture	182	10.40
The American Journal of Distance Education	54	3.09
Educational Leadership	35	2.00
Educational and Psychological Measurement	32	1.83
Journal of Vocational Education Research	32	1.83
Journal of Teacher Education	31	1.77
Review of Educational Research	31	1.77
Phi Delta Kappan	23	1.31
Journal of Applied Psychology	19	1.09
Journal of Research in Science Teaching	16	0.91
American Psychologist	15	0.86
Educational Researcher	13	0.74
Harvard Business Review	13	0.74
Journal of Educational Psychology	13	0.74
Psychological Reports	13	0.74
Vocational Education Journal	13	0.74
American Educational Research Journal	11	0.63
Science Education	11	0.63
Training & Development	11	0.63
NACADA Journal	10	0.57
ACE Quarterly	9	0.51
Journal of Environmental Education	9	0.51
Journal of Industrial Teacher Education	9	0.51
Journal of Volunteer Administration	9	0.51
Rural Sociology	9	0.51
Teaching and Teacher Education	9	0.51
The Journal of Higher Education	9	0.51
Change	8	0.46
Educational Psychologist	8	0.46
Educational Technology	8	0.46

Table 15 (continued)

Other Journal	<i>f</i>	<i>P</i>
Journal of Research in Rural Education	8	0.46
The Journal of Leadership Studies	8	0.46
Journal of Adolescent & Adult Literacy	7	0.40
Journal of Career and Technical Education	7	0.40
Journal of College Student Development	7	0.40
Michigan Journal of Community Service Learning	7	0.40
Reading Research Quarterly	7	0.40
School Science and Mathematics	7	0.40
Techniques	7	0.40
The Chronicle of Higher Education	7	0.40
The Science Teacher	7	0.40
Agriculture	6	0.34
Distance Education	6	0.34
Human Relations	6	0.34
Journal of Reading	6	0.34
Journal of Research on Computing in Education	6	0.34
Journal of Southern Agricultural Education Research	6	0.34
Journal of Vocational and Technical Education	6	0.34
American Journal of Alternative Agriculture	5	0.29
Continuing Higher Education Review	5	0.29
Curriculum Review	5	0.29
Educational Research	5	0.29
Educational Technology Research and Development	5	0.29
Evaluation and Program Planning	5	0.29
HR Human Resource Planning	5	0.29
Innovative Higher Education	5	0.29
International Journal of Instructional Media	5	0.29
Journal of Asynchronous Learning Networks	5	0.29
Journal of Educational Computing Research	5	0.29
Journal of Research and Development in Education	5	0.29
Nature-Study Review	5	0.29
T H E Journal	5	0.29
Training	5	0.29

Proceedings, Conferences, and Meetings

The *Journal of Agricultural Education* cited referenced proceedings, conferences, and/or meetings 597 times. The most frequently cited referenced proceeding, conference, and/or meeting was the *National Agricultural Education Research Conference*. The conference proceeding was referenced 59.5%. The second most frequently cited referenced proceeding, conference, and/or meeting was the *Central Region Agricultural Education Research Conference*, which was referenced 11.4%. The third most frequently cited referenced proceeding, conference, and/or meeting, in *JAE*, was the *Southern Agricultural Education Research Conference*. The conference was referenced 8.0%. The *Western Region Agricultural Education Research Conference* was cited 3.2% and the *Eastern Region Agricultural Education Research Conference* was cited 1.8%. Table 16 contains a list of frequently cited referenced proceeding, conference, and/or meeting identified 1.2% or more in the *Journal of Agricultural Education*, between 1997 to 2006.

Table 16

Frequently Cited Referenced Proceedings, Conferences, and/or Meetings in the Journal of Agricultural Education 1997 – 2006 (N = 597)

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
National Agricultural Education Research Conference	355	59.5
Central Region Agricultural Education Research Conference	68	11.4
Southern Agricultural Education Research Conference	48	8.0
Western Region Agricultural Education Research Conference	19	3.2
Eastern Region Agricultural Education Research Conference	11	1.8
Association for International Agricultural and Extension Education	9	1.5
American Educational Research Association	7	1.2

Other Works

The *Journal of Agricultural Education* cited referenced other works 1,037 times. Journal articles were analyzed to determine the types (dissertations, manuscripts, newspapers, government documents, etc.) and most frequent citations of works, in the *Journal of Agricultural Education*. A list of frequently cited referenced other works identified 0.6% or more, in the *Journal of Agricultural Education* are identified in Table 17. The most frequently cited referenced other works were unpublished doctoral dissertations, cited 26.9%. The second most frequently cited referenced other works were ERIC documents, referenced 15.7%. Magazines were the third most frequently cited other works (14.5%). The fourth most frequently cited referenced other works were

census and other government documents cited 11.0%. University manuscripts were the fifth most cited referenced other works, cited 8.2%. Unpublished manuscripts and reports were referenced 5.8%. The seventh most cited referenced other works were unpublished Master of Science theses (5.5%). Additional other works cited 2.5% or less, in the *Journal of Agricultural Education*, are identified in the table below.

Table 17

Frequently Cited Referenced Other Works in the Journal of Agricultural Education 1997 – 2006 (N = 1,037)

Other Work	<i>f</i>	<i>P</i>
Unpublished Doctoral Dissertation	279	26.9
ERIC Documents	163	15.7
Magazines	150	14.5
Census/Government Documents	114	11.0
University Manuscript	85	8.2
Unpublished Manuscripts or Reports	60	5.8
Unpublished M.S. Thesis	57	5.5
Extension Manuscript	21	2.0
FFA manuals, archives, and handbooks	14	1.4
Manuscript Submitted for Publication	14	1.4
Personal Communication	11	1.1
Annual or Final Reports	10	1.0
Raw Data	10	1.0
Newspapers	8	0.8
Directory of teacher educators AGED	6	0.6
Policy and Laws	6	0.6

Web Pages

The *Journal of Agricultural Education* cited referenced web pages 354 times, as identified in Table 18. The most frequently cited referenced web pages were .org

websites; referenced 32.0%. The second most frequently cited referenced web pages were .edu sites; referenced 30.5%. The third most frequently cited referenced web pages, in *JAE*, was .gov; referenced 18.6%. web pages with .com indexes were referenced 11.6%. Web pages with .us and .ca indexes were referenced 2.5%. Other complied web pages including: .ia, .html, and .net sites were referenced in 2.3% of the total *JAE* web page cited references.

Table 18

Frequently Cited Referenced Web Pages in the Journal of Agricultural Education 1997 – 2006 (N = 354)

Web page	<i>f</i>	<i>P</i>
.org	113	32.0
.edu	108	30.5
.gov	66	18.6
.com	41	11.6
.us	9	2.5
.ca	9	2.5
Other (.ia, .html, .net)	8	2.3

Journal of International Agricultural and Extension Education

The Journal of International Agricultural and Extension Education (JIAEE)

was identified in the field study as being a premier agricultural education research journal. Sixty-seven percent of respondents indicated the *JIAEE* was representative of the agricultural education discipline. Articles in the *Journal of International Agricultural and Extension Education* issues I and III, from 1997 to 2006, were analyzed in the

content analysis. *JIAEE* journal issues II were excluded from the study because these issues possessed the annual conference articles per respective year. There were a total of 144 articles analyzed in the 10-year period.

Primary and Secondary Research Themes

Primary research themes identified in the *Journal of International Agricultural and Extension Education (JIAEE)* are listed in Table 19. There were 27 primary research theme areas identified in JIAEE in the 10-year content analysis. The most frequently identified primary research theme was evaluation (16.0%). The second most frequent primary research theme was globalization and internationalization, identified in 9.7% of the research articles. Needs assessment was identified in 9.0% of the *JIAEE* articles as the primary research theme. Food, agriculture, natural resources, health, and family was the fourth most frequently identified primary research theme (8.3%). The fifth most frequent primary research theme was curriculum and program development, identified in 6.3% of the research articles. Primary research theme areas identified in *JIAEE* research articles 5.6% or less are identified in the table below.

Table 19

Primary Research Themes Identified in the Journal of International Agricultural and Extension Education 1997–2006 (N = 144, 27 primary research themes)

Research Theme	<i>f</i>	<i>P</i>
Evaluation	23	16.0
Globalization & Internationalization	14	9.7
Needs Assessment	13	9.0
Food, Agriculture, Natural Resources, Health, & Family	12	8.3
Curriculum & Program Development	9	6.3
Diversity (culture, ethnicity, gender)	8	5.6
Perceptions & Attitudes Assessment	7	4.9
Academic Programs	5	3.5
Collaborations, Partnerships, & Coalitions	5	3.5
Diffusion of Innovations	5	3.5
Institutional Organization & Institutionalization	5	3.5
Knowledge Competencies & Development	5	3.5
Professional Development	5	3.5
Career Development & Assessment	4	2.8
Instructional & Program Delivery Approaches	3	2.1
Organizational Development & Leadership	3	2.1
Research (methods and models)	3	2.1
Communication Technology	2	1.4
Critical Thinking	2	1.4
Information Sources & Technology	2	1.4
Leadership Development	2	1.4
Teacher Preparation & Competence	2	1.4
Biotechnology Communications	1	0.7
Communication Management	1	0.7
Policy Issues	1	0.7
Skill Development & Competencies	1	0.7
Volunteer Development & Leadership	1	0.7

Secondary research themes identified in the *Journal of International Agricultural and Extension Education* are listed in Table 20. There were 31 secondary research theme areas identified in JAIEE, during the 10-year analysis. The most frequently identified

secondary research theme was food, agriculture, natural resources, health, and family (11.1%). The second most frequent secondary research theme was globalization and internationalization, identified in 10.4% of the research articles. Evaluation was the third most frequently identified secondary research theme (8.3%). Perceptions and attitudes assessment was identified in 7.6% of the *JIAEE* articles, as the secondary research theme. Curriculum and program development and professional development were the fifth most frequent secondary research themes identified in 5.6% of the *JIAEE* research articles. Secondary research theme areas identified in *JIAEE* research articles 4.2% or less are identified in the table below.

Table 20

Secondary Research Themes Identified in the Journal of International Agricultural and Extension Education 1997–2006 (N = 144, 31 secondary research themes)

Research Theme	<i>f</i>	<i>P</i>
Food, Agriculture, Natural Resources, Health, & Family	16	11.1
Globalization & Internationalization	15	10.4
Evaluation	12	8.3
Perceptions & Attitudes Assessment	11	7.6
Curriculum & Program Development	8	5.6
Professional Development	8	5.6
Academic Programs	6	4.2
Needs Assessment	6	4.2
Community Development & Leadership	5	3.5
Information Sources & Technology	5	3.5
Instructional & Program Delivery Approaches	5	3.5
Appropriateness of Education	4	2.8
Career Development & Assessment	4	2.8
Formal & Informal Teaching Approaches	4	2.8
Knowledge Competencies & Development	4	2.8
Research (methods and models)	4	2.8
Critical Thinking	3	2.1

Table 20 (continued)

Research Theme	<i>f</i>	<i>P</i>
Diffusion of Innovations	3	2.1
Institutional Organization & Institutionalization	3	2.1
Communications of Scholarship	2	1.4
Leadership Management	2	1.4
Risk & Crisis Communications	2	1.4
Skill Development & Competencies	2	1.4
Teacher Preparation & Competence	2	1.4
Youth Leadership & Development	2	1.4
Collaborations, Partnerships, & Coalitions	1	0.7
Communication Technology	1	0.7
Distance Education	1	0.7
Funding (resource development/needs)	1	0.7
Leadership Education	1	0.7
Policy Issues	1	0.7

Frequently Used Primary and Secondary Research Themes by Year

Table 21 outlines the frequently used primary research themes identified in the *Journal of International Agricultural and Extension Education* by year. In 1997, evaluation was the most frequently identified primary research theme, 36.4% (4 out of 11 articles). In 1998, there were three most used primary research theme areas: curriculum and program development, evaluation, and globalization and internationalization, 18.2% (2 out of 11 articles). In 1999, evaluation was the most frequently used primary research theme at 26.7% (4 out of 15 articles). In 2000, the most frequent primary research theme was evaluation, 25% (3 out of 12 articles). In 2001, there were two most frequently identified primary research theme areas: food, agriculture, natural resources, health, and family and professional development used

23.1% (3 out of 13 articles). Seven primary research theme areas were identified in 2002: diffusion of innovations; diversity (culture, ethnicity, gender); evaluation; globalization and internationalization; information sources and technology; institutional organization and institutionalization; and knowledge competencies and development used 10% (2 out of 20 articles). In 2003, the most frequent primary research theme was perceptions and attitudes assessment, 17.6% (3 out of 17 articles). In 2004, there were two primary research theme areas identified 19%, institutional organization and institutionalization and needs assessment (4 out of 21 articles). Evaluations and needs assessment were the two most used primary research theme in 2005, 25% (3 out of 12 articles). In 2006, communication technology and institutional organization and institutionalization were the two most frequently identified primary research theme areas in the *Journal of International Agricultural and Extension Education*, 16.7% (2 out of 12 articles).

Table 21

Most Identified Primary Research Themes Identified in the Journal of International Agricultural and Extension Education by Year (N = 144)

Year	Primary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Evaluation	11	4	36.4
1998	Curriculum and Program Development			
	Evaluation			
	Globalization and Internationalization	11	2	18.2
1999	Evaluation	15	4	26.7
2000	Evaluation	12	3	25.0
2001	Food, Agriculture, Natural Resources, Health, and Family			
	Professional Development	13	3	23.1
2002	Diffusion of Innovations			
	Diversity (culture, ethnicity, gender)			
	Evaluation			
	Globalization and Internationalization			
	Information Sources and Technology			
	Institutional Organization and Institutionalization			
	Knowledge Competencies and Development	20	2	10.0
2003	Perceptions and Attitudes Assessment	17	3	17.6
2004	Institutional Organization and Institutionalization			
	Needs Assessment	21	4	19.0
2005	Evaluation			
	Needs Assessment	12	3	25.0
2006	Communication Technology			
	Institutional Organization and Institutionalization	12	2	16.7

Table 22 outlines the frequently used secondary research themes identified in the *Journal of International Agricultural and Extension Education* by year. In 1997, community development and leadership and perceptions and attitudes assessment were the most frequently used secondary research theme, 18.2% (2 out of 11 articles). In 1998, food, agriculture, natural resources, health, and family was identified as the

primary secondary theme in 36.4% of the articles (4 out of 11 articles). In 1999, the most frequently identified secondary research theme areas were food, agriculture, natural resources, health, and family and evaluation, 20% (3 out of 15 articles). In 2000, the most frequently used secondary research theme was globalization and internationalization used 25% (3 out of 12 articles). In 2001, there were two secondary research theme areas identified, globalization and internationalization and perceptions and attitudes assessment 15.4% (2 out of 13 articles). In 2002, needs assessment was the most frequently identified secondary research theme, 15% (3 out of 20 articles). In 2003, the most frequent secondary research theme was food, agriculture, natural resources, health, and family, 17.6% (3 out of 17 articles). In 2004, professional development was the most frequent secondary research themes, 19% (4 out of 21 articles). Curriculum and program development was the most frequent secondary research theme identified in 25% of the analyzed articles in 2005 (3 out of 12 articles). In 2006, globalization and internationalization was the most frequently identified secondary research theme identified in 25% of the articles (3 out of 12 articles).

Table 22

Most Identified Secondary Research Themes Identified in the Journal of International Agricultural and Extension Education by Year (N = 144)

Year	Secondary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Community Development and Leadership Perceptions and Attitudes Assessment	11	2	18.2
1998	Food, Agriculture, Natural Resources, Health, and Family	11	4	36.4
1999	Food, Agriculture, Natural Resources, Health, and Family Evaluation	15	3	20.0
2000	Globalization and Internationalization	12	3	25.0
2001	Globalization and Internationalization Perceptions and Attitudes Assessment	13	2	15.4
2002	Needs Assessment	20	3	15.0
2003	Food, Agriculture, Natural Resources, Health, and Family	17	3	17.6
2004	Professional Development	21	4	19.0
2005	Curriculum and Program Development	12	3	25.0
2006	Globalization and Internationalization	12	3	25.0

Prolific Authorship

The prolific authors identified in the *Journal of International Agricultural and Extension Education*, 0.9% or more of the total authors and 2.1% or total articles, are listed in Table 23. There were 329 *JIAEE* authors identified in the 144 analyzed articles. Mohammad Chizari, Barnabas Dlamini, and James Lindner were the most prolific author in *JIAEE*, authoring or co-authoring, 9 of the 144 articles (6.3%) between 1997 and 2006. Thomas Bruening was the second most prolific author, cited 5.6% in the total *JIAEE* articles, during 10-year period. Nick Place and Rama Radhakrishna were the third most prolific authors, in *JIAEE*, authoring or co-authoring 3.5% of the total articles.

James Lindner and Rick Rudd were the third most prolific authors, authoring or co-authoring 3.5% of the total published articles. Robert Martin and Xiaorang Shao authored or co-authored 2.8% of the total *JIAEE* articles. Additional prolific authors are identified in the following table.

Table 23

Prolific Authorship in the Journal of International Agricultural and Extension Education 1997 – 2006 (N of Authors = 329, N of Total Articles = 144)

Prolific Author	<i>f</i>	<i>P</i> of Authors	<i>P</i> of Total Articles
Chizari, Mohammad	9	2.7	6.3
Dlamini, Barnabas M.	9	2.7	6.3
Lindner, James R.	9	2.7	6.3
Bruening, Thomas H.	8	2.4	5.6
Place, Nick T.	5	1.5	3.5
Radhakrishna, Rama B.	5	1.5	3.5
Martin, Robert A.	4	1.2	2.8
Shao, Xiaorang	4	1.2	2.8
Acker, David G.	3	0.9	2.1
Agunga, Robert	3	0.9	2.1
Ajayi, Michael T.	3	0.9	2.1
Al-Rimawi, Aahmad S.	3	0.9	2.1
Baker, Matt	3	0.9	2.1
Dooley, Kim E.	3	0.9	2.1
Frick, Marty	3	0.9	2.1
Hildebrand, Peter	3	0.9	2.1
Ladebo, Olugbenga J.	3	0.9	2.1
Wingenbach, Gary J.	3	0.9	2.1
Zinnah, Moses M.	3	0.9	2.1

Research Methods

Research methods utilized in the *Journal of International Agricultural and Extension Education* are identified in Table 24. Quantitative research methods were the most common (75.7%), followed by qualitative (11.1%), and the least frequently used research methods were mixed (13.2%).

Table 24

Research Methods Used in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 144)

Method	<i>f</i>	<i>P</i>
Quantitative	109	75.7
Qualitative	16	11.1
Mixed Methods	19	13.2

Research method types used in the 144 articles published in the *Journal of International Agricultural and Extension Education* are outlined in Table 25. Survey methods were the most frequent research method types used (45.8%). Historical research was utilized in 16.7% of the published research. The third most common research type was interview research, 5.6%. Content analysis, correlation, evaluation and survey and interviews were used in 4.9% of the *JIAEE* studies. Interview and focus group methods were identified in 3.5% of the research. Additional research method types utilized in *JIAEE* research articles less than 3% are identified in the table below.

Table 25

Research Method Types Used in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 144)

Method Type	<i>f</i>	<i>P</i>
Survey	66	45.8
Historical	24	16.7
Interviews	8	5.6
Content Analysis	7	4.9
Correlation	7	4.9
Evaluation	7	4.9
Survey and Interviews	7	4.9
Interviews and Focus Group	5	3.5
Case Study	3	2.1
Holistic	3	2.1
Delphi	2	1.4
Experimental	2	1.4
Focus Group	1	0.7
Interviews and Observations	1	0.7
Survey and Case Study	1	0.7

Cited Referenced Authors from the Peer Discipline Areas of AGED

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the *Journal of Leadership Education* were identified in the field study as premier research journal outlets in agricultural education. Each of these journals supports the broad contexts of the peer discipline areas in agricultural education. The better understand the scope of the discipline citing its own works a content analysis was completed on the

cited referenced works in the *Journal of International Agricultural and Extension Education*.

Journal of Agricultural Education

There were 65 cited referenced works from the *Journal of Agricultural Education (JAE)* represented in the *Journal of International Agricultural and Extension Education*. There were five groups of authors identified as the most frequently cited referenced *JAE* authors cited in *JIAEE*, being referenced in 4.6% of the *JAE* in *JIAEE* articles. These authors are: Chizari, Karbasioun, and Lindner (1998); Findlay (1992); Ibezim and McCracken (1994); Lindner and Dooley (2002); and Lindner, Murphy, and Briers (2001). The second most frequently cited referenced *JAE* authors being cited 3.5% in the *Journal of International Agricultural and Extension Education*, are identified in Table 26.

Table 26

Frequently Cited Journal of Agricultural Education Authors Referenced in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 65)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Chizari, M., Karbasioun, M., & Lindner, J. R. (1998)	3	4.6
Findlay, H. J. (1992)	3	4.6
Ibezim, D. O., & McCracken, J. D. (1994)	3	4.6
Lindner, J. R., & Dooley, K. E. (2002)	3	4.6
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	3	4.6
Chizari, M., Lindner, J. R., & Zoghie, M. (1999)	2	3.1
Clason, D. L., & Dormody, T. J. (1994)	2	3.1
Dyer, J. E., & Osborne, E. W. (1996)	2	3.1
McCormick, D. F., & Whittington, M. S. (2000)	2	3.1
Miller, L. E. (1998)	2	3.1
Waters, R. G., & Haskell, L. J. (1989)	2	3.1

Journal of International Agricultural and Extension Education

There were 107 cited referenced works from previous publications in the *Journal of International Agricultural and Extension Education (JIAEE)* identified in the *Journal of International Agricultural and Extension Education*. Acker and Scanes were the most frequently cited referenced *Journal of International Agricultural and Extension Education* authors in the 10-year analysis of *JIAEE*. The authors 2000 and 1998 articles were cited in 4.7% of the referenced *JIAEE* articles. Bruening and Frick (2004) were the second most frequently cited referenced *JIAEE* authors being cited 3.7%. The authors were: Duffy, Toness, and Christiansen (1998); Pezeshki-Raad, Yoder, and Diamond (1994); Sammons and Martin (1997). A comprehensive list of frequently cited referenced *JIAEE* authors cited in 1.9% of the *Journal of International Agricultural and Extension Education* are identified in Table 27.

Table 27

Frequently Cited Journal of International Agricultural and Extension Education Authors Referenced in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 107)

<i>JIAEE</i> Author	<i>f</i>	<i>P</i>
Acker, D. G., & Scanes C. G. (2000)	5	4.7
Acker, D. G., & Scanes, C. G. (1998)	5	4.7
Bruening, T. H., & Frick, M. (2004)	4	3.7
Duffy, S., Toness, A., & Christiansen, J. (1998)	3	2.8
Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994)	3	2.8
Sammons, S., & Martin, R. (1997)	3	2.8
Acker, D. G. (1999)	2	1.9
Akpan, M., & Martin R. A. (1996)	2	1.9
Bruening, T. H., & Shao, X. (2005)	2	1.9

Table 27 (continued)

<i>JIAEE</i> Author	<i>f</i>	<i>P</i>
Chizari, M., Linder, J., & Zoghie, M. (1999)	2	1.9
Martin, R. A., & Rajasekaran, B. (1994)	2	1.9
Place, N. T., Evans, D. E., Andrews, M. P., & Crago, N. E. (2000)	2	1.9
Radhakrishna, R. B., & Dominquez, D. (1999)	2	1.9
Redmann, D. H., Schupp, A. R., & Richardson, W. B. (1998)	2	1.9
Wallace, I. R. (1999)	2	1.9

Journal of Extension

Table 28 contains the frequently cited referenced *Journal of Extension* authors being cited at least twice or 4.1%, in the *Journal of International Agricultural and Extension Education*, during the 10-year content analysis. There were 49 cited referenced works from the *Journal of Extension (JOE)* represented in the *Journal of International Agricultural and Extension Education*. Miller and Smith (1983) were the most frequently cited referenced *Journal of Extension* authors in *JIAEE*. The article was cited in 18.4% of the referenced *JOE* articles. There were four authors identified as the second most frequently cited referenced *JOE* authors being cited twice (4.1%). These authors are identified in the following table

Table 28

Frequently Cited Journal of Extension Authors Referenced in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 49)

<i>JOE Author</i>	<i>f</i>	<i>P</i>
Miller, L. E., & Smith, K. L. (1983)	9	18.4
Barao, S. M. (1992)	2	4.1
Bloome, P. (1993)	2	4.1
Ludwig, B. G. (1999)	2	4.1
Ludwig, B. G. (1993)	2	4.1

North American Colleges and Teachers of Agriculture Journal

In the *Journal of International Agricultural and Extension Education*, there were eleven cited references made to the *North American Colleges and Teachers of Agriculture Journal (NACTA)* during the 10-year content analysis period. Mason, S., Eskridge, K., Kliever, B., Bonifas, G., Deprez, J., Medinger Pallas, C., & Meyer, M. (1994) and Newcomb, L. H., & Clark, R. W. (1985) were *NACTA* authors referenced twice (27.3%) in *JIAEE* citations. The remaining seven cited referenced *NACTA* authors in *JIAEE* were each referenced once.

Journal of Applied Communications

In the *Journal of International Agricultural and Extension Education* there were two referenced citations to authors from the *Journal of Applied Communications (JAC)*. The cited referenced authors were Buchili, V., & Pearce, B. (1974) and Suvedi, M, Campo, S., & Lapinski, M. K. (1999).

Journal of Leadership Education

In the *Journal of International Agricultural and Extension Education*, there were no cited referenced authors from the *Journal of Leadership Education (JOLE)*.

Prolific Citations of Premier AGED Journal Authors in JIAEE

In the *Journal of International Agricultural and Extension Education*, there were 234 cited references to the six premier agricultural education (AGED) journals, from 1997 to 2006. The most frequently cited referenced authors in *JIAEE* publications, were Miller and Smith (1983) for their work cited from the *Journal of Extension*. Of all cited referenced work from the premier AGED journals, their work was cited 3.8%. Acker and Scanes 2000 and 1998 works in *JIAEE* were the second most frequently cited referenced premier AGED referenced citations at 2.1%. In 2004, Bruening and Frick, in *JIAEE*, were the third most frequently cited referenced premier AGED journal authors (1.7%). Table 29 contains a list of frequently cited referenced AGED journal authors who were cited 1.3% or more, in the *Journal of International Agricultural and Extension Education*.

Table 29

Prolific Citations of the Premier AGED Journal Authors in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 234)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Miller, L. E., & Smith, K. L. (1983)	<i>JOE</i>	9	3.8
Acker, D. G., & Scanes C. G. (2000)	<i>JIAEE</i>	5	2.1
Acker, D. G., & Scanes, C. G. (1998)	<i>JIAEE</i>	5	2.1
Bruening, T. H., & Frick, M. (2004)	<i>JIAEE</i>	4	1.7
Chizari, M., Karbasioun, M., & Lindner, J. R. (1998)	<i>JAEE</i>	3	1.3
Duffy, S., Toness, A., & Christiansen, J. (1998)	<i>JIAEE</i>	3	1.3
Findlay, H. J. (1992)	<i>JAEE</i>	3	1.3
Ibezim, D. O., & McCracken, J. D. (1994)	<i>JAEE</i>	3	1.3
Lindner, J. R., & Dooley, K. E. (2002)	<i>JAEE</i>	3	1.3
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAEE</i>	3	1.3
Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994)	<i>JIAEE</i>	3	1.3
Sammons, S., & Martin, R. (1997)	<i>JIAEE</i>	3	1.3

Frequently Cited Referenced Works

Referenced work adds to understanding and the literature base of the agricultural education discipline. In an effort to better understand where the discipline is securing information, to support the contexts of the peer discipline areas in agricultural education, the research used content analysis to analyze cited referenced books and/or texts; other journals (not identified as premier AGED journals in the field study); proceedings, conferences, and meetings; other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and web pages. To better understand the

scope of the discipline works cited in the above mentioned areas were analyzed in the *Journal of International Agricultural and Extension Education*.

Books/Texts

The *Journal of International Agricultural and Extension Education* cited referenced books and texts 886 times. Content analysis was used to determine the most frequently cited books and texts in the *JIAEE*. Books with multiple edition and publication dates are noted in the following table. The most frequently cited referenced book was Rogers' (1995) *Diffusion of Innovations*, cited in 0.9% of the total *JIAEE* book citations. The second most frequently cited referenced book was Dillman (2000) *Mail and Internet Surveys: The Tailored Design Method*, referenced 0.79%. Davis (1971) *Elementary Survey Analysis* and Lincoln and Guba (1985) *Naturalistic Inquiry* were the third most frequently cited referenced books (0.68%). The fourth most frequently cited referenced books were Seevers, Graham, Gamon, and Conklin (1997) *Education Through Cooperative Extension* and Van den Ban and Hawkins (1988) *Agricultural Extension* (0.56%). A list of frequently cited referenced books and texts identified 0.34% or more, in the *Journal of International Agricultural and Extension Education*, are identified in Table 30.

Table 30

Frequently Cited Books and Texts in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 886)

Book and Text	<i>f</i>	<i>P</i>
Rogers, E.M. (1995; 1983). <i>Diffusion of innovations</i> (4th ed.). New York: The Free Press.	8	0.90
Dillman, D. A. (2000; 1987; 1978). <i>Mail and internet surveys: The tailored design method</i> (2nd ed.). New York: Wiley & Sons.	7	0.79
Davis, J. A. (1971). <i>Elementary survey analysis</i> . Englewood, NJ: Prentice-Hall.	6	0.68
Lincoln, Y.S., & Guba, E.G. (1985). <i>Naturalistic inquiry</i> . Beverly Hills: Sage.	6	0.68
Seevers, B., Graham, D., Gamon, J., & Conklin N. (1997). <i>Education through Cooperative Extension</i> . Albany, NY, Delmar Publishers.	5	0.56
Van den Ban, A. W., & Hawkins, H. S. (1988). <i>Agricultural Extension</i> . New York, NY: John Wiley & Sons, Inc.	5	0.56
Cohen, J. (1988). <i>Statistical power analysis for the behavioral sciences</i> (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.	4	0.45
Kerlinger, F. N. (1986). <i>Foundation of behavioral research</i> . New York: Holt, Rinehart, and Winston.	4	0.45
Patton, M. Q. (1990). <i>Qualitative evaluation and research methods</i> (2nd ed.). Newbury Park, CA: Sage.	4	0.45
Argyris, C., & Schön, D. A. (1996; 1978). <i>Organizational learning II: Theory, method, and practice</i> . Boston: Addison-Wesley.	3	0.34
Ban, A. W., & Hawkins, H. S. (1988). <i>Agricultural Extension</i> . England: Longman Scientific & Technical.	3	0.34
Chambers, R. (1997). <i>Whose reality counts? Putting the last first</i> . London: Intermediate Technology Publications	3	0.34
Knowles, M. S. (1980; 1970). <i>The modern practice of adult education: From pedagogy to andragogy</i> . Chicago: Association Press, Follett Publishing Company.	3	0.34

Table 30 (continued)

Book and Text	<i>f</i>	<i>P</i>
Swanson, B. E. (Ed.) (1990). Report of the global consultation on agricultural extension. Rome: Food and Agriculture Organization of the United Nations.	3	0.34

Journals

The *Journal of International Agricultural and Extension Education* cited referenced journals, other than those identified as premier AGED journals, 447 times. Journal articles were analyzed to determine the most frequently cited referenced journals in *JIAEE*. The most frequently cited referenced journal, in *JIAEE*, was the *South African Journal of Agricultural Extension*. The journal was referenced 3.13%. The second most frequently cited referenced journal was the *Journal of Agricultural Education and Extension*, which was referenced 2.46%. The third most frequently cited referenced journal was *World Development* (2.24%). Five cited referenced journals were identified as the fourth most frequently cited journals, in *JIAEE* (1.34%). The journals were the *Australian Journal of Experimental Agriculture, Educational and Psychological Measurement*, *European Journal of Agricultural Education and Extension*, *Journal of Teacher Education*, and *Rural Sociology*. A list of frequently cited referenced journals identified 1.12% or more (not including the identified premier AGED journals), in the *Journal of International Agricultural and Extension Education*, are identified in Table 31.

Table 31

Frequently Cited Journals in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 447)

Other Journals	<i>f</i>	<i>P</i>
South African Journal of Agricultural Extension	14	3.13
Journal of Agricultural Education and Extension	11	2.46
World Development	10	2.24
Journal of Applied Psychology	8	1.79
Australian Journal of Experimental Agriculture	6	1.34
Educational and Psychological Measurement	6	1.34
European Journal of Agricultural Education and Extension	6	1.34
Journal of Teacher Education	6	1.34
Rural Sociology	6	1.34
Academy of Management Journal	5	1.12
Agricultural Systems	5	1.12
Agricultural Science	5	1.12
Journal of Extension Systems	5	1.12
Journal of Sustainable Agriculture	5	1.12
Research in Higher Education	5	1.12
Review of International Co-operation	5	1.12
Training and Development Journal	5	1.12

Proceedings, Conferences, and Meetings

The *Journal of International Agricultural and Extension Education* cited referenced proceedings, conferences, and/or meetings 194 times. The most frequently cited referenced proceeding, conference, and/or meeting was the *Association for International Agricultural and Extension Education Conference*. The conference proceeding was referenced 14.3%. The second most frequently cited referenced proceeding, conference, and/or meeting were *Australian Institute of Agricultural Science* and *National Agricultural Education Research Conference*, both referenced 2.1%. The

third most frequently cited referenced proceeding, conference, and/or meeting, in *JIAEE*, was the *Proceedings of the New Zealand Society of Animal Production*. The conference was referenced 1.5%. Table 32 contains a list of frequently cited referenced proceeding, conference, and/or meeting identified 1.0% or more in the *Journal of International Agricultural and Extension Education* from 1997 to 2006.

Table 32

Frequently Cited Proceedings, Conferences, and Meetings in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 194)

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
Association for International Agricultural and Extension Education Conference	28	14.3
Australian Institute of Agricultural Science	4	2.1
National Agricultural Education Research Conference	4	2.1
Proceedings of the New Zealand Society of Animal Production	3	1.5
Annual Teagasc National Dairy Conference	2	1.0
Forestry Education workshop	2	1.0
International Rangelands Congress	2	1.0
International Workshop on Transforming Agricultural Extension in Africa	2	1.0
Proceedings of a SACCAR/CIDA Workshop of Deans of Faculties of Agricultural Sciences and Representatives of Agribusiness in SADC Countries	2	1.0
Report of the Islamic Republic of Iran on Forestry Development and Key Events	2	1.0

Other Works

The *Journal of International Agricultural and Extension Education* cited referenced other works 399 times. Journal articles were analyzed to determine the types (dissertations, manuscripts, newspapers, government documents, etc.) and most frequent citations of works, in *JIAEE*. A list of frequently cited referenced other works identified 1.3% or more, in the *Journal of International Agricultural and Extension Education* are identified in Table 33. The most frequently cited referenced other works were unpublished doctoral dissertations, cited 13.3%. The second most frequently cited referenced other works were unpublished Master of Science theses, referenced 8.5%. Unpublished manuscripts or reports were the third most frequently cited other works (8.3%), in *JIAEE*. The fourth most frequently cited referenced other works were Extension manuscripts, cited 7.3%. University manuscripts were the fifth most cited referenced other works cited 7.0%. Food and Agriculture Organization manuals were referenced 6.8%. The seventh most cited referenced other works were annual or final reports (6.0%). Additional other works cited 1.3% or more, in the *Journal of International Agricultural and Extension Education*, are identified in the table below.

Table 33

Frequently Cited Other Works in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 399)

Other Work	<i>f</i>	<i>P</i>
Unpublished Doctoral Dissertation	53	13.3
Unpublished M.S. Thesis	34	8.5
Unpublished Manuscripts or Reports	33	8.3
Extension Manuscript	29	7.3
University Manuscript	28	7.0
Food and Agriculture Organization Manuals	27	6.8
Annual or Final Reports	24	6.0
Census/Government Documents	23	5.8
ERIC Documents	21	5.3
National Research Reports	18	4.5
Newspapers	16	4.0
Magazines	10	2.5
World Bank Research Reports	10	2.5
Manuscript Submitted for Publication	5	1.3

Web Pages

The *Journal of International Agricultural and Extension Education* cited referenced web pages 126 times, as identified in Table 34. The most frequently cited referenced web pages were .org websites; referenced 37.3%. The second most frequently cited referenced web pages were .edu sites; referenced 13.5%. The third most frequently cited referenced web pages, in *JIAEE*, were .com sites; referenced 12.7%. web pages with .gov indexes were referenced 8.7%. Web pages with .net indexes were the fifth most frequently cited web pages (4.8%). Additional cited referenced web pages in the *Journal of International Agricultural and Extension Education* are identified in the following table.

Table 34

Frequently Cited Web Pages in the Journal of International Agricultural and Extension Education 1997 – 2006 (N = 126)

Web page	<i>f</i>	<i>P</i>
.org	47	37.3
.edu	17	13.5
.com	16	12.7
.gov	11	8.7
.net	6	4.8
.ie	5	4.0
.br	4	3.2
.ca	3	2.3
.int	3	2.3
Other (.ac.nz; .ac.uk; au; .gc.ca; go.tz; .html; .mx; .nk; .nl; .ul.pt)	14	11.1

Journal of Extension

The *Journal of Extension (JOE)* was identified in the field study as being a premier agricultural education research journal. Sixty-three percent of respondents indicated that the *JOE* was representative of the agricultural education discipline. All research (in brief) articles and feature articles with research methodologies in the *Journal of Extension* from 1997 to 2006 were analyzed in the content analysis. There were 548 *JOE* articles analyzed.

Primary and Secondary Research Themes

Primary research themes identified in the *Journal of Extension* are identified in Table 35. There were 44 primary research theme areas identified in *JOE* for the 10-years of content analysis. The most frequently identified primary research theme was food,

agriculture, natural resources, health, and family (23.4%). There were two primary research theme areas identified as the second most frequent theme areas. They were instructional and program delivery approaches and youth leadership and development, identified in 8.2% of the *JOE* research articles. Needs assessment and volunteer development and leadership were identified as the third most used primary research theme areas at 5.3%. Information sources and technology was the fourth most frequently identified primary research theme (5.1%). The fifth most frequent primary research theme was evaluation, identified in 4.0% of the *JOE* research articles. Primary research theme areas identified in *JOE* research articles 2.6% or less are identified in the table below.

Table 35

Primary Research Themes Identified in the Journal of Extension 1997–2006 (N = 548, 44 primary research themes)

Research Theme	<i>f</i>	<i>P</i>
Food, Agriculture, Natural Resources, Health, & Family	128	23.4
Instructional & Program Delivery Approaches	45	8.2
Youth Leadership & Development	45	8.2
Needs Assessment	29	5.3
Volunteer Development & Leadership	29	5.3
Information Sources & Technology	28	5.1
Evaluation	22	4.0
Collaborations, Partnerships, & Coalitions	14	2.6
Curriculum & Program Development	13	2.4
Research (methods and models)	13	2.4
Distance Education	12	2.2
Diversity (culture, ethnicity, gender)	11	2.0
Organizational Development & Leadership	11	2.0
Policy Issues	11	2.0
Accountability	9	1.6

Table 35 (continued)

Research Theme	<i>f</i>	<i>P</i>
Leadership Development	9	1.6
Professional Development	9	1.6
Formal & Informal Teaching Approaches	8	1.5
Marketing & Promotion	8	1.5
Skill Development & Competencies	8	1.5
Community Development & Leadership	7	1.3
Leadership Management	7	1.3
Quality of Life & Life Skills	7	1.3
Career Development & Assessment	6	1.1
Funding (resource development/needs)	5	0.9
Globalization & Internationalization	5	0.9
Institutional Organization & Institutionalization	5	0.9
Processes, Principles, & Styles of Learning	5	0.9
Communication Management	4	0.7
Consumer/Audience Response & Analysis	4	0.7
Service & Experiential Learning	4	0.7
Business/Employee Management & Expansion	3	0.5
Communication Technology	3	0.5
Communications of Scholarship	3	0.5
Diffusion of Innovations	3	0.5
Appropriateness of Education	2	0.4
Biotechnology Communications	2	0.4
Electronic Media	2	0.4
Leadership Education	2	0.4
Perceptions & Attitudes Assessment	2	0.5
Risk & Crisis Communications	2	0.4
Critical Thinking	1	0.2
Media Relations	1	0.2
Teacher Preparation & Competence	1	0.2

Secondary research themes identified in the *Journal of Extension* are identified in Table 36. There were 42 secondary research theme areas identified in *JOE* articles from 1997 to 2006. The most frequently identified secondary research theme was food,

agriculture, natural resources, health, and family (14.2%). The second most frequent secondary research theme was evaluation, identified in 12.2% of the *JOE* research articles. Instructional and program delivery approaches was the third most frequently identified secondary research theme (9.7%). There were two research theme areas identified as the fourth most frequent secondary research theme. The themes are curriculum and program development and youth leadership and development, identified in 7.7% of the *JOE* articles. The fifth most frequently identified secondary research theme was needs assessment, identified in 6.8% of the *JOE* research articles. Secondary research theme areas identified in *JOE* research articles 3.5% or less are identified in the table below.

Table 36

Secondary Research Themes Identified in the Journal of Extension 1997–2006 (N = 548, 42 secondary research themes)

Secondary Theme	<i>f</i>	<i>P</i>
Food, Agriculture, Natural Resources, Health, & Family	78	14.2
Evaluation	67	12.2
Instructional & Program Delivery Approaches	53	9.7
Curriculum & Program Development	42	7.7
Youth Leadership & Development	42	7.7
Needs Assessment	37	6.8
Institutional Organization & Institutionalization	19	3.5
Collaborations, Partnerships, & Coalitions	14	2.6
Diversity (culture, ethnicity, gender)	14	2.6
Information Sources & Technology	11	2.0
Leadership Management	11	2.0
Accountability	10	1.8
Quality of Life & Life Skills	10	1.8
Skill Development & Competencies	10	1.8
Consumer/Audience Response & Analysis	9	1.6

Table 36 (continued)

Secondary Theme	<i>f</i>	<i>P</i>
Policy Issues	9	1.6
Community Development & Leadership	8	1.5
Distance Education	8	1.5
Leadership Development	8	1.5
Research (methods and models)	8	1.5
Funding (resource development/needs)	7	1.3
Volunteer Development & Leadership	7	1.3
Organizational Development & Leadership	6	1.1
Career Development & Assessment	5	0.9
Communication Management	5	0.9
Diffusion of Innovations	5	0.9
Formal & Informal Teaching Approaches	5	0.9
Marketing & Promotion	5	0.9
Professional Development	5	0.9
Appropriateness of Education	4	0.7
Risk & Crisis Communications	4	0.7
Service & Experiential Learning	4	0.7
Business/Employee Management & Expansion	3	0.5
Processes, Principles, & Styles of Learning	3	0.5
Teacher Preparation & Competence	3	0.5
Communications of Scholarship	2	0.4
Electronic Media	2	0.4
Agricultural Literacy	1	0.2
Critical Thinking	1	0.2
Globalization & Internationalization	1	0.2
Perceptions & Attitudes Assessment	1	0.2
Writing	1	0.2

Frequently Used Primary and Secondary Research Themes by Year

Table 37 outlines the frequently identified primary research themes in the *Journal of Extension* by year. Evaluation was the most frequently identified primary research theme being utilized in 12.5% (3 out of 24 articles) of the *JOE* articles in 1997.

In 1998, the most identified primary research theme was food, agriculture, natural resources, health, and family identified in 22.2% (8 out of 36 articles). Food, agriculture, natural resources, health, and family and youth leadership and development were the most frequently identified primary research theme areas at 15 % (6 out of 40 articles), in 1999. In 2000, the most frequent primary research theme was instructional and program delivery approaches at 23.7% (9 out of 38 articles). The most frequently identified primary research themes in 2001 was food, agriculture, natural resources, health, and family used 25.5% (14 out of 55 articles). In 2002, the most frequently identified primary research theme was food, agriculture, natural resources, health, and family used in 25.4% (15 out of 59 articles) of the *JOE* articles. The most frequent primary research theme was food, agriculture, natural resources, health, and family identified in 35.1% (20 out of 57 articles) of the *JOE* articles in 2003. Food, agriculture, natural resources, health and family was identified as the most frequently used primary research theme (26%), in 2004 (19 out of 73 articles). In 2005, the most utilized primary research theme was food, agriculture, natural resources, health and family used in 27.7% (23 out of 83 articles). In 2006, the most frequently identified primary research theme was food, agriculture, natural resources, health, and family used in 18.1% of the articles. (15 out of 83 articles).

Table 37

Most Identified Primary Research Themes in the Journal of Extension by Year (N = 548)

Year	Primary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Evaluation	24	3	12.5
1998	Food, Agriculture, Natural Resources, Health, and Family	36	8	22.2
1999	Food, Agriculture, Natural Resources, Health, and Family	40	6	15.0
	Youth Leadership and Development	38	9	23.7
2000	Instructional and Program Delivery Approaches	55	14	25.5
2001	Food, Agriculture, Natural Resources, Health, and Family	59	15	25.4
2002	Food, Agriculture, Natural Resources, Health, and Family	57	20	35.1
2003	Food, Agriculture, Natural Resources, Health, and Family	73	19	26.0
2004	Food, Agriculture, Natural Resources, Health, and Family	83	23	27.7
2005	Food, Agriculture, Natural Resources, Health, and Family	83	15	18.1
2006	Food, Agriculture, Natural Resources, Health, and Family			

Table 38 outlines the frequently identified secondary research themes in the *Journal of Extension* by year. Curriculum and program development was the most frequently identified secondary research theme being utilized in 16.7% (4 out of 24 articles) of the 1997 *JOE* articles. In 1998, the most frequently identified secondary research theme was evaluation which was utilized in 22.2% (8 out of 36 articles) of the *JOE* articles. Food, agriculture, natural resources, health, and family was the most frequently identified secondary research theme utilized in 22.5% (9 out of 40 articles), in 1999. In 2000, the most frequently used secondary research themes were food,

agriculture, natural resources, health, and family and evaluation, utilized 15.8% (6 out of 38 articles). Instructional and program delivery approaches was the most frequently identified secondary research theme being utilized in 18.2% (10 out of 55 articles) of the *JOE* articles during 2001. In 2002, food, agriculture, natural resources, health, and family and instructional and program delivery approaches were the most frequently identified secondary research theme areas, each were used 16.9% (10 out of 59 articles). In 2003, the most frequent secondary research theme was evaluation, utilized 12.3% (7 out of 57 articles). Curriculum and program development was the most frequent secondary research theme identified at 19.2% (14 out of 73 articles), in 2004. In 2005, the most utilized secondary research theme was food, agriculture, natural resources, health and family used in 12% (10 out of 83 articles) of the articles. In 2006, food, agriculture, natural resources, health and family was the most frequently identified secondary research theme utilized in 24.1% (20 out of 83 articles) of the *Journal of Extension* articles.

Table 38

Most Identified Secondary Research Themes in the Journal of Extension by Year (N = 548)

Year	Secondary Research Theme	N	f	P
1997	Curriculum and Program Development	24	4	16.7
1998	Evaluation	36	8	22.2
1999	Food, Agriculture, Natural Resources, Health, and Family	40	9	22.5
2000	Food, Agriculture, Natural Resources, Health, and Family			
	Evaluation	38	6	15.8
2001	Instructional and Program Delivery Approaches	55	10	18.2
2002	Food, Agriculture, Natural Resources, Health, and Family			
	Instructional and Program Delivery Approaches	59	10	16.9
2003	Evaluation	57	7	12.3
2004	Curriculum and Program Development	73	14	19.2
2005	Food, Agriculture, Natural Resources, Health, and Family	83	10	12.0
2006	Food, Agriculture, Natural Resources, Health, and Family	83	20	24.1

Prolific Authorship

The prolific authors identified in the *Journal of Extension*, 0.2% or more of the total authors and 0.5% or total articles, are identified in Table 39. There were 1,518 *JOE* authors in the 548 analyzed articles. Rama Radhakrishna was the most prolific author in *JOE*, authoring or co-authoring 11 of the 548 articles (2.0%) between 1997 and 2006. Radhakrishna was the most prolific author of all *JOE* authors cited in the 10-year period (11 out of 1,518 authors). Dale Safrit was the second most prolific author in *JOE* authoring or co-authoring 1.8% of the total articles. Thomas Blaine was the third most

prolific author in *JOE*, authoring or co-authoring 1.5% of the total published articles.

James Lindner authored or co-authored 1.3% of the articles. The fifth most prolific authors were Claudia Mincemoyer and Barbara O’Neill (1.1%). Additional prolific *JOE* authors are identified in the following table.

Table 39

Prolific Authorship in the Journal of Extension 1997 – 2006 (N of Authors = 1,518, N of Total Articles = 548)

Author	<i>f</i>	<i>P</i> of Total Authors	<i>P</i> of Total Articles
Radhakrishna, Rama B.*	11	0.72	2.0
Safrit, R. Dale	10	0.66	1.8
Blaine, Thomas W.	8	0.53	1.5
Lindner, James R.*	7	0.46	1.3
Mincemoyer, Claudia C.	6	0.39	1.1
O’Neill, Barbara	6	0.39	1.1
Arnold, Mary E.	5	0.33	0.9
Culp, Ken, III	5	0.33	0.9
Ferrari, Theresa M.	5	0.33	0.9
Ingram, Patreese D.*	5	0.33	0.9
Kelsey, Timothy W.	5	0.33	0.9
Muske, Glenn	5	0.33	0.9
Parsons, Robert L.	5	0.33	0.9
Scheer, Scott D.	5	0.33	0.9
Boyd, Barry L.*	4	0.26	0.7
Duncan, Stephen F.	4	0.26	0.7
Fritz, Susan*	4	0.26	0.7
Hanson, Gregory D.	4	0.26	0.7
Kelsey, Kathleen D. *	4	0.26	0.7
Kiernan, Nancy Ellen	4	0.26	0.7
Lodl, Kathleen A.	4	0.26	0.7
Mariger, Stanley Christian	4	0.26	0.7
Nieto, Ruben D.	4	0.26	0.7
Perkins, Daniel F.	4	0.26	0.7
Rusk, Clinton P.	4	0.26	0.7
Siedl, Andrew	4	0.26	0.7
Talbert, B. Allen*	4	0.26	0.7

Table 39 (continued)

Author	<i>f</i>	<i>P</i> of Total Authors	<i>P</i> of Total Articles
Anderson, Stephen A.	3	0.20	0.5
Balschweid, Mark A. *	3	0.20	0.5
Briers, Gary E. *	3	0.20	0.5
Boleman, Chris T. *	3	0.20	0.5
Conklin, Nikki L.	3	0.20	0.5
Cox, Kathryn J.	3	0.20	0.5
Drake, David	3	0.20	0.5
Ferry, Natalie M.	3	0.20	0.5
Futris, Tom G.	3	0.20	0.5
Gallagher, Tom	3	0.20	0.5
Garst, Barry A.	3	0.20	0.5
Germain, René H.	3	0.20	0.5
Govindasamy, Ramu	3	0.20	0.5
Hill, George	3	0.20	0.5
Hughes, Glen H.	3	0.20	0.5
Israel, Glenn D. *	3	0.20	0.5
Italia, John	3	0.20	0.5
Jones, Jo M.	3	0.20	0.5
Kelley, Kathleen M.	3	0.20	0.5
King, Robert N.	3	0.20	0.5
Londo, Andrew J.	3	0.20	0.5
Mahler, Robert L.	3	0.20	0.5
Maretzki, Audrey N.	3	0.20	0.5
Meyer, Mary	3	0.20	0.5
Muhammad, Safhar	3	0.20	0.5
Mustain, R. David	3	0.20	0.5
Nestor, Patrick I.	3	0.20	0.5
Place, Nick T. *	3	0.20	0.5
Schmiesing, Ryan J. *	3	0.20	0.5
Seevers, Brenda S. *	3	0.20	0.5
Sinasky, Meghan E.	3	0.20	0.5
Smith, Martin H.	3	0.20	0.5
Tegege, Fisseha	3	0.20	0.5
Thomson, Joan S. *	3	0.20	0.5
Wingenbach, Gary J. *	3	0.20	0.5

* Faculty members in the Agricultural Education discipline

Research Methods

Research methods utilized in the *Journal of Extension* are identified in Table 40. Quantitative research methods were the most common (67.9%), followed by mixed methods (quantitative and qualitative) (16.9%), and the least frequently used research methods were qualitative methods (15.1%).

Table 40

Research Methods Used in the Journal of Extension 1997 – 2006 (N = 548)

Method	<i>f</i>	<i>P</i>
Quantitative	372	67.9
Qualitative	83	15.1
Mixed Methods	93	16.9

Research method types utilized in the 548 articles published in the *Journal of Extension* are outlined in Table 41. Survey methods were the most frequent research method types used (38.8%). Evaluation research was utilized in 26.4% of the analyzed *JOE* articles. The third most common research type was experimental research, 13.1%. Interviews were used in 6.4% of the *JOE* articles. Focus group methods were identified in 3.6% of the research. Correlational research was utilized in 2.4% of the *JOE* articles. Additional research method types utilized in *JOE* research articles, between 1997 and 2006, 1.5% or less are identified in the table below.

Table 41

Research Method Types Used in the Journal of Extension 1997 – 2006 (N = 548)

Method Type	<i>f</i>	<i>P</i>
Survey	213	38.8
Evaluation	144	26.4
Experimental	72	13.1
Interviews	35	6.4
Focus Group	20	3.6
Correlation	13	2.4
Surveys and Interviews	8	1.5
Historical	6	1.1
Survey and Focus Groups	6	1.1
Content Analysis	5	0.9
Interviews and Focus Groups	5	0.9
Delphi	4	0.7
Ex Post Facto	3	0.5
Case Study	3	0.5
Open-ended Questions/Reflections	3	0.5
Holistic	2	0.4
Survey with Open-ended Questions	2	0.4
Interviews with Referential Adequacy Material	2	0.4
Survey and Case Study	1	0.2
Survey and Observations	1	0.2

Cited Referenced Authors from the Peer Discipline Areas of AGED

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the *Journal of Leadership Education* were identified in the field study as premier research journal outlets in agricultural education. Each of these journals supports the broad contexts of the peer discipline areas in agricultural education. To better understand the

scope of the discipline citing its own works a content analysis was completed on the cited referenced works in the *Journal of Extension*.

Journal of Agricultural Education

There were 38 cited referenced works from the *Journal of Agricultural Education (JAE)* represented in the *Journal of Extension*. Lindner, Murphy, and Briers (2001) were identified as the most frequently cited referenced *JAE* authors cited in *JOE*, being referenced in 15.8%. The second most frequently cited referenced *JAE* author was Culp (1997) cited 10.5% in the *Journal of Extension*. Table 42 identifies cited *JAE* authors referenced in *JOE* 5.3% or more.

Table 42

Frequently Cited Journal of Agricultural Education Authors Referenced in the Journal of Extension 1997 – 2006 (N = 38)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	6	15.8
Culp, K., III. (1997)	4	10.5
Berrio, A. A., & Henderson, J. L. (1998)	2	5.3
Boyd, B. L. (2003)	2	5.3
Culp, K. III, (1996)	2	5.3
Deppe, C. A., & Culp, K., III (2001)	2	5.3
Hillison, J. (1996)	2	5.3
Riesenberg L. E., & Gor, C.O.(1989)	2	5.3
Rohs, F. R. (1990)	2	5.3
Seevers, B. S., Dormody, T. J., & Clason, D. L. (1995)	2	5.3

Journal of International Agricultural and Extension Education

The *Journal of Extension* cited referenced authors from the *Journal of International Agricultural and Extension Education (JIAEE)* six times in the 10-year period. Mattocks, D., & Steele, R. (1994) were cited twice. The additional four authors were referenced once between 1997 and 2006.

Journal of Extension

Table 43 contains the frequently cited referenced *Journal of Extension* authors cited three times or more (0.4%), in the *Journal of Extension*, between 1997 and 2006. There were 773 cited referenced works from the *Journal of Extension (JOE)* represented in the *Journal of Extension*. Miller and Smith (1983) were the most frequently cited referenced *Journal of Extension* authors in *JOE*. Their article was cited in 2.6% of the referenced *JOE* articles. There were two groups of authors indicated as the second most frequently cited referenced *JOE* authors. The authors were: Boyd, Herring, and Briers (1992) and Rockwell and Kohn (1989) (1.7%). Tennessen, PonTell, Romine, and Motheral (1997) were the third most cited referenced *JOE* authors being cited in 1.3% of the articles. Trede and Whitaker (1998) were the fourth most frequently cited referenced *JOE* authors (1.0%). The fifth most frequently cited *JOE* authors were Rouse and Clawson (1992) referenced in 0.9% of the *JOE* authors.

Table 43

*Frequently Cited Journal of Extension Authors Referenced in the Journal of Extension
1997 – 2006 (N = 773)*

<i>JOE</i> Author	<i>f</i>	<i>P</i>
Miller, L. E., & Smith, K. L. (1983)	20	2.6
Boyd, B. L., Herring, D. R., & Briers, G. E. (1992)	13	1.7
Rockwell, S. K., & Kohn, H. (1989)	13	1.7
Tennessee, D. J., PonTell, S., Romine, V., & Motheral, S. W. (1997)	10	1.3
Trede, L. D., & Whitaker, S. (1998)	8	1.0
Rouse, S. B., & Clawson, B. (1992)	7	0.9
Cantrell, J., Heinshon, A. L., & Doeblen, M. K. (1989)	6	0.7
Lippert, R. M., Plank, O., Camberato, J., & Chastain, J. (1998)	6	0.7
SeEVERS, B. S., & Dormody, T. J. (1995)	6	0.7
Kelsey, T. W., & Mincemoyer, C. C. (2001)	5	0.6
Penrod, K. M. (1991)	5	0.6
Radhakrishna, R. B., & Thomson, J. S. (1996)	5	0.6
Schneider, R. L., & Smallidge P. J. (2000)	5	0.6
Astroth, K. (1996)	4	0.5
Decker, D., & Yerka, B. L. (1990)	4	0.5
Garst, B. A., & Bruce, F. A. (2003)	4	0.5
Hanson, G. D., Parsons, R. L., Musser, W., & Power, L. (1998)	4	0.5
Hiel, E. R., & Herrington, D. (1997)	4	0.5
Hoover, T., & Connor, N. J. (2001)	4	0.5
Muske, G., Goetting, M., & Vukonich, M. (2001)	4	0.5
O'Neill, B. (1999)	4	0.5
Suvedi, M., Knight Lapinski, M., & Campo, S. (2000)	4	0.5
Shepard, R. (2002)	4	0.5
Warner, P. D., Christenson, J. A., Dillman, D. A., & Salant, P. (1996)	4	0.5
Warnock, P. (1992)	4	0.5
Braker, M. J., Leno, J. R., Pratt, C. C., & Grobe, D. (2000)	3	0.4
Cobourn, J., & Donaldson, S. (1997)	3	0.4
Cooper, A. W., & Graham, D. L. (2001)	3	0.4
Culp, K., III, & Schwartz, V. J. (1999)	3	0.4
Downing, A. K., & Finley, J. C. (2005)	3	0.4
Drost, D., Long, G., Wilson, D., Miller, B. W., & Campbell, W. (1996)	3	0.4

Table 43 (continued)

<i>JOE</i> Author	<i>f</i>	<i>P</i>
Gallagher, T. J. (2002)	3	0.4
Gibson, J. D., & Hillison, J. (1994)	3	0.4
Guy, S. M., & Rogers, D. L. (1999)	3	0.4
Iddings, R. K., & Apps, J. W. (1992)	3	0.4
Johns, M. J., Moncloa, F., & Gong, E. J. (2000)	3	0.4
Jones, J. (1992)	3	0.4
King, D. A., & Boehlje, M. D. (2000)	3	0.4
Laughlin, K. M., & Schmidt, J. L. (1995)	3	0.4
Londo, A. J., & Monaghan, T. A. (2002)	3	0.4
Meier, H. A. (1989)	3	0.4
Mincemoyer, C. C., & Thomson, J. S. (1998)	3	0.4
Nieto, R. D., Schaffner, D., & Henderson, J. L. (1997)	3	0.4
Radhakrishna, R. (2002)	3	0.4
Schrock, D. S., Meyer, M., Ascher, P., & Snyder, M. (2000)	3	0.4
Schauber, A., Aldrich-Markham, S., Olsen, J., Gredler, G., Olsen, P., & Reichenbach, M. (1998)	3	0.4
Schrock, D. S., Meyer, M., Ascher, P., & Snyder, M. (2000)	3	0.4
Seidl, A. (2001)	3	0.4
Simonson, D. L., & Pals, D. A. (1990)	3	0.4
Smith, M. H., & Enfield, R. P. (2002)	3	0.4
Snider, A. (1985)	3	0.4
Stone, B.G., & Bieber, S. (1997)	3	0.4
Ukaga, O., Reichenbach, M. R., Blinn, C. R., Zak, D. M., Hutchinson, W. D., & Hegland, N. J. (2002)	3	0.4
Van Horn, B. E., Flanagan, C. A., & Thomson, J. S. (1999)	3	0.4
Ward, C. K. (1996)	3	0.4
Weber, J. A., & McCullers, J. C. (1986)	3	0.4
Wolford, M., Cox, K., & Culp, K., III. (2001)	3	0.4

North American Colleges and Teachers of Agriculture Journal

In the *Journal of Extension*, there were five cited references made to the *North American Colleges and Teachers of Agriculture Journal (NACTA)* during the 10-year period. The cited referenced authors were referenced once (20%). The authors were: Coulter, K. J. (1985); Eversole, D. E. (1990); Rudd, R., Baker, M., & Hoover, T. (1998); Seevers, B. S., & Foster, B. B. (2003); and William, R. D. (2002).

Journal of Applied Communications

There were 19 cited referenced authors from the *Journal of Applied Communications (JAC)* in the *Journal of Extension*, during 1997 to 2006. Suvedi, M., Campo, S., & Lapinski, M. K. (1999) were the most frequently cited referenced *JAC* authors in *JOE*. The article was cited in 15.8% of the referenced *JAC* articles. Mesecher, C. (1995) and Patterson, J., & Wykes T. (1992) were the second most frequently cited referenced *JAC* authors, both *JAC* articles were referenced 10.5% in *JOE*. The additional twelve cited referenced *JAC* authors were referenced once in the *Journal of Extension*.

Journal of Leadership Education

In the 548 *Journal of Extension* articles, there were no references made to the *Journal of Leadership Education*.

Prolific Citations of Premier AGED Journal Authors in JOE

In the *Journal of Extension*, there were 840 cited references to the six premier agricultural education journals, from 1997 to 2006. The most frequently cited referenced premier AGED authors were Miller and Smith (1983) for their work cited from the *Journal of Extension*. Of all cited referenced work, from the premier AGED journals,

Miller and Smith's work was cited in 2.4%. Boyd, Herring, and Briers (1992) and Rockwell and Kohn (1989) were cited 1.5% in the comprise premier AGED journals. In 1997, Tennessen, PonTell, Romine, and Motheral, in *JOE*, were the third most frequently cited referenced premier AGED journal authors (1.2%). Table 44 contains a list of frequently cited referenced premier AGED journal authors who were cited 0.6% or more in the *Journal of Extension*.

Table 44

Frequently Cited Referenced AGED Journal Authors in the Journal of Extension 1997 – 2006 (N = 840)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Miller, L., & Smith, K. (1983)	<i>JOE</i>	20	2.4
Boyd, B. L., Herring, D. R., & Briers, G. E. (1992)	<i>JOE</i>	13	1.5
Rockwell, S. K., & Kohn, H. (1989)	<i>JOE</i>	13	1.5
Tennessen, D. J., PonTell, S., Romine, V., & Motheral, S. W. (1997)	<i>JOE</i>	10	1.2
Trede, L. D., & Whitaker, S. (1998)	<i>JOE</i>	8	0.9
Rouse, S. B., & Clawson, B. (1992)	<i>JOE</i>	7	0.8
Cantrell, J., Heinshon, A. L., & Doeblner, M. K. (1989)	<i>JOE</i>	6	0.7
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAE</i>	6	0.7
Lippert, R. M., Plank, O., Camberato, J., & Chastain, J. (1998)	<i>JAE</i>	6	0.7
Seevers, B. S., & Dormody, T. J. (1995)	<i>JOE</i>	5	0.7
Kelsey, T. W., & Mincemoyer, C. C. (2001)	<i>JOE</i>	5	0.6
Penrod, K. M. (1991)	<i>JOE</i>	5	0.6
Radhakrishna, R. B., & Thomson, J. S. (1996)	<i>JOE</i>	5	0.6
Schneider, R. L., & Smallidge P. J. (2000)	<i>JOE</i>	5	0.6

Frequently Cited Referenced Works

Referenced work adds to understanding and the literature base of the agricultural education discipline. In an effort to better understand where the discipline is securing information, to support the contexts of the peer discipline areas in agricultural education, the research used content analysis to analyze cited referenced books and/or texts; other journals (not identified as premier AGED journals in the field study); proceedings, conferences, and meetings; other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and web pages. To better understand the scope of the discipline works cited in the above mentioned areas were analyzed in the *Journal of Extension*.

Books/Texts

The *Journal of Extension* cited referenced books and texts 1,942 times. Content analysis was used to determine the most frequently cited books and texts in the *Journal of Extension*. Books with multiple edition and publication dates are noted in the following table. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method*, which was cited in 2.99% of the total *JOE* book citations. The second most frequently cited referenced book was Patton's (1990) *Qualitative Evaluation and Research Methods*, which was referenced 3.09%. Rogers' (2003) *Diffusion of Innovations* was the third most frequently cited referenced book (0.82%). The fourth most frequently cited referenced book was Krueger's (1994) *Focus Groups: A Practical Guide for Applied Research* (0.62%). Seevers, Graham, Gamon, and Conklin's (1997) book titled *Education through Cooperative Extension* was

the fifth most frequently cited referenced book being cited 0.57%. A list of frequently cited referenced books and texts identified 0.26% or more, in the *Journal of Extension*, are identified in Table 45.

Table 45

Frequently Cited Books and Texts in the Journal of Extension 1997 – 2006 (N = 1,942)

Book and Text	<i>f</i>	<i>P</i>
Dillman, D. A. (2000; 1978). Mail and internet surveys: The tailored design method (2nd ed./1st ed.). New York: John Wiley & Sons, Inc.	58	2.99
Patton, M. Q. (1990). Qualitative evaluation and research methods (2nd ed.). Newbury Park, CA: Sage Publications.	17	0.88
Rogers, E. M. (2003). Diffusion of innovations (5th ed.). New York, NY: Free Press.	16	0.82
Krueger, R. A. (1994). Focus groups: A practical guide for applied research (3rd ed.). Thousand Oaks, CA: Sage Publications.	12	0.62
Seevers, B., Graham, D., Gamon, J., & Conklin, N. (1997). Education through Cooperative Extension. Albany, NY: Delmar Publishers.	11	0.57
Miles, M. B., & Huberman, A. B. (1994). Qualitative data analysis: A sourcebook of new methods. Beverly Hills, CA: Sage Publications.	10	0.51
SAS (1990). SAS user's guide: Statistics. Cary, NC: SAS Institute Inc.	9	0.46
Ary, D., Jacobs, L. C., & Razavieh, A. (2002). Introduction to research in education. (6th ed.) Belmont, CA: Wadsworth.	9	0.46
Davis, J. A. (1971). Elementary survey analysis. Englewood, NJ: Prentice-Hall.	8	0.41
Norusis, M. J. (1993). SPSS for windows: Base system user's guide. Chicago: SPSS Inc.	8	0.41
Salant, P., & Dillman, D. A. (1994). How to conduct your own survey. New York: John Wiley & Sons, Inc.	8	0.41

Table 45 (continued)

Book and Text	<i>f</i>	<i>P</i>
Strauss, A., & Corbin, J. (1990). Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park, CA: Sage.	8	0.41
Babbie, E. (1992). The Practice of social research. Belmont, CA: Wadsworth Publishing Company.	7	0.36
Benson, P. L. (1997). All kids are our kids: What communities must do to raise caring and responsible children and adolescents. San Francisco: Jossey-Bass Publishers.	7	0.36
Hendricks, P. A. (1996). Developing youth curriculum using the Targeting Life Skills model: Incorporating developmentally appropriate learning opportunities to assess impact of life skill development. Ames, IA: Iowa State University Extension.	7	0.36
Nunnally, J. C. (1978). Psychometric theory. (2nd ed.). New York: McGraw-Hill.	7	0.36
Eccles, J., & Gootman, J.A. (2002). Community programs to promote youth development. Washington, D.C.: National Academy Press.	6	0.31
Gall, M. D., Borg, W. R., & Gall, J. P. (1996). Educational research: An introduction (6th ed.). White Plains, NY: Longman.	6	0.31
Lerner, R. M. (1995). America's youth in crisis: Challenges and options for programs and policies. Thousand Oak, CA: Sage.	6	0.31
Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Beverly Hills, CA: Sage Publications.	6	0.31
Patton, M. (1997). Utilization-focused evaluation (3rd ed.). Thousand Oaks, CA: Sage Publications.	6	0.31
Rasmussen, W. D. (1989). Taking the university to the people: Seventy-five years of Cooperative Extension. Ames: Iowa State University Press.	6	0.31
SPSS. (2000). SPSS. Application guide (Base 10.0). SPSS Inc. Chicago, IL.	6	0.31
Borg, W. R., & Gall, M. D. (1989). Educational research: An introduction (5th ed.). White Plains, NY: Longman	5	0.26

Table 45 (continued)

Book and Text	<i>f</i>	<i>P</i>
Fisher, J. C., & Cole, K. M. (1993). Leadership and management of volunteer programs: A guide for volunteer administrators. San Francisco, CA: Jossey-Bass Publishers.	5	0.26
Glaser, B. G., & Strauss, A. L. (1967). The discovery of grounded theory. Hawthorne, NY: Aldine.	5	0.26
Senge, P. M. (1990). The fifth discipline. The art and practice of the learning organization. New York: Doubleday Publishers.	5	0.26

Journals

The *Journal of Extension* cited referenced journals, other than those identified as premier AGED journals, 1,545 times. Journals were analyzed to determine journals most frequently referenced in the *Journal of Extension*. The most frequently cited referenced journal, in *JOE*, was the *Journal of the American Dietetic Association*. The journal was referenced 3.11%. The second most frequently cited referenced journal was *HortTechnology*, identified 2.20%. *Journal of Nutrition Education* was referenced 1.55%, making it the third most frequently cited referenced journal. The *American Journal of Agricultural Economics* and the *Wildlife Society Bulletin* were identified as the fourth most frequently cited journals (1.49%). The fifth most frequently cited referenced journal, in *JOE*, was *Family Relations* (1.42%). A list of frequently cited referenced journals identified 0.39% or more (not including the identified premier AGED journals), in the *Journal of Extension*, are identified in Table 46.

Table 46

Frequently Cited Journals in the Journal of Extension 1997 – 2006 (N = 1,545)

Other Journal	<i>f</i>	<i>P</i>
Journal of the American Dietetic Association	48	3.11
HortTechnology	34	2.20
Journal of Nutrition Education	24	1.55
American Journal of Agricultural Economics	23	1.49
Wildlife Society Bulletin	23	1.49
Family Relations	22	1.42
Journal of Volunteer Administration	19	1.23
Journal of Environmental Education	17	1.10
American Journal of Alternative Agriculture	16	1.04
Journal of Forestry	16	1.04
Journal of Soil and Water Conservation	14	0.91
Journal of Family and Consumer Sciences	12	0.78
Journal of the American Medical Association	12	0.78
Pediatrics	11	0.71
American Journal of Public Health	10	0.65
Child Development	10	0.65
Educational and Psychological Measurement	10	0.65
Evaluation Review	9	0.58
Journal of Community Psychology	9	0.58
Journal of Marriage and the Family	9	0.58
Journal of Personality and Social Psychology	9	0.58
Journal of the Community Development Society	9	0.58
Human Relations	8	0.52
Journal of Applied Psychology	8	0.52
Journal of Arboriculture	8	0.52
Journal of Educational Leadership	8	0.52
Land Economics	8	0.52
Adolescence	7	0.45
Agribusiness	7	0.45
American Journal of Evaluation	7	0.45
Family Economics and Nutrition Review	7	0.45
Food Technology	7	0.45
HortScience	7	0.45
Journal of Nutrition	7	0.45
Journal of Production Agriculture	7	0.45
Phi Delta Kappan	7	0.45
Rural Sociology	7	0.45
Science	7	0.45

Table 46 (continued)

Other Journal	<i>f</i>	<i>P</i>
Academy of Management Journal	6	0.39
Adult Education Quarterly	6	0.39
Applied Developmental Science	6	0.39
Financial Counseling and Planning	6	0.39
Journal of Early Adolescence	6	0.39
Journal of Economic Entomology	6	0.39
Journal of Educational Computing Research	6	0.39
Journal of Educational Psychology	6	0.39
Journal of Research in Science Teaching	6	0.39
Psychological Reports	6	0.39
Social Work	6	0.39
The American Journal of Distance Education	6	0.39

Proceedings, Conferences, and Meetings

The *Journal of Extension* cited referenced proceedings, conferences, and/or meetings 168 times. The most frequently cited referenced proceeding, conference, and/or meeting was the *National Agricultural Education Research Conference*. This conference proceeding was referenced 8.3%. The *National Association of Extension 4-H Agents Conference*, the *Annual Meeting of the American Evaluation Association*, and the *Association for International Agricultural and Extension Education* were identified as the second most frequently cited referenced proceeding, conference, and/or meeting, being cited 3.6%. The third most frequently cited referenced proceeding, conference, and/or meeting, in *JOE*, were the *National Small Farm Conference* and *Western Regional Home Management-Family Economics Educators Proceedings*. The conference and proceeding were referenced 2.4%. Table 47 contains a list of frequently

cited referenced proceeding, conference, and/or meeting identified 1.8% or more in the *Journal of Extension*, from 1997 to 2006.

Table 47

*Frequently Cited Proceedings, Conferences, and Meetings in the Journal of Extension
1997 – 2006 (N = 168)*

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
National Agricultural Education Research Conference	14	8.3
National Association of Extension 4-H Agents Conference	6	3.6
Annual Meeting of the American Evaluation Association	6	3.6
Association for International Agricultural and Extension Education	6	3.6
National Small Farm Conference	4	2.4
Western Regional Home Management-Family Economics Educators Proceedings	4	2.4
American Evaluation Association	3	1.8
National Extension Wildlife, Fisheries, and Aquaculture Conference	3	1.8
Proceedings of Symposium on Non-Industrial Private Forests: Learning from the past, prospects for the future	3	1.8

Other Works

The *Journal of Extension* cited referenced other works 672 times. Journal articles were analyzed to determine the types (dissertations, manuscripts, newspapers, government documents, etc.) and most frequent citations of works, in the *Journal of Extension*. A list of frequently cited referenced other works identified 1.0% or more, in the *Journal of Extension*, are identified in Table 48. The most frequently cited referenced

other works were unpublished doctoral dissertations, cited 10.9%. The second most frequently cited referenced other works were Extension manuscripts, referenced 10.3%. University manuscripts were the third most frequently cited other works (8.6%). The fourth most frequently cited referenced other works were census and other government documents cited 6.7%. Various magazines were the fifth most cited referenced other works, cited 6.5%. The Camping Magazine was the most cited magazine (14 out of 44 magazines). Unpublished Master of Science theses were referenced 6.4%. The seventh most cited referenced other works were ERIC documents, policy and laws, and unpublished manuscripts or reports (5.4%). Additional other works cited 4.6% or less, in the *Journal of Extension*, are identified in the table below.

Table 48

Frequently Cited Other Works in the Journal of Extension 1997 – 2006 (N = 672)

Other Work	<i>f</i>	<i>P</i>
Unpublished Doctoral Dissertation	73	10.9
Extension Manuscript	69	10.3
University Manuscript	58	8.6
Census/Government Documents	45	6.7
Magazines	44	6.5
Unpublished M.S. Thesis	43	6.4
ERIC Documents	36	5.4
Policy and Laws	36	5.4
Unpublished Manuscripts or Reports	36	5.4
Newspapers	31	4.6
Manuscript Submitted for Publication	20	3.0
SPSS Version (Various) for Windows [Computer Software]. (Various Years). Chicago, IL: SPSS, Inc.	14	2.1
Annual or Final Reports	14	2.1
Raw Data	10	1.5
Personal Communication	9	1.3

Table 48 (continued)

Other Work	<i>f</i>	<i>P</i>
SAS Institute. (Various Years). SAS System for Windows, Version 9. Cary, NC: SAS Institute. Software	7 7	1.0 1.0

Web Pages

The *Journal of Extension* cited referenced web pages 516 times, as identified in Table 49. The most frequently cited referenced web pages were .edu websites, referenced 32.0%. The second most frequently cited referenced web pages were .gov sites referenced 31.8%. The third most frequently cited referenced web pages, in *JOE*, was .org sites; referenced 25.0%. Web pages with .com indexes were referenced 5.8%. Web pages with .us indexes were referenced 2.1%. The sixth most frequently cited referenced web pages, in *JOE*, was .net sites; referenced 1.2%. Other complied web pages including: .biz, .ca, .info, .nl, and .mil sites were referenced in 2.1% of the total *JOE* web page cited references.

Table 49

Frequently Cited Web Pages in the Journal of Extension 1997 – 2006 (N = 516)

Web page	<i>f</i>	<i>P</i>
.edu	165	32.0
.gov	164	31.8
.org	129	25.0
.com	30	5.8
.us	11	2.1
.net	6	1.2
Other (.biz, .ca, .info, .nl, .mil)	11	2.1

Journal of Applied Communications

The *Journal of Applied Communications (JAC)* was identified in the field study as being a premier agricultural education research journal. Forty-one percent of respondents indicated that *JAC* was representative of the agricultural education discipline. Articles in the *Journal of Applied Communications* identified as research or professional with research methodologies research, from 1997 to 2006, were analyzed in the content analysis. There were a total of 91 *JAC* articles analyzed in the 10-year period.

Primary and Secondary Research Themes

Primary research themes identified in the *Journal of Applied Communications* are identified in Table 50. There were 22 primary research theme areas identified in *JAC* in the 10-year content analysis. The most frequently identified primary research theme was information sources and technology (18.7%). The second most frequent primary research theme was communication management, identified in 14.3% of the *JAC*

research articles. Communications of scholarship was identified as the third most frequent primary research theme (9.9%). Biotechnology communications and media relations were the fourth most frequently identified primary research themes (6.2%). The fifth most frequent primary research theme was distance education, identified in 5.5% of the *JAC* research articles. Primary research theme areas identified in *JAC* research articles 4.4% or less are identified in the following table.

Table 50

Primary Research Themes Identified in the Journal of Applied Communications 1997–2006 (N = 91, 22 primary research themes)

Research Theme	<i>f</i>	<i>P</i>
Information Sources & Technology	17	18.7
Communication Management	13	14.3
Communications of Scholarship	9	9.9
Biotechnology Communications	6	6.6
Media Relations	6	6.6
Distance Education	5	5.5
Communication Technology	4	4.4
Accountability	3	3.3
Consumer/Audience Response & Analysis	3	3.3
Curriculum & Program Development	3	3.3
Electronic Media	3	3.3
Food, Agriculture, Natural Resources, Health, & Family	3	3.3
Institutional Organization & Institutionalization	3	3.3
Critical Thinking	2	2.2
Framing	2	2.2
Professional Development	2	2.2
Risk & Crisis Communications	2	2.2
Agriculture Literacy	1	1.1
Instructional & Program Delivery Approaches	1	1.1
Policy Issues	1	1.1
Processes, Principles, & Styles of Learning	1	1.1
Volunteer Development & Leadership	1	1.1

Secondary research themes identified in the *Journal of Applied Communications* are identified in Table 51. There were 30 secondary research theme areas identified in *JAC* between 1997 and 2006. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (14.3%). The second most frequent secondary research theme was information sources and technology, identified in 11.0% of the research *JAC* articles. Communication management was the third most frequently identified secondary research theme (6.6%). There were five secondary research theme areas identified as the fourth most frequently used in *JAC* research articles (4.4%). The secondary research themes were: diversity (culture, ethnicity, gender); institutional organization and institutionalization; media relations; needs assessment; and skill development and competencies. Secondary research theme areas identified in *JAC* research articles 3.3% or less are identified in the table below.

Table 51

Secondary Research Themes Identified in the Journal Applied of Communications 1997–2006 (N = 91, 30 secondary research themes)

Research Theme	<i>f</i>	<i>P</i>
Food, Agriculture, Natural Resources, Health, & Family	13	14.3
Information Sources & Technology	10	11.0
Communication Management	6	6.6
Diversity (culture, ethnicity, gender)	4	4.4
Institutional Organization & Institutionalization	4	4.4
Media Relations	4	4.4
Needs Assessment	4	4.4
Skill Development & Competencies	4	4.4
Accountability	3	3.3
Communications of Scholarship	3	3.3
Consumer/Audience Response & Analysis	3	3.3

Table 51 (continued)

Research Theme	<i>f</i>	<i>P</i>
Distance Education	3	3.3
Globalization & Internationalization	3	3.3
Instructional & Program Delivery Approaches	3	3.3
Perceptions & Attitudes Assessment	3	3.3
Writing	3	3.3
Academic Programs	2	2.2
Communication Technology	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 & Assessment	1	1.1
Community Development & Leadership	1	1.1
Curriculum & Program Development	1	1.1
Framing	1	1.1
Graphic Design	1	1.1
Leadership Development	1	1.1
Research (methods and models)	1	1.1
Risk & Crisis Communications	1	1.1

Frequently Used Primary and Secondary Research Themes by Year

Table 52 outlines the frequently identified primary research themes in the *Journal of Applied Communications* by year. Information sources and technology was the most frequently identified primary research theme being utilized in 28.6% (4 out of 14 articles) of the *JAC* articles in 1997. The most identified primary research theme was institutional organization and institutionalizations identified in 33.3% (3 out of 9 articles) of the 1998 articles. In 1999, information sources and technology was the most frequently identified primary research theme areas at 20.0% (2 out of 10 articles). In

2000, the most frequently identified primary research theme areas were communication management, communication technology, and communications of scholarship noted in 16.7% (2 out of 12 articles). The most frequently identified primary research themes in 2001 was information sources and technology used 50% (4 out of 8 articles). In 2002, the most frequently identified primary research theme was distance education used in 33.3% (2 out of 6 articles) of the *JAC* articles. The most frequent primary research theme was information sources and technology identified in 40.0% (2 out of 5 articles) of the *JAC* articles during 2003. Communication management was identified as the most frequently used primary research theme (27.3%), in 2004 (3 out of 11 articles). In 2005, the most utilized primary research themes were critical thinking and information sources and technology used in 16.7% (2 out of 12 articles) of the *JAC* articles. In 2006, all identified primary research theme areas for the year were utilized once (25.0%; 1 out of 4 articles). The primary research themes for 2006 are identified in the table below.

Table 52

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

Year	Primary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
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	Communication Management			
	Communication Technology			
	Communications of Scholarship	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	Communication Management	11	3	27.3
2005	Critical Thinking			
	Information Sources and Technology	12	2	16.7
2006	Accountability			
	Communication Management			
	Food, Agriculture, Natural Resources, Health, and Family			
	Framing	4	1	25.0

Table 53 outlines the frequently identified secondary research themes in the *Journal of Applied Communications* by year. Institutional organization and institutionalization and diversity (culture, ethnicity, gender) were the most frequently identified secondary research theme areas being utilized in 14.3% (2 out of 14 articles) of the 1997 *JOE* articles. In 1998, the most frequently identified secondary research themes were food, agriculture, natural resources, health, and family and information sources and technology which were identified in 22.2% (2 out of 9 articles) of the *JAC* articles. Information sources and technology was the most frequently identified

secondary research theme utilized in 30.0% (3 out of 10 articles), in 1999. In 2000, the most frequently used secondary research theme was food, agriculture, natural resources, health, and family, utilized in 25.0% (3 out of 12 articles) of the *JAC* articles. Food, agriculture, natural resources, health, and family was the most frequently identified secondary research theme being utilized in 25.0% (2 out of 8 articles) of the *JAC* articles during 2001. In 2002, all identified secondary research theme areas for the year were utilized once (16.7%, 1 out of 6 articles). The secondary research themes for 2002 are identified in the table below. In 2003, the most frequent secondary research theme was communication management, utilized 40.0% (2 out of 5 articles). Communication management and information sources and technology were the most frequently identified secondary research themes in 2004 (18.2%, 2 out of 11 articles). In 2005, the most utilized secondary research theme areas were food, agriculture, natural resources, health and family, funding (resource development/needs), and information sources and technology used in 16.7% (2 out of 12 articles) of the *JAC* articles. In 2006, all identified secondary research theme areas for the year were utilized once (25.0%, 1 out of 4 articles). The secondary research themes for 2006 are identified in the table below.

Table 53

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

Year	Secondary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Institutional Organization and Institutionalization Diversity (culture, ethnicity, gender)	14	2	14.3
1998	Food, Agriculture, Natural Resources, Health, and Family			
	Information Sources and Technology	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	1	16.7
2003	Communication Management	5	2	40.0
2004	Communication Management Information Sources and Technology	11	2	18.2
2005	Food, Agriculture, Natural Resources, Health, and Family Funding (resource development/needs) Information Sources and Technology	12	2	16.7
2006	Career Development and Assessment Food, Agriculture, Natural Resources, Health, and Family Framing Skill Development and Competencies	4	1	25.0

Prolific Authorship

The prolific authors identified in the *Journal of Applied Communications*, 1.4% or more of the total authors and 3.3% or more of total articles, are identified in Table 54.

There were 222 *JAC* authors in the 91 analyzed articles. Tracy Irani and Ricky Telg were the most prolific authors in the journal, authoring or co-authoring 12 of the 91 articles (13.2%) between 1997 and 2006. Irani and Telg were the most prolific authors of all *JAC* authors cited in the 10-year period (12 out of 222 authors). Lisa Lundy and Mark Tucker were the second most prolific authors in *JAC*, authoring or co-authoring 6.6% of the total articles. Kristina Boone and Amanda Ruth were the third most prolific authors, authoring or co-authoring 5.5% of the total published articles. Jim Evans authored or co-authored 4.4% of the articles. The fifth most prolific authors are identified in the following table (3.3% of the total articles).

Table 54

Prolific Authorship in the Journal of Applied Communications 1997 – 2006 (N of Authors = 222, N of Total Articles = 91)

Authors	<i>f</i>	<i>P</i> of Authors	<i>P</i> of Total Articles
Irani, Tracy A.	12	5.4	13.2
Telg, Ricky	12	5.4	13.2
Lundy, Lisa K.	6	2.7	6.6
Tucker, Mark	6	2.7	6.6
Boone, Kristina M.	5	2.3	5.5
Ruth, Amanda M.	5	2.3	5.5
Evans, Jim F.	4	1.8	4.4
Banning, Steve A.	3	1.4	3.3
Cartmell, Dwayne D., II	3	1.4	3.3
Richardson, John G.	3	1.4	3.3
Sitton, Shelly P.	3	1.4	3.3
Whaley, Sherry R.	3	1.4	3.3

Research Methods

Research methods utilized in the *Journal of Applied Communications* are identified in Table 55. Quantitative research methods were the most common (65.9%), followed by qualitative (22.0%), and the least frequently used research methods were mixed (12.1%), using both quantitative and qualitative methods.

Table 55

Research Methods Used in the Journal of Applied Communications 1997 – 2006 (N = 91)

Method	<i>f</i>	<i>P</i>
Quantitative	60	65.9
Qualitative	20	22.0
Mixed Methods	11	12.1

Research method types utilized in the 91 articles published in the *Journal of Applied Communications* are identified in Table 56. Survey methods were the most frequent research method types used (49.2%). Content analysis research was utilized in 15.4% of the analyzed *JAC* articles. The third most common research type was case study research, 9.9%. Interviews were used in 6.6% of the *JAC* articles. Evaluation, historical, and survey with open-ended questions were identified in 4.4% of the research. Experimental research was utilized in 3.3% of the *JAC* articles. Additional research method types utilized in *JAC* research articles, between 1997 and 2006, 2.2% or less are identified in the following table.

Table 56

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

Method Type	<i>f</i>	<i>P</i>
Survey	39	49.2
Content Analysis	14	15.4
Case Study	9	9.9
Interviews	6	6.6
Evaluation	4	4.4
Historical	4	4.4
Survey with Open-ended Questions	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

Cited Referenced Authors from the Peer Discipline Areas of AGED

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the *Journal of Leadership Education* were identified in the field study as premier research journal outlets in agricultural education. Each of these journals supports the broad contexts of the peer discipline areas in agricultural education. The better understand the scope of the discipline citing its own works a content analysis was completed to analyze the cited referenced works in the *Journal of Applied Communications*.

Journal of Agricultural Education

There were 36 cited referenced works from the *Journal of Agricultural Education (JAE)* identified in the *Journal of Applied Communications*. Lindner, Murphy, and Briers (2001) were the most frequently cited referenced *JAE* authors cited in *JAC*, referenced 8.3%. The second most frequently cited referenced *JAE* authors in *JAC* were referenced 5.6% and are identified in Table 57.

Table 57

Frequently Cited Journal of Agricultural Education Authors Referenced in the Journal of Applied Communications 1997 – 2006 (N = 36)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	3	8.3
Birkenholz, R. J., Harbstreit, S. R., & Law, D. A. (1990)	2	5.6
Cano, J., & Martinez, C. (1991)	2	5.6
Clason, D. L., & Dormody, T. J. (1994)	2	5.6
Rollins, T. J. (1990)	2	5.6
Rudd, R., Baker, M., & Hoover, T. (2000)	2	5.6
Torres, R. M., & Cano, J. (1995)	2	5.6
Vestal, T. A., & Briers, G. E. (2000)	2	5.6
Whittington, S. (1995)	2	5.6
Whittington, S. (2000)	2	5.6

Journal of International Agricultural and Extension Education

In the *Journal of Applied Communications*, there was one cited author referenced to the *Journal of International Agricultural and Extension Education*. The cited reference was to author Rivera, W. (1996).

Journal of Extension

Table 58 contains the frequently cited referenced *Journal of Extension (JOE)* authors cited at least twice or 5.4%, in the *Journal of Applied Communications* during the 10-year content analysis period. There were 37 cited referenced works from *JOE* identified in the *Journal of Applied Communications*. Miller and Smith (1983) were the most frequently cited referenced *Journal of Extension* authors in *JAC*. The article was cited in 16.2% of the referenced *JOE* articles. There were four authors identified as the second most frequently cited referenced *JOE* authors being cited twice (5.4%). These authors are identified in the following table.

Table 58

Frequently Cited Journal of Extension Authors Referenced in the Journal of Applied Communications 1997 – 2006 (N = 37)

<i>JOE</i> Author	<i>f</i>	<i>P</i>
Miller, L. E., & Smith, K. L. (1983)	6	16.2
Caffarella, R. S. (1982)	2	5.4
Jackson, D., & Smith, K. (1999)	2	5.4
Obahayujie, J., & Hillison, J. (1988)	2	5.4
Tennessee, D. J., PonTell, S., Romine, V., & Motheral, S. W. (1997)	2	5.4

North American Colleges and Teachers of Agriculture Journal

The *Journal of Applied Communications* cited referenced authors from the North American Colleges and Teachers of Agriculture (*NACTA*) Journal five times during the 10-year period of analysis. Each of the five *NACTA* authors were referenced once. The

references were: Diebel, P. L., McInnis, M. L., & Edge, W. D. (1998); Miller, G. (1997); Nehiley, J., & Sutherland, J. (1995); O'Kane, M., & Armstrong, J. D. (1997); and Woirhaye, J. L., & Menkhaus, D. J. (1996) (20%).

Journal of Applied Communications

There were 64 cited referenced works from the *Journal of Applied Communications (JAC)* represented in the *Journal of Applied Communications*, between 1997 and 2006. Reisner (1990) was the most frequently cited referenced *JAC* author in *JAC*. The article was cited in 6.3% of the referenced *JAC* articles. Banning and Evans (2001), Miller and Carr (1997), and Ten Eyck (2000) were the second most frequently cited referenced *JAC* authors, referenced 4.7%. Table 59 contains a list of frequently cited referenced *JAC* authors in *JAC*, cited 3.1% or more.

Table 59

Frequently Cited Journal of Applied Communications Authors Referenced in the Journal of Applied Communications 1997 – 2006 (N = 64)

<i>JAC</i> Author	<i>f</i>	<i>P</i>
Reisner, A. (1990)	4	6.3
Banning, S. A., & Evans, J. F. (2001)	3	4.7
Miller, G., & Carr, A. (1997)	3	4.7
Ten Eyck, T. A. (2000)	3	4.7
Bielema, C. L. (1997)	2	3.1
Boone, K. M., Tucker, M., & McClaskey, J. M. (2002)	2	3.1
Bruening, T. H. (1991)	2	3.1
Caldwell, A. E., & Richardson, J. G. (1995)	2	3.1
Connors, J. J., Elliot, J., and Heinze, K. (1991)	2	3.1
Donaldson, J. L., & Thompson, J. S. (1999)	2	3.1
Reisner, A. (1991)	2	3.1
Richardson, J. (1999)	2	3.1
Richardson, J. G., & Mustian, R. D. (1994)	2	3.1

Table 59 (continued)

<i>JAC</i> Author	<i>f</i>	<i>P</i>
Richardson, J. G., Clement, D. M., & Mustian, R. D. (1997)	2	3.1
Sprecker, K. J. & Rudd, R. D. (1998)	2	3.1
Suvedia, M., Campo, S., & Lapinski, M. K. (1999)	2	3.1
Sweeney, S., & Hollifield, C. A. (2000)	2	3.1
Thomas, R. E. (1996)	2	3.1
Trede, L. D., & Whitaker, S. (1998)	2	3.1

Journal of Leadership Education

There were no cited references to the *Journal of Leadership Education* in the 10-year content analysis of the *Journal of Applied Communications*.

Prolific Citations of Premier AGED Journal Authors in JAC

In the *Journal of Applied Communications*, there were 143 cited references to the six premier agricultural education (AGED) journals, from 1997 to 2006. The most frequently cited referenced premier AGED authors were Miller and Smith (1983) for their work cited from the *Journal of Extension*. Of all cited referenced work, from the premier AGED journals, Miller and Smith were cited 4.2%. Reisner (1990) was the second most frequently cited referenced premier AGED author at 2.8%. Table 60 contains a list of frequently cited referenced premier AGED journal authors who were cited 2.1% or more, in the *Journal of Applied Communications*.

Table 60

Frequently Cited Referenced AGED Journal Authors in the Journal of Applied Communications 1997 – 2006 (N = 143)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Miller, L. E., & Smith, K. L. (1983)	<i>JOE</i>	6	4.2
Reisner, A. (1990)	<i>JAC</i>	4	2.8
Banning, S. A., & Evans, J. F. (2001)	<i>JAC</i>	3	2.1
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAЕ</i>	3	2.1
Miller, G., & Carr, A. (1997)	<i>JAC</i>	3	2.1
Ten Eyck, T. A. (2000)	<i>JAC</i>	3	2.1

Frequently Cited Referenced Works

Referenced work adds to understanding and the literature base of the agricultural education discipline. In an effort to better understand where the discipline is securing information, to support the contexts of the peer discipline areas in agricultural education, the research used content analysis to analyze cited referenced books and/or texts; other journals (not identified as premier AGED journals in the field study); proceedings, conferences, and meetings; other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and web pages. To better understand the scope of the discipline works cited in the above mentioned areas were analyzed in the *Journal of Applied Communications*.

Books/Texts

The *Journal of Applied Communications* cited referenced books and texts 584 times. Content analysis was used to determine the most frequently cited books and texts

in the *Journal of Applied Communications*. Books with multiple edition and publication dates are noted in the following table. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method*, cited in 2.74% of the total JAC book citations. The second most frequently cited referenced book was Rogers' (1995) *Diffusion of Innovations* cited 1.37%. Miles and Huberman's (1994) *Qualitative Data Analysis* was referenced 1.20%. Ary, Jacobs, and Razavieh (2001) *Introduction to Research in Education*; Boone, Meisenbach, and Tucker (2000) *Agricultural Communications: Changes and Challenges*; Merriam (1998) *Qualitative Research and Case Study Applications in Education*; and Mueller (1986) *Measuring Social Attitudes* were the fourth most frequently cited referenced books (0.68%). A list of frequently cited referenced books and texts identified 0.51% or more, in the *Journal of Applied Communications*, are identified in Table 61.

Table 61

Frequently Cited Books and Texts in the Journal of Applied Communications 1997 – 2006 (N = 584)

Book and Text	<i>f</i>	<i>P</i>
Dillman, D. A. (2000; 1978). <i>Mail and Internet surveys: The tailored design method</i> (2nd ed.). New York: John Wiley & Sons, Inc.	16	2.74
Rogers, E. M. (1995; 1983). <i>Diffusion of innovations</i> (4th ed.; 3rd ed.) New York, NY: The Free Press.	8	1.37
Miles, M. B., & Huberman, A. M. (1994). <i>Qualitative data analysis</i> (2nd ed.). Thousand Oaks, CA: Sage Publications.	7	1.20
Ary, D., Jacobs, L., & Razavieh, A. (2001; 1990; 1985; 1979). <i>Introduction to research in education</i> . (6th ed.; 5th ed.; 4th ed.; 3rd ed.). Wadsworth Publishing.	4	0.68

Table 61 (continued)

Book and Text	<i>f</i>	<i>P</i>
Boone, K., Meisenbach, T., & Tucker, M. (2000). Agricultural communications: Changes and challenges. Ames, IA: Iowa State University Press.	4	0.68
Merriam, S. B. (1998). Qualitative research and case study applications in education. San Francisco: Jossey-Bass Publishers.	4	0.68
Mueller, D. J. (1986). Measuring social attitudes. New York: Teachers College Press.	4	0.68
DeFleur, M. L., & Ball-Rokeach, S. J. (1989; 1982; 1975). Theories of mass communication (4th ed.; 3rd ed.; 2nd ed.). New York: Longman.	3	0.51
Evans, J. F., & Salcedo, R. (1974). Communications in agriculture: The American farm press. Ames, Iowa: Iowa State University Press.	3	0.51
Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and-research. Reading, MA: Addison-Wesley.	3	0.51
Gallup Organization (2000). Trends in agriculture study: Large producer scorecards. Princeton, New Jersey: Gallup Organization.	3	0.51
Gitlin, T. (1980). The whole world is watching: Mass media in the making and unmaking of the New Left. Berkeley, CA: University of California Press.	3	0.51
Glaser, B. (1978). Theoretical sensitivity. Mill Valley, CA: The Sociology Press.	3	0.51
Morgan, D.L. (1997; 1988). Focus groups as qualitative research. Newbury Park, CA: Sage.	3	0.51
National Research Council. (1988). Understanding agriculture: New directions for education. Washington D.C.: National Academy Press.	3	0.51
Newcomb, L. H., McCracken, J. D., & Warmbrod, J. R. (1993). Methods of teaching agriculture (2nd ed.). Danville, IL: Interstate.	3	0.51
Pedhazur, E. J. (1982). Multiple regression in behavioral research. Fort Worth: Holt, Rinehart and Winston, Inc.	3	0.51

Journals

The *Journal of Applied Communications* cited referenced journals, other than those identified as premier AGED journals, 608 times. Journals were analyzed to determine the most frequently cited referenced journals in the *Journal of Applied Communications*. The most frequently cited referenced journal, in *JAC*, was *Journalism Quarterly*, referenced 4.11%. The second most frequently cited referenced journal was *Journal of Communication*, referenced 2.30%. The third most frequently cited referenced journals were *Journalism and Mass Communication Quarterly*, *Public Opinion Quarterly*, and *Public Relations Review* (2.14%). Two cited referenced journals were identified as the fourth most frequently cited journals, in *JAC* (1.97%). The journals were *Science Communication* and *The American Journal of Distance Education*. The fifth most identified frequently cited referenced journal was *Agriculture and Human Values*, cited 1.81%. A list of frequently cited referenced journals identified 0.66% or more (not including the identified premier AGED journals), in the *Journal of Applied Communications*, are identified in Table 62.

Table 62

Frequently Cited Journals in the Journal of Applied Communications 1997 – 2006 (N = 608)

Other Journal	<i>f</i>	<i>P</i>
Journalism Quarterly	25	4.11
Journal of Communication	14	2.30
Journalism and Mass Communication Quarterly	13	2.14
Public Opinion Quarterly	13	2.14
Public Relations Review	13	2.14
Science Communication	12	1.97
The American Journal of Distance Education	12	1.97
Agriculture and Human Values	11	1.81
ACE Quarterly	9	1.48
American Journal of Agricultural Economics	9	1.48
Educational Communications Technology Journal	6	0.99
American Journal of Clinical Nutrition	5	0.82
BioScience	5	0.82
Public Relations Quarterly	5	0.82
The Chronicle of Higher Education	5	0.82
AgBioForum	4	0.66
American Behavioral Scientist	4	0.66

Proceedings, Conferences, and Meetings

The *Journal of Applied Communications* cited referenced proceedings, conferences, and/or meetings 104 times. The most frequently cited referenced proceeding, conference, and/or meeting was the *Agricultural Communicators in Education Conference*. The conference proceeding was referenced 17.3%. The second most frequently cited referenced proceeding, conference, and/or meeting was the *National Agricultural Education Research Conference*, referenced 13.5%. The third most frequently cited referenced proceeding, conference, and/or meeting, in *JAC*, was

the *Southern Association of Agricultural Scientist Conference*. The conference was referenced 9.6%. The *International Conference of the International Federation of Science Editors* was cited 7.7% and all citations to this conference were identified in a single article. The *Southern Agricultural Education Research Conference* was the fifth most frequently identified cited referenced proceeding, conference, and/or meeting, in *JAC* (5.8%). Table 63 contains a list of frequently cited referenced proceeding, conference, and/or meeting identified 2.9% or more in the *Journal of Applied Communications* from 1997 to 2006.

Table 63

Frequently Cited Proceedings, Conferences, and Meetings in the Journal of Applied Communications 1997 – 2006 (N = 104)

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
Agricultural Communicators in Education Conference	18	17.3
National Agricultural Education Research Conference	14	13.5
Southern Association of Agricultural Scientists Conference	10	9.6
International Conference of the International Federation of Science Editors	8	7.7
Southern Agricultural Education Research Conference	6	5.8
The Association for Education in Journalism and Mass Communication	4	3.8
International Consortium on Agricultural Biotechnology Research (ICABR) Conference	3	2.9
International Meeting of Association for Communications Excellence	3	2.9

Other Works

The *Journal of Applied Communications* cited referenced other works 171 times. Journals articles were analyzed to determine the types (dissertations, manuscripts, newspapers, government documents, etc.) and most frequent citations of works, in the *Journal of Applied Communications*. A list of frequently cited referenced other works identified 1.8% or more, in *JAC* are identified in Table 64. The most frequently cited referenced other works were newspapers, cited 15.8%. The second most frequently cited referenced other works were university manuscripts and unpublished doctoral dissertations, referenced 12.3%. Unpublished Master of Science theses were the third most frequently cited other works (11.7%). The fourth most frequently cited referenced other works were unpublished manuscripts or reports cited 10.5%. Annual or final reports were the fifth most cited referenced other works, cited 5.8%. Additional other works cited 5.3% or less, in the *Journal of Applied Communications*, are identified in the table below.

Table 64

Frequently Cited Other Works in the Journal of Applied Communications 1997 – 2006
(*N = 171*)

Other Work	<i>f</i>	<i>P</i>
Newspapers	27	15.8
University Manuscript	21	12.3
Unpublished Doctoral Dissertation	21	12.3
Unpublished M.S. Thesis	20	11.7
Unpublished Manuscripts or Reports	18	10.5
Annual or Final Reports	10	5.8
ERIC Documents	9	5.3
Magazines	9	5.3
Census/Government Documents	8	4.7
Newsletter/bulletin	6	3.5
Extension Manuscript	3	1.8
Policy and Laws	3	1.8
Raw Data	3	1.8

Web Pages

The *Journal of Applied Communications* cited referenced web pages 122 times, as identified in Table 65. The most frequently cited referenced web pages were .org websites; referenced 32.0%. The second most frequently cited referenced web pages were .edu sites referenced 22.1%. The third most frequently cited referenced web pages, in *JAC*, was .gov sites referenced 21.3%. Web pages with .com indexes were referenced 20.5%. Other complied web pages including: .ie, .int, .html, and .net sites were referenced in 4.1% of the total *JAC* web page cited references.

Table 65

Frequently Cited Web Pages in the Journal of Applied Communications 1997 – 2006 (N = 122)

Web page	<i>f</i>	<i>P</i>
.org	39	32.0
.edu	27	22.1
.gov	26	21.3
.com	25	20.5
Other (.ie .int, .html, .net)	5	4.1

Journal of Leadership Education

The *Journal of Leadership Education (JOLE)* was identified in the field study as being at premier agricultural education research journal. Forty-one percent of respondents indicated that *JOLE* was representative of the agricultural education discipline. *JOLE* was first published in the summer of 2002, research articles with research methodologies, since its inception until 2006, were analyzed in the content analysis. There were a total of 45 *JOLE* articles analyzed in the 5-year period.

Primary and Secondary Research Themes

Primary research themes identified in the *Journal of Leadership Education* are identified in Table 66. There were 17 primary research theme areas identified in *JOLE* in the 10-year content analysis period. The most frequently identified primary research theme was leadership development (31.1%). The second most frequent primary research theme was leadership education, identified in 24.4% of the *JOLE* research articles. Service and experiential learning and youth leadership and development were identified

as the third most frequent primary research themes (6.7%). Volunteer development and leadership was the fourth most frequently identified primary research theme (4.4%).

Primary research theme areas identified in *JOLE* research articles 2.2% are listed in the table below.

Table 66

Primary Research Themes Identified in the Journal of Leadership Education 2002–2006 (N = 45, 17 primary research themes)

Research Theme	<i>f</i>	<i>P</i>
Leadership Development	14	31.1
Leadership Education	11	24.4
Service & Experiential Learning	3	6.7
Youth Leadership & Development	3	6.7
Volunteer Development & Leadership	2	4.4
Academic Programs	1	2.2
Career Development & Assessment	1	2.2
Communication Management	1	2.2
Diffusion of Innovation	1	2.2
Evaluation	1	2.2
Formal & Informal Teaching Approaches	1	2.2
Instructional & Program Delivery Approaches	1	2.2
Leadership Management	1	2.2
Needs Assessment	1	2.2
Professional Development	1	2.2
Research (methods and models)	1	2.2
Teacher Preparation & Competence	1	2.2

Secondary research themes identified in the *Journal of Applied Communications* are identified in Table 67. There were 23 secondary research theme areas identified in *JOLE* since its first publication in 2002 until 2006. The most frequently identified

secondary research theme was leadership education (17.8%). The second most frequent secondary research themes were academic programs and leadership development, identified in 8.9% of the *JOLE* research articles. Evaluation and organizational development and leadership were the third most frequently identified secondary research themes (6.7%). There were five secondary research theme areas identified as the fourth most frequently used in *JAC* research articles (4.4%). The secondary research theme areas were: accountability, diversity (culture, ethnicity, gender), formal and informal teaching approaches, skill development and competencies, and youth leadership and development. Secondary research theme areas identified in *JOLE* research articles 2.2% are identified in the table below.

Table 67

Secondary Research Themes Identified in the Journal of Leadership Education 2002–2006 (N = 45, 23 secondary research themes)

Research Theme	<i>f</i>	<i>P</i>
Leadership Education	8	17.8
Academic Programs	4	8.9
Leadership Development	4	8.9
Evaluation	3	6.7
Organizational Development & Leadership	3	6.7
Accountability	2	4.4
Diversity (culture, ethnicity, gender)	2	4.4
Formal & Informal Teaching Approaches	2	4.4
Skill Development & Competencies	2	4.4
Youth Leadership & Development	2	4.4
Career Development & Assessment	1	2.2
Community Development & Leadership	1	2.2
Critical Thinking	1	2.2
Curriculum & Program Development	1	2.2
Framing	1	2.2

Table 67 (continued)

Research Theme	<i>f</i>	<i>P</i>
Globalization & Internationalization	1	2.2
Information Sources & Technology	1	2.2
Instructional & Program Delivery Approaches	1	2.2
Leadership Management	1	2.2
Needs Assessment	1	2.2
Processes, Principles, & Styles of Learning	1	2.2
Quality of Life & Life Skills	1	2.2
Volunteer Development & Leadership	1	2.2

Frequently Used Primary and Secondary Research Themes by Year

Table 68 outlines the frequently identified primary research themes in the *Journal of Leadership Education* by year. In 2002, the most frequently identified primary research theme was leadership education used in 45.5% (5 out of 11 articles) of the *JOLE* articles. The most frequent primary research theme was leadership development identified in 40.0% (2 out of 5 articles) of the *JOLE* articles in 2003. Leadership development was identified as the most frequently used primary research theme (36.4%, 4 out of 11 articles), in 2004. In 2005, the most utilized primary research theme was leadership development identified in 36.4% (4 out of 11 articles) of the *JOLE* articles. In 2006, leadership education was the most frequently identified primary research theme (41.7%, 5 out of 12 articles).

Table 68

Most Identified Primary Research Themes in the Journal of Leadership Education by Year (N = 45)

Year	Primary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
2002	Leadership Education	11	5	45.5
2003	Leadership Development	5	2	40.0
2004	Leadership Development	11	4	36.4
2005	Leadership Development	11	4	36.4
2006	Leadership Education	12	5	41.7

Table 69 outlines the frequently identified secondary research themes in the *Journal of Leadership Education* by year. In 2002, the frequently identified secondary research theme areas were academic programs and leadership education, used 18.2% (2 out of 11 articles). In 2003, all identified secondary research theme areas for the year were utilized once (20.0%, 1 out of 5 articles), and can be seen in the following table. Leadership education was the most frequently identified secondary research themes in 2004 (18.2%, 2 out of 11 articles). In 2005, the most utilized secondary research theme was leadership education which was identified in 18.2% (2 out of 11 articles) of the *JOLE* articles. In 2006, the most frequently identified secondary research theme in *JOLE* was leadership education (25.0%, 3 out of 12 articles).

Table 69

Most Identified Secondary Research Themes in the Journal of Leadership Education by Year (N = 45)

Year	Secondary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
2002	Academic Programs Leadership Education	11	2	18.2
2003	Diversity (culture, ethnicity, gender) Globalization and Internationalization Leadership Education Needs Assessment Organizational Development and Leadership	5	1	20.0
2004	Leadership Education	11	2	18.2
2005	Leadership Education	11	2	18.2
2006	Leadership Education	12	3	25.0

Prolific Authorship

The prolific authors identified in the *Journal of Leadership Education*, 2.4% or more of the total authors and 4.5% or more of total articles, are identified in Table 70. There were 83 *JOLE* authors in the 45 analyzed articles. Christine Townsend was the most prolific authors in the journal, authoring or co-authoring 4 of the 45 articles (13.2%) between 2002 and 2006. Townsend was the most prolific authors of all *JOLE* authors cited in the 5-year period (4 out of 83 cited authors). C. B Crawford, Susan Fritz, and Tracy Hoover were the second most prolific authors in *JOLE*, authoring or co-authoring 6.7% of the total articles. The third most prolific authors are identified in the following table (4.4% of the total articles).

Table 70

Prolific Authorship in the Journal of Leadership Education 2002 – 2006 (N of Authors = 83, N of Total Articles = 45)

Author	<i>f</i>	<i>P</i> of Authors	<i>P</i> of Total Articles
Townsend, Christine D.	4	4.8	8.9
Crawford, C. B.	3	3.6	6.7
Fritz, Susan M.	3	3.6	6.7
Hoover, Tracy S.	3	3.6	6.7
Barbuto, John E., Jr.	2	2.4	4.4
Bruce, Jacklyn A.	2	2.4	4.4
Culp, Kenneth, III	2	2.4	4.4
Dooley, Kim E.	2	2.4	4.4
McCormick, Michael J.	2	2.4	4.4
Rohs, Frederick R	2	2.4	4.4
Strohkirch, C. Sue	2	2.4	4.4
Webster, Nicole S.	2	2.4	4.4
White, Belinda Johnson	2	2.4	4.4
Williams, Jennifer R.	2	2.4	4.4

Research Methods

Research methods utilized in the *Journal of Leadership Education* are identified in Table 71. Quantitative research methods were the most common (64.4%), followed by qualitative (28.9%), and the least frequently used research methods were mixed (6.7%), utilizing both quantitative and qualitative methods.

Table 71

Research Methods Used in the Journal of Leadership Education 2002 – 2006 (N = 45)

Method	<i>f</i>	<i>P</i>
Quantitative	29	64.4
Qualitative	13	28.9
Mixed Methods	3	6.7

Research method types utilized in the 45 articles published in the *Journal of Leadership Education* are identified in Table 72. Historical methods were the most frequent research method types utilized (20.0%). Survey research was utilized in 15.6% of the analyzed *JOLE* articles. The third most common research types were correlation, experimental, and evaluation research (11.1%). Case study research was utilized in 6.7% of the *JOLE* articles. Additional research method types utilized in *JOLE* research articles, between 2002 and 2006, are identified in the following table.

Table 72

Research Method Types Used in the Journal of Leadership Education 2002 – 2006 (N = 45)

Method Type	<i>f</i>	<i>P</i>
Historical	9	20.0
Surveys	7	15.6
Correlation	5	11.1
Experimental	5	11.1
Evaluation	5	11.1
Case Study	3	6.7
Content Analysis	2	4.4
Interviews	2	4.4

Table 72 (continued)

Method Type	<i>f</i>	<i>P</i>
Open-ended Questions/Reflections	2	4.4
Holistic	1	2.2
Interviews with Referential Adequacy Material	1	2.2
Interviews and Observations	1	2.2
Observations and Document Analysis	1	2.2
Survey and Focus Groups	1	2.2

Cited Referenced Authors from the Peer Discipline Areas of AGED

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the *Journal of Leadership Education* were identified in the field study as premier research journal outlets in agricultural education. Each of these journals supports the broad contexts of the peer discipline areas in agricultural education. The better understand the scope of the discipline citing its own works a content analysis was completed on the cited referenced works in the *Journal of Leadership Education*.

Journal of Agricultural Education

There were 31 cited referenced works from the *Journal of Agricultural Education (JAE)* identified in the *Journal of Leadership Education*. Lindner, Murphy, and Briers (2001) and SeEVERS and Dormody (1994) were the most frequently cited referenced *JAE* authors cited in *JOLE* referenced 9.7%. The second most frequently

cited referenced *JAE* authors in *JOLE* were referenced 6.5% and are identified in Table 73.

Table 73

Frequently Cited Journal of Agricultural Education Authors Referenced in the Journal of Leadership Education 2002 – 2006 (N = 31)

<i>JAE</i> Author	<i>f</i>	<i>P</i>
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	3	9.7
Seevers, B. S., & Dormody, T. J. (1994)	3	9.7
Culp, K., III. (1996)	2	6.5
Dormody, T. J., & Seevers, B. S. (1994)	2	6.5
Rutherford, T. A., Townsend, C. D., Briers, G. E., Cummins, R., & Conrad, C. R. (2002)	2	6.5
Thorp, L., Cummins, R., & Townsend, C. (1998)	2	6.5
Wingenbach, G. J., & Kahler, A. A. (1997)	2	6.5

Journal of International Agricultural and Extension Education

In the 45 *Journal of Leadership Education* articles there were no references to the *Journal of International Agricultural and Extension Education*.

Journal of Extension

There were 26 cited referenced authors from the *Journal of Extension (JOE)* in the *Journal of Leadership Education*, from 2002 to 2006. Ladewig, H., & Rohs, F. R. (2000) were the most frequently cited referenced *JOE* authors in *JOLE*. The article was cited in 11.5% of the referenced *JOLE* articles. Boyd, B. L., Herring, D. R., & Briers, G. E. (1992); Patterson, T. J. (1998); and Rockwell, K., & Kohn, H. (1989) were the second most frequently cited referenced *JOE* authors, the articles were referenced 7.7%. There

were seventeen additional references made to *JOE* articles. The *JOE* authors were cited once in the *Journal of Leadership Education*.

North American Colleges and Teachers of Agriculture Journal

In the *Journal of Leadership Education*, there were two cited references made to the North American Colleges and Teachers of Agriculture (*NACTA*) Journal. The cited referenced authors were referenced once (50%). The authors were: Klein, M. K. (1990) and Rohs, F.R., & Langone, C.A. (1998).

Journal of Applied Communications

In the 45 *Journal of Leadership Education* articles there were no references to the *Journal of Applied Communications*.

Journal of Leadership Education

There were 16 cited referenced authors from the *Journal of Leadership Education (JOLE)* in the *Journal of Leadership Education*, from 2002 to 2006. Hoover, T. S., & Webster, N. (2004) were the most frequently cited referenced *JOLE* authors in *JOLE*. The article was cited in 18.8% of the referenced *JOLE* articles. Graham, T. S., Ackerman, J. C., & Maxwell, K. K. (2004); Graham, T. S., Sincoff, M. Z., Baker, B., & Acerman, J. L. (2003); and Huber, N. S. (2002) were the second most frequently cited referenced *JOLE* authors, the articles were referenced 12.5%. There were seven additional references made to *JOLE* authors that were cited once in the *Journal of Leadership Education*.

Prolific Citations of Premier AGED Journal Authors in JOLE

In the *Journal of Leadership Education*, there were 75 cited references to the six premier agricultural education (AGED) journals, from articles published between 2002 and 2006. The most frequently cited referenced premier AGED authors were Hoover and Webster (2004) for work cited from *JOLE*; Ladewig and Rohs (2000) for work cited from *JOE*; Lindner, Murphy, and Briers (2001) for work cited from *JAE*; and Seevers and Dormody (1994) for work cited from *JAE*. Of all cited referenced work, from the premier AGED journals, the above listed works were cited 4%. The second most frequently cited referenced premier AGED citations in the *Journal of Leadership Education* are identified in Table 74.

Table 74

Frequently Cited Referenced AGED Journal Authors in the Journal of Leadership Education 2002 – 2006 (N = 75)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Hoover, T. S., & Webster, N. (2004)	<i>JOLE</i>	3	4.0
Ladewig, H., & Rohs, F. R. (2000)	<i>JOE</i>	3	4.0
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAE</i>	3	4.0
Seevers, B. S., & Dormody, T. J. (1994)	<i>JAE</i>	3	4.0
Boyd, B. L., Herring, D. R., & Briers, G. E. (1992)	<i>JOE</i>	2	2.7
Culp, K., III. (1996)	<i>JAE</i>	2	2.7
Dormody, T. J., & Seevers, B. S. (1994)	<i>JAE</i>	2	2.7
Graham, T. S., Ackerman, J. C., & Maxwell, K. K. (2004)	<i>JOLE</i>	2	2.7
Graham, T. S., Sincoff, M. Z., Baker, B., & Acerman, J. L. (2003)	<i>JOLE</i>	2	2.7
Huber, N. S. (2002)	<i>JOLE</i>	2	2.7
Patterson, T. J. (1998)	<i>JOE</i>	2	2.7

Table 74 (continued)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
			2.7
Rockwell, K., & Kohn, H. (1989)	<i>JOE</i>	2	
Rutherford, T. A., Townsend, C. D., Briers, G. E., Cummins, R., & Conrad, C. R. (2002)	<i>JAЕ</i>	2	2.7
Thorp, L., Cummins, R., & Townsend, C. (1998)	<i>JAЕ</i>	2	2.7
Wingenbach, G. J., & Kahler, A. A. (1997)	<i>JAЕ</i>	2	2.7

Frequently Cited Referenced Works

Referenced work adds to understanding and the literature base of the agricultural education discipline. In an effort to better understand where the discipline is securing information, to support the contexts of the peer discipline areas in agricultural education, the research used content analysis to analyze cited referenced books and/or texts; other journals (not identified as premier AGED journals in the field study); proceedings, conferences, and meetings; other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and web pages. To better understand the scope of the discipline works cited in the above mentioned areas were analyzed in the *Journal of Leadership Education*.

Books/Texts

The *Journal of Leadership Education* cited referenced books and texts 348 times. Content analysis was used to determine the most frequently cited books and texts in the *Journal of Leadership Education*. Books with multiple edition and publication dates are noted in the following table. The most frequently cited referenced book was Bass'

(1990) *Bass and Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications* cited in 2.30% of the total *JOLE* book citations. The second most frequently cited referenced book was Kouzes and Posner's (2002) *The Leadership Challenge: How to Get Extraordinary Things Done in Organization* cited 2.01%. Burns' (1978) *Leadership* was the third most frequently cited book; referenced 1.44%. A list of frequently cited referenced books and texts identified 1.15% or more, in the *Journal of Leadership Education*, are identified in Table 75.

Table 75

Frequently Cited Books and Texts in the Journal of Leadership Education 2002 – 2006
(*N* = 348)

Book and Text	<i>f</i>	<i>P</i>
Bass, B. M. (1990). <i>Bass & Stogdill's Handbook of leadership: Theory, research, & managerial applications</i> (3rd ed.). New York: The Free Press.	8	2.30
Kouzes, J. M., & Posner, B. Z. (2002; 1997; 1995) <i>The leadership challenge: How to get extraordinary things done in organization</i> (3rd ed; 2nd ed.; 1st ed.). San Francisco: Jossey-Bass Publishers.	7	2.01
Burns, J. M. (1978). <i>Leadership</i> . New York: Harper & Row.	5	1.44
Komives, S. R, Lucas, N., & McMahon, T. R. (1998). <i>Exploring Leadership: For college students who want to make a difference</i> . San Francisco: Jossey-Bass Publishers.	4	1.15
Rost, J. C. (1992; 1991, 1990). <i>Leadership in the 21st century</i> . New York: Praeger.	4	1.15
Yukl, G. A. (2001; 1994; 1989). <i>Leadership in organizations</i> . Englewood Cliffs, NJ: Prentice Hall.	4	1.15

Journals

The *Journal of Leadership Education* cited referenced journals, other than those identified as premier AGED journals, 220 times. Journals were analyzed to determine the most frequently cited referenced journals in the *Journal of Leadership Education*. The most frequently cited referenced journal, in *JOLE*, was *Journal of Leadership Studies*; referenced 10.9%. The second most frequently cited referenced journal was *Journal of Applied Psychology*; referenced 4.55%. The third most frequently cited referenced journals were *Academy of Management Journal*, *Leadership and Organization Development Journal*, and *Leadership Quarterly* (3.64%). Four cited referenced journals were identified as the fourth most frequently cited journals, in *JOLE* (3.18%). The journals were *Academy of Management Journal* and *the Journal of Applied Psychology*. A list of frequently cited referenced journals identified 1.81% or more (not including the identified premier AGED journals), in the *Journal of Leadership Education*, are identified in Table 76.

Table 76

Frequently Cited Journals in the Journal of Leadership Education 2002 – 2006 (N = 220)

Other Journal	<i>f</i>	<i>P</i>
Journal of Leadership Studies	24	10.90
Journal of Applied Psychology	10	4.55
Academy of Management Review	8	3.64
Leadership & Organization Development Journal	8	3.64
Leadership Quarterly	8	3.64
Academy of Management Journal	7	3.18
Journal of Applied Social Psychology	7	3.18

Table 76 (continued)

Other Journal	<i>f</i>	<i>P</i>
Organizational Dynamics	7	3.18
The Journal of Leadership Studies	7	3.18
Academy of Management Learning & Education	6	2.72
Organizational Behavior and Human Performance	6	2.72
Psychological Bulletin	5	2.27
American Psychologist	4	1.81
Harvard Business Review	4	1.81
Academy of Management Executive	4	1.81
Journal of Management	4	1.81
Journal of Management Education	4	1.81

Proceedings, Conferences, and Meetings

The *Journal of Leadership Education* cited referenced proceedings, conferences, and/or meetings 18 times. The most frequently cited referenced proceeding, conference, and/or meeting was the *Speech Communication Association Conference*. The conference proceeding was referenced 16.7%. In *JOLE*, four proceeding, conference, and/or meeting were identified as the second most frequently cited references proceedings. The proceedings were *Annual Meeting of the American Psychological Association*, *Association of Leadership Educators*, *International Leadership Association*, and *National Agricultural Education Research Conference*, each referenced 11.1%. The additional seven referenced proceeding, conference, and/or meeting, in *JOLE* were cited once.

Other Works

The *Journal of Leadership Education* cited referenced other works 73 times.

Journal articles were analyzed to determine the types (dissertations, manuscripts, newspapers, government documents, etc.) and most frequent citations of works, in the *Journal of Leadership Education*. A list of frequently cited referenced other works identified 5.5% or more, in the *Journal of Leadership Education*, are identified in Table 77. The most frequently cited referenced other works were university manuscripts, cited 19.2%. The second most frequently cited referenced other works were unpublished doctoral dissertation, referenced 16.4%. Magazines and online 4-H and FFA information were the third most frequently cited other works (11.0%). The fourth most frequently cited referenced other works were unpublished Masters of Science thesis cited 8.2%. Additional other works cited 5.5%, in the *Journal of Leadership Education*, are identified in the table below.

Table 77

Frequently Cited Other Works in the Journal of Leadership Education 2002 – 2006 (N = 73)

Other Work	<i>f</i>	<i>P</i>
University Manuscript	14	19.2
Unpublished Doctoral Dissertation	12	16.4
Magazines	8	11.0
Online 4-H and FFA Information	8	11.0
Unpublished M.S. Thesis	6	8.2
Annual or Final Reports	4	5.5
ERIC Documents	4	5.5
Personal Communication	4	5.5
Unpublished Manuscripts or Reports	4	5.5

Web Pages

There were 47 cited references to web pages in the *Journal of Leadership Education*. The most frequently cited web pages were to .org sites (21 citations, 44.7%). References to .com sites were the second most frequently cited *JOLE* web page citations (11 citations, 23.4%). The third most frequently cited web pages were to .edu sites (10 citations, 21.3%). References to .gov sites were the fourth most frequently cited *JOLE* web page citations (3 citations, 6.4%). Two cited references were made to .us sites (2 citations, 4.3%).

Overall Journal Comparison

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the *Journal of Leadership Education* were identified in the field study as premier research journal outlets in agricultural education. Each of these journals were analyzed and the following section is a compilation of these journals. The *North American Colleges and Teachers of Agriculture Journal* was not included in the content analysis; however, the other journals were analyzed to determine frequently identified components of *NACTA*. The overall journal comparison includes: *JAE*, *JIAEE*, *JOE*, *JAC*, and *JOLE*. There were 1,151 articles analyzed in the 10-year content analysis.

Primary and Secondary Research Themes

There were 1,151 articles analyzed in the *Journal of Agricultural Education* (323), the *Journal of International Agricultural and Extension Education* (144), the

Journal of Extension (548), the *Journal of Applied Communications* (91), and the *Journal of Leadership Education* (45). The above journals were identified as the premier agricultural education (AGED) journal in the discipline, by participants in the field study. Forty-nine of the fifty identified research themes were represented in the primary research theme areas of the premier AGED journals. Graphic design was not identified in the primary research theme areas. Primary research themes with corresponding journal frequencies are identified in Table 78. Food, agriculture, natural resources, health, and family was the most frequently identified primary research theme in the premier agricultural education journals, represented in slightly more than 14% of all articles, between 1997 and 2006.. Needs assessment was the second most prolific primary research (6.26%). Instructional and program delivery approaches was identified as the third most frequently identified primary research theme, represented in 5.39% of the premier AGED articles. Youth leadership and development was represented in 5.21% of the analyzed articles. The fifth most frequently identified primary research theme was evaluation, represent in 5.04% of the articles. Additional frequently identified primary research themes in premier AGED journals are located in the following table.

Table 78

Primary Research Themes Identified in Premier Agricultural Education Journals 1997–2006 (N = 1,151, 49 primary research themes)

Primary Research Themes	<i>JAE</i> <i>f</i>	<i>JIAEE</i> <i>f</i>	<i>JOE</i> <i>f</i>	<i>JAC</i> <i>f</i>	<i>JOLE</i> <i>f</i>	Total <i>f</i>	Total <i>P</i>
Food, Agriculture, Natural Resources, Health, & Family	20	12	128	3	0	163	14.16
Needs Assessment	29	13	29	0	1	72	6.26
Instructional & Program Delivery Approaches	12	3	45	1	1	62	5.39
Youth Leadership & Development	12	0	45	0	3	60	5.21
Evaluation	12	23	22	0	1	58	5.04
Information Sources & Technology	2	2	28	17	0	49	4.26
Volunteer Development & Leadership	6	1	29	1	2	39	3.39
Teacher Preparation & Competence	33	2	1	0	1	37	3.21
Research (methods and models)	17	3	13	0	1	34	2.95
Curriculum & Program Development	7	9	13	3	0	32	2.78
Leadership Development	6	2	9	0	14	31	2.69
Perceptions & Attitudes Assessment	21	7	2	0	0	30	2.60
Distance Education	12	0	12	5	0	29	2.52
Diversity (culture, ethnicity, gender)	6	8	11	0	0	25	2.17
Professional Development	7	5	9	2	1	24	2.09
Communication Management	4	1	4	13	1	23	2.00
Globalization & Internationalization	2	14	5	0	0	21	1.82
Institutional Organization & Institutionalization-	8	5	5	3	0	21	1.82
Collaborations, Partnerships, & Coalitions	0	5	14	0	0	19	1.65
Academic Programs	12	5	0	0	1	18	1.56
Leadership Education	5	0	2	0	11	18	1.56
Leadership Management	10	0	7	0	1	18	1.56

Table 78 (continued)

Primary Research Themes	<i>JAE</i>	<i>JIAEE</i>	<i>JOE</i>	<i>JAC</i>	<i>JOLE</i>	Total	Total
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>P</i>
Processes, Principles, & Styles of Learning	12	0	5	1	0	18	1.56
Critical Thinking	12	2	1	2	0	17	1.48
Career Development & Assessment	5	4	6	0	1	16	1.39
Organizational Development & Leadership	2	3	11	0	0	16	1.39
Policy Issues	3	1	11	1	0	16	1.39
Communications of Scholarship	2	0	3	9	0	14	1.22
Service & Experiential Learning	7	0	4	0	3	14	1.22
Formal & Informal Teaching Approaches	4	0	8	0	1	13	1.13
Skill Development & Competencies	4	1	8	0	0	13	1.13
Accountability	0	0	9	3	0	12	1.04
Appropriateness of Education	10	0	2	0	0	12	1.04
Communication Technology	3	2	3	4	0	12	1.04
Knowledge & Competencies	6	5	0	0	0	11	0.96
Diffusion of Innovations	1	5	3	0	1	10	0.87
Biotechnology Communications	0	1	2	6	0	9	0.78
Marketing & Promotion	1	0	8	0	0	9	0.78
Media Relations	1	0	1	6	0	8	0.70
Quality of Life & Life Skills	1	0	7	0	0	8	0.70
Community Development & Leadership	0	0	7	0	0	7	0.61
Consumer/Audience Response & Analysis	0	0	4	3	0	7	0.61
Agricultural Literacy	4	0	0	1	0	5	0.43
Electronic Media	0	0	2	3	0	5	0.43
Funding (resource development and needs)	0	0	5	0	0	5	0.43
Risk & Crisis Communications	0	0	2	2	0	4	0.35
Business/Employee Mgmt & Expansion		0	3	0	0	3	0.26

Table 78 (continued)

Primary Research Themes	<i>JAE</i>	<i>JIAEE</i>	<i>JOE</i>	<i>JAC</i>	<i>JOLE</i>	Total	Total
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>P</i>
Framing	0	0	0	2	0	2	0.17
Writing	2	0	0	0	0	2	0.17

Forty-nine research themes were identified in the secondary research theme areas. There were no references made to biotechnology communications, which was seen in the primary research theme area; however, graphic design was seen in the secondary research themes. Secondary research themes with corresponding journal frequencies are identified in Table 79. Food, agriculture, natural resources, health, and family was the most frequently identified secondary research theme, represented in the premier AGED journals 11.12%. Evaluation was the second most frequently identified primary research (8.69%). Instructional and program delivery approaches was identified in 6.78% of the analyzed articles, between 1997 and 2006. The fourth most frequently identified secondary research theme was curriculum and program development, identified in 6.26% of the premier AGED articles Youth leadership and development was the fifth most frequently identified secondary research theme, 5.47%. Additional secondary research themes in premier AGED journals are located in the following table.

Table 79

*Secondary Research Themes Identified in Premier Agricultural Education Journals
1997–2006 (N = 1,151, 49 secondary research themes)*

Secondary Research Themes	<i>JAE</i> <i>f</i>	<i>JIAEE</i> <i>f</i>	<i>JOE</i> <i>f</i>	<i>JAC</i> <i>f</i>	<i>JOLE</i> <i>f</i>	Total <i>f</i>	Total <i>P</i>
Food, Agriculture, Natural Resources, Health, & Family	21	16	78	13	0	128	11.12
Evaluation	18	12	67	0	3	100	8.69
Instructional & Program Delivery Approaches	16	5	53	3	1	78	6.78
Curriculum & Program Development	20	8	42	1	1	72	6.26
Youth Leadership & Development	17	2	42	0	2	63	5.47
Needs Assessment	8	6	37	4	1	56	4.87
Teacher Preparation & Competence	38	2	3	0	0	43	3.73
Institutional Organization & Institutionalization-	17	3	19	4	0	43	3.74
Distance Education	18	1	8	3	0	30	2.61
Diversity (culture, ethnicity, gender)	9	0	14	4	2	29	2.52
Information Sources & Technology	2	5	11	10	1	29	2.52
Formal & Informal Teaching Approaches	17	4	5	0	2	28	2.43
Academic Programs	12	6	0	2	4	24	2.09
Appropriateness of Education	15	4	4	1	0	24	2.09
Perceptions & Attitudes Assessment	9	11	1	3	0	24	2.09
Professional Development	9	8	5	0	0	22	1.91
Skill Development & Competencies	4	2	10	4	2	22	1.91
Globalization & Internationalization	1	15	1	3	1	21	1.82
Leadership Management	7	2	11	0	1	21	1.82
Research (methods and models)	6	4	8	1	0	19	1.65
Community Development & Leadership	3	5	8	1	1	18	1.56

Table 79 (continued)

Secondary Research Themes	<i>JAE</i> <i>f</i>	<i>JIAEE</i> <i>f</i>	<i>JOE</i> <i>f</i>	<i>JAC</i> <i>f</i>	<i>JOLE</i> <i>f</i>	Total <i>f</i>	Total <i>P</i>
Accountability	2	0	10	3	2	17	1.48
Leadership Development	4	0	8	1	4	17	1.48
Collaborations, Partnerships, & Coalitions	1	1	14	0	0	16	1.39
Processes, Principles, & Styles of Learning	12	0	3	0	1	16	1.39
Career Development & Assessment	4	4	5	1	1	15	1.30
Quality of Life & Life Skills	4	0	10	0	1	15	1.30
Leadership Education	5	1	0	0	8	14	1.22
Consumer/Audience Response & Analysis	1	0	9	3	0	13	1.13
Policy Issues	1	1	9	2	0	13	1.13
Volunteer Development & Leadership	5	0	7	0	1	13	1.13
Communications of Scholarship	5	2	2	3	0	12	1.04
Communication Management	0	0	5	6	0	11	0.96
Funding (resource development and needs)	0	1	7	2	0	10	0.87
Critical Thinking	4	3	1	0	1	9	0.78
Organizational Development & Leadership	0	0	6	0	3	9	0.78
Diffusion of Innovations	0	3	5	0	0	8	0.70
Knowledge & Competencies	4	4	0	0	0	8	0.70
Risk & Crisis Communications	0	2	4	1	0	7	0.61
Marketing & Promotion	1	0	5	0	0	6	0.52
Media Relations	2	0	0	4	0	6	0.52
Service & Experiential Learning	1	0	4	0	0	5	0.43
Writing	0	0	1	3	0	4	0.35
Business/Employee Management & Expansion	0	0	3	0	0	3	0.26
Communication Technology	0	1	0	2	0	3	0.26
Agricultural Literacy	0	0	1	1	0	2	0.17
Framing	0	0	0	1	1	2	0.17

Table 79 (continued)

Secondary Research Themes	<i>JAE</i>	<i>JIAEE</i>	<i>JOE</i>	<i>JAC</i>	<i>JOLE</i>	Total	Total
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>P</i>
Electronic Media	0	0	2	0	0	2	0.17
Graphic Design	0	0	0	1	0	1	0.09

Frequently Used Research Themes by Year

Table 80 identifies the most frequently used primary research themes by year. These themes were derived from the five premier agricultural education journals. The research theme category food, agriculture, natural resources, health, and family was the most frequently identified primary research theme. The theme was compressed from multiple areas including: food safety, security, and preservation; crop research, management, and production; pest management; agricultural development and production; land-use sustainable farming; farming practices, technology, and machinery; farm safety; animal health issues and production; environmental and natural resource issues and education; water issues; wildlife issues and management; forestry management; tourism; biodiesel; homeland security; health education and issues; parenting and relationship education; nutrition education; and finance education. The research theme was the most frequently identified primary research theme in years 1997 through 2004 (the highest percentage was in 1998 at 24.4% and the lowest was 12.8% in 1997 and 2002). In 2005, information sources and technology was identified as the most identified primary theme (10.3%). In 2006, leadership development was identified as the most frequently used primary research theme (9.8%).

Table 80

Primary Research Themes Identified in Premier Agricultural Education Journals by Year (N = 1,151)

Year	Primary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Food, Agriculture, Natural Resources, Health, and Family	78	10	12.8
1998	Food, Agriculture, Natural Resources, Health, and Family	82	20	24.4
1999	Food, Agriculture, Natural Resources, Health, and Family	95	14	14.7
2000	Food, Agriculture, Natural Resources, Health, and Family	105	23	21.9
2001	Food, Agriculture, Natural Resources, Health, and Family	103	14	13.6
2002	Food, Agriculture, Natural Resources, Health, and Family	124	27	12.8
2003	Food, Agriculture, Natural Resources, Health, and Family	115	20	17.4
2004	Food, Agriculture, Natural Resources, Health, and Family	150	27	18.0
2005	Information Sources and Technology	146	15	10.3
2006	Leadership Development	153	19	9.8

Table 81 identifies the most frequently used secondary research themes by year. In years 1997, 1999, and 2001 there were two research themes identified as the most frequently used secondary research theme areas. The secondary research theme food, agriculture, natural resources, health, and family was identified as the most frequent secondary research theme in years 1997, 1999, 2000, 2001, 2003, 2004, and 2005 (the highest percentage as in 1999 at 13.7% and the lowest was 10.3% in 1997). Evaluation was the most frequent secondary research theme in 1997 (10.3%) and 1998 (14.6%). Instructional and program delivery approaches was the most identified secondary

research theme in 1999 (13.7%). In 2001 (12.6%) and 2006 (11.8%), curriculum and program development was the most frequently identified secondary research theme. Needs assessment was the most frequently identified research theme in 2002 (9.7%).

Table 81

Secondary Research Themes Identified in Premier Agricultural Education Journals by Year (N = 1,151)

Year	Secondary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Food, Agriculture, Natural Resources, Health, and Family Evaluation	78	8	10.3
1998	Evaluation	82	12	14.6
1999	Food, Agriculture, Natural Resources, Health, and Family Instructional and Program Delivery Approaches	95	13	13.7
2000	Food, Agriculture, Natural Resources, Health, and Family	105	12	11.4
2001	Food, Agriculture, Natural Resources, Health, and Family Curriculum and Program Development	103	13	12.6
2002	Needs Assessment	124	12	9.7
2003	Food, Agriculture, Natural Resources, Health, and Family	115	13	11.3
2004	Food, Agriculture, Natural Resources, Health, and Family	150	22	14.7
2005	Food, Agriculture, Natural Resources, Health, and Family	146	18	12.3
2006	Curriculum and Program Development	153	18	11.8

Due to the high frequency of the research theme category food, agriculture, natural resources, health, and family identified in both primary and secondary research areas, an additional research theme by year was analyzed. Table 82 identifies the most

frequently utilized tertiary research themes by year. In 1997, there were two frequently identified tertiary research themes utilized. In 2004, there were three tertiary research themes identified. Needs assessment was the most frequently identified tertiary research theme seen in years 1997 through 2000 and in 2004 (the highest percentage as in 1999 at 11.6% and the lowest was 6.7% in 2004). Youth leadership and development was the most frequently identified tertiary research theme in 1997 (9.0%) and 2001 (10.7%). Instructional and program delivery approaches was the most frequently identified tertiary research theme in 2002 (8.1%) and 2004 (6.7%). The most frequently identified tertiary research theme in 2003 (7.8%) and 2004 (6.7%) was evaluation. Food, agriculture, natural resources, health, and family was identified as the most frequent tertiary research theme in 2005 (8.9%). Teacher preparation and competence was the most frequently identified tertiary research theme in 2006 (8.5).

Table 82

Tertiary Research Themes Identified in Premier Agricultural Education Journals by Year (N = 1,151)

Year	Tertiary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
1997	Needs Assessment			
	Youth Leadership and Development	78	7	9.0
1998	Needs Assessment	82	10	12.2
1999	Needs Assessment	95	11	11.6
2000	Needs Assessment	105	6	5.7
2001	Youth Leadership and Development	103	11	10.7
2002	Instructional and Program Delivery Approaches	124	10	8.1
2003	Evaluation	115	9	7.8
2004	Evaluation			
	Instructional and Program Delivery Approaches			
	Needs Assessment	150	10	6.7

Table 82 (continued)

Year	Tertiary Research Theme	<i>n</i>	<i>f</i>	<i>P</i>
2005	Food, Agriculture, Natural Resources, Health, and Family	146	13	8.9
2006	Teacher Preparation and Competence	153	13	8.5

Prolific Authorship

Table 83 represents the most prolific authors identified in the premier agricultural research journals. The prolific authors identified 0.28% or more of the total authors and 0.70% or total articles, are identified in the table. There were 2,903 authors identified in the 1,151 analyzed articles. James Lindner was the most prolific author identified in the premier AGED journals, authoring or co-authoring 31 of the 1,152 articles (2.69%) from 1997 and 2006. Lindner was the most prolific author of all AGED authors cited in the 10-year period (31 out of 2,903 authors). James Dyer was the second most prolific author, authoring or co-authoring 2.61% of the total articles. Greg Miller was the third most prolific author, authoring or co-authoring 1.91% of the total published articles. Tracy Irani and Rama Radhakrishna authored or co-authored 1.56% of the articles. The fifth most prolific authors were Rick Rudd and Gary Wingenbach (1.39%). Additional prolific AGED authors are identified in the following table.

Table 83

Prolific Authorship in Premier Agricultural Education Journals 1997 – 2006 (N of Total Authors = 2903, N of Total Articles = 1,151)

Author	<i>f</i>	<i>P of Total Authors</i>	<i>P of Total Articles</i>
Lindner, James R.	31	1.07	2.69
Dyer, James E.	30	1.03	2.61
Miller, Greg	22	0.76	1.91
Irani, Tracy A.	18	0.62	1.56
Radhakrishna, Rama B.	18	0.62	1.56
Rudd, Rick D.	16	0.55	1.39
Wingenbach, Gary J.	16	0.55	1.39
Telg, Ricky	15	0.52	1.30
Balschweid, Mark A.	14	0.48	1.22
Dooley, Kim E.	14	0.48	1.22
Boyd, Barry L.	13	0.45	1.13
Williams, David L.	13	0.45	1.13
Briers, Gary E.	12	0.41	1.04
Edwards, M. Craig	12	0.41	1.04
Chizari, Mohammad	11	0.38	0.96
Culp, Kenneth, III	11	0.38	0.96
Kelsey, Kathleen D.	11	0.38	0.96
Talbert, B. Allen	11	0.38	0.96
Baker, Matt	10	0.34	0.87
Fritz, Susan M.	10	0.34	0.87
Murphy, Tim H.	10	0.34	0.87
Roberts, T. Grady	10	0.34	0.87
Safrit, R. Dale	10	0.34	0.87
Ball, Anna L.	9	0.31	0.78
Dlamini, Barnabas M.	9	0.31	0.78
Garton, Bryan L.	9	0.31	0.78
Lundy, Lisa K.	9	0.31	0.78
Place, Nick T.	9	0.31	0.78
Thompson, Gregory W.	9	0.31	0.78
Blaine, Thomas W.	8	0.28	0.70
Bruening, Thomas H.	8	0.28	0.70
Gartin, Stacy A.	8	0.28	0.70
Knobloch, Neil A.	8	0.28	0.70
Johnson, Donald M.	8	0.28	0.70
Martin, Robert A.	8	0.28	0.70
Osborne, Edward W.	8	0.28	0.70
Thomas J. Dormody	8	0.28	0.70

Table 83 (continued)

Author	<i>f</i>	<i>P of Total Authors</i>	<i>P of Total Articles</i>
Townsend, Christine D.	8	0.28	0.70

Research Methods

Table 84 identifies the research methods utilized in the 1,151 analyzed research articles in the premier agricultural education research journals. The majority (72.1%) of the articles used quantitative research methodologies (830 out of 1,152 articles). Qualitative research methodologies were employed in 14.6% of the studies. Both quantitative and qualitative (mixed) methods were utilized least (13.3%).

Table 84

Research Methods Used in Premier Agricultural Education Journals 1997 – 2006 (N = 1,151)

Method	<i>f</i>	<i>P</i>
Quantitative	830	72.1
Qualitative	168	14.6
Mixed Methods	153	13.3

Research method types utilized, in the articles analyzed in premier agricultural education journals, are identified in Table 85. The largest percentage of articles utilized survey research methods (40.9%). The second most prolific research method type was

evaluation (14.7%). Experimental research methods were employed in 9.5% of the articles. Almost six percent of the articles utilized historical research methods (5.9%). The fifth most prolific research method type was correlational research (5.3%). Interview research methods were employed in 5.2% of the articles. Almost three percent of the articles utilized content analysis research methods. The eighth most prolific research method type was case studies (2.3%). Delphi research methods were employed in 2.2% of the articles. Slightly more than 2% of the articles utilized focus group research methods. The tenth most prolific research method type was a mixed method methodology of survey and interviews (1.7%). Ex Post Facto research methods were employed in 1.4% of the articles. Surveys with focus group methodologies were applied in 1.1% of the articles. The following research method types were seen in less than 1% of the articles: interviews with focus groups (0.9%); surveys with focus groups (0.8%); open-ended question/reflections (0.7%); holistic (0.6%); interviews and document analysis (0.3%); interviews and observations (0.2%); observations (0.2%); survey with focus groups, and interviews (0.2%); evaluation and open-ended questions (0.1%); evaluation & case study (0.1%); observations and document analysis (0.1%); and survey and observations (0.1%).

Table 85

Research Method Types Used in Premier Agricultural Education Journals 1997 – 2006
(*N = 1,151*)

Method Type	<i>f</i>	<i>P</i>
Survey	471	40.9
Evaluation	169	14.7
Experimental	110	9.5
Historical	68	5.9
Correlation	61	5.3
Interviews	60	5.2
Content Analysis	37	3.2
Case Study	27	2.3
Delphi	25	2.2
Focus Groups	24	2.1
Surveys and Interviews	20	1.7
Ex Post Facto	16	1.4
Survey and Open-ended Questions	13	1.1
Interviews and Focus Groups	10	0.9
Survey and Focus Groups	9	0.8
Open-ended Questions/Reflections	8	0.7
Holistic	7	0.6
Interviews and Document Analysis	4	0.3
Interviews and Observations	2	0.2
Observations	2	0.2
Survey, Focus Groups, and Interviews	2	0.2
Evaluation and Open-ended Questions	1	0.1
Evaluation and Case Study	1	0.1
Observations and Document Analysis	1	0.1
Survey and Observations	1	0.1

Overall Frequently Cited Authors

The *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *Journal of Extension*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Applied Communications*, and the

Journal of Leadership Education were identified in the field study as premier research journal outlets in agricultural education. Each of these journals supports the broad contexts of the peer discipline areas in agricultural education outlined in the scope of the study. The better understand the scope of the discipline citing its own works a content analysis was utilized to determine the cited referenced works in the identified premier agricultural education journals.

In the premier AGED journals, there were 2,348 cited references to the six identified premier agricultural education journals, from 1997 to 2006. The most frequently cited referenced premier AGED authors were Miller and Smith (1983) for their work cited from the *Journal of Extension*. Of all cited referenced work, from the premier AGED journals, their work was cited 3.45% in the total AGED journal citations and 7.04% in the AGED journal articles. Lindner, Murphy, and Briers (2002) were the second most frequently cited referenced AGED journal authors for their work published in *JAE*. Lindner, Murphy, and Briers were frequently cited 2.69% in the total analyzed AGED journals. Dyer and Osborne (1996) were the third most frequently cited referenced premier AGED journal authors (1.65%) for their published work in the *Journal of Agricultural Education*. Boyd, Herring, and Briers (1992, *JOE*) and Rockwell and Kohn (1989, *JOE*) were identified as the fourth most prolific cited referenced authors in the premier agricultural education journals (1.37%) The fifth most frequently cited referenced AGED authors were Torres and Cano (1995, *JAE*) (1.30%). Table 86 contains a list of frequently cited referenced premier AGED journal authors who were

cited 0.52% or more, in the analyzed premier agricultural education journals from 1997 to 2006.

Table 86

Prolific Citations of the Premier AGED Journal Authors 1997 – 2006 (Total AGED Journal citations N = 2,348, Total AGED Journal Articles = 1,151)

Author	Journal	<i>f</i>	<i>P</i> Total Citations	<i>P</i> Total Journals
Miller, L. E., & Smith, K. L. (1983)	<i>JOE</i>	81	3.45	7.04
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAE</i>	31	1.31	2.69
Dyer, J. E., & Osborne, E. W. (1996)	<i>JAE</i>	19	0.81	1.65
Boyd, B. L., Herring, D. R., & Briers, G. E. (1992)	<i>JOE</i>	16	0.68	1.39
Rockwell, S. K., & Kohn, H. (1989)	<i>JOE</i>	16	0.68	1.39
Torres, R. M., & Cano, J. (1995)	<i>JAE</i>	15	0.64	1.30
Tennessen, D. J., PonTell, S., Romine, V., & Motheral, S. W. (1997)	<i>JOE</i>	13	0.55	1.13
Cano, J., & Garton, B. L. (1994)	<i>JAE</i>	11	0.47	0.96
Buriak, P., & Shinn, G. (1989)	<i>JAE</i>	11	0.47	0.96
Miller, G. (1995)	<i>JAE</i>	11	0.47	0.96
Roegge, C. A., & Russell, E. B. (1990)	<i>JAE</i>	11	0.47	0.96
Mundt, J. (1991)	<i>JAE</i>	10	0.43	0.87
Murphy, T. H., & Terry, H. R., Jr. (1998)	<i>JAE</i>	10	0.43	0.87
Talbert, B. A., Camp, W. G., & Heath-Camp, B. (1994)	<i>JAE</i>	10	0.43	0.87
Whittington, M. S. (1995)	<i>JAE</i>	10	0.43	0.87
Williams, D. L. (1991)	<i>JAE</i>	10	0.43	0.87
Connors, J. J., & Elliot, J. (1994)	<i>JAE</i>	9	0.38	0.78
Mundt, J. P. Connors, J. J. (1999)	<i>JAE</i>	9	0.38	0.78
Rouse, S. B., & Clawson, B. (1992)	<i>JOE</i>	9	0.38	0.78
Cano, J. (1999)	<i>JAE</i>	8	0.34	0.70
Dyer, J. E., Lacey, R., & Osborne, E. W. (1996)	<i>JAE</i>	8	0.34	0.87
Russell, E. B. (1993)	<i>JOE</i>	8	0.34	0.70
Trede, L. D., & Whitaker, S. (1998)	<i>JOE</i>	8	0.34	0.70
Cantrell, J., Heinshon, A. L., & Doeblner, M. K. (1989)	<i>JOE</i>	7	0.30	0.61

Table 86 (continued)

Author	Journal	<i>f</i>	<i>P</i> Total Citations	<i>P</i> Total Journals
Cano, J., Garton, B. L., & Raven, M. R. (1992)	<i>JAE</i>	7	0.30	0.61
Edwards, M. C., & Briers, G. E. (2001)	<i>JAE</i>	7	0.30	0.61
Hoover, T. S., & Scanlon, D. C. (1991)	<i>JAE</i>	7	0.30	0.61
Johnson, D. M. (1996)	<i>JAE</i>	7	0.30	0.61
McLean, R. C., & Camp, W. C. (2000)	<i>JAE</i>	7	0.30	0.61
Miller, G. (1995)	<i>NACTA</i>	7	0.30	0.61
Newman, M. E., & Johnson, D. M. (1993)	<i>JAE</i>	7	0.30	0.61
Balschweid, M. A., Thompson, G. W., & Cole, R. L. (2000)	<i>JAE</i>	6	0.26	0.52
Born K. A., & Miller, G. (1999)	<i>JAE</i>	6	0.26	0.52
Culp, K., III. (1996).	<i>JAE</i>	6	0.26	0.52
Garton, B. L., & Chung, N. (1996)	<i>JAE</i>	6	0.26	0.52
Humphrey, J. K., Stewart, B. R., & Linhardt, R. E. (year)	<i>JAE</i>	6	0.26	0.52
Lippert, R. M., Plank, O., Camberato, J., & Chastain, J. (1998)	<i>JAE</i>	6	0.26	0.52
Marrison, D. L. & Frick, M. J. (1994)	<i>JAE</i>	6	0.26	0.52

Overall Frequently Cited Referenced Works

Referenced work adds to understanding and the literature base of the agricultural education discipline. In an effort to better understand where the discipline is securing information, to support the contexts of the peer discipline areas in agricultural education, this research used content analysis to analyze cited referenced books and/or texts; other journals (not identified as premier AGED journals in the field study); proceedings, conferences, and meetings; other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and web pages. To better understand the

scope of the discipline works cited in the above mentioned areas were analyzed in the five researched premier AGED journals.

Books/Texts

The premier agricultural education journals cited referenced books and texts 6,071 times. Content analysis was used to determine the most frequently cited books and texts in *JAE*, *JIAEE*, *NACTA*, *JAC*, and *JOLE*. Books with multiple edition and publication dates are noted in the following table. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method*, which was cited 12.51% in the total analyzed research articles (2.37% in the total premier AGED book citations). The second most frequently cited referenced book was Davis' (1971) *Elementary Survey Analysis*, which was referenced 5.30%. Ary, Jacobs, and Razavieh's (2002) *Introduction to Research in Education* was the third most frequently cited referenced book (4.60%). The fourth most frequently cited referenced book was Gall, Borg, and Gall (1996) *Educational Research: An Introduction* (3.39%). Rogers (1995). *Diffusion of Innovations* was the fifth most frequently cited referenced book being cited 3.30%. A list of frequently cited referenced books and texts identified 0.25% or more in total book citations or 1.30 or more in the journal articles, are identified in Table 87.

Table 87

Frequently Cited Books and Texts in Premier Agricultural Education Journals 1997 – 2006 (Total AGED Journal citations N = 6,071, Total AGED Journal Articles = 1,151)

Book and Text	<i>f</i>	<i>P</i> Total Citations	<i>P</i> Total Journals
Dillman, D. A. (2000; 1987; 1978). Mail and Internet surveys: The tailored design method (2nd ed.; 1st ed.). New York: John Wiley and Sons, Inc.	144	2.37	12.51
Davis, J. A. (1971). Elementary survey analysis. Englewood Cliffs, NJ: Prentice Hall.	61	1.00	5.30
Ary, D., Jacobs, L. C., & Razavieh, A. (2002; 1996). Introduction to research in education (6th ed.; 5th ed.). Belmont, CA: Wadsworth Thompson Learning.	53	0.87	4.60
Gall, M. D., Borg, W. R., & Gall, J. P. (1996). Educational research: An introduction (6th ed.). White Plains, NY: Longman Publishers USA.	39	0.64	3.39
Rogers, E.M. (1995; 1983). Diffusion of innovations (4th ed; 3rd ed.). New York: The Free Press.	38	0.63	3.30
Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage.	27	0.44	2.35
Patton, M. Q. (1990). Qualitative evaluation and research methods (2nd ed.). Newbury Park, CA: Sage.	25	0.41	2.17
Borg, W., & Gall, M. (1994; 1989; 1983). Educational Research: An introduction. (5th ed.; 4th ed.; 3rd ed.). White Plains: Longman.	24	0.40	2.09
Cohen, J. (1988; 1977; 1969). Statistical power and analysis for the behavioral sciences (3rd ed.; 2nd ed.; 1st ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.	20	0.33	1.74
Miles, M. B., & Huberman, A. B. (1994). Qualitative data analysis: A sourcebook of new methods. Beverly Hills, CA: Sage Publications.	20	0.33	1.74

Table 87 (continued)

Book and Text	<i>f</i>	<i>P</i> Total Citations	<i>P</i> Total Journals
Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Chicago: Rand McNally College Publishing Company.	19	0.31	1.65
Fishbein, M., & Ajzen, I. (1975). Beliefs, Attitudes, Intentions, and Behaviors. Reading, MA: Addison- Wesley Publishing Company.	18	0.30	1.56
Kouzes, J. M., & Posner, B. Z. (2002; 1997; 1995; 1990; 1987) The leadership challenge: How to get extraordinary things done in organization (4th ed.; 3rd ed; 2nd ed.; 1st ed.). San Francisco: Jossey-Bass Publishers.	17	0.28	1.48
Seevers, B., Graham, D., Gamon, J., & Conklin N. (1997). Education through Cooperative Extension. Albany, NY, Delmar Publishers.	17	0.28	1.48
Kerlinger, F. N. (1986; 1973). Foundations of behavioral research. (3rd ed.; 2nd ed.). New York: Holt, Rinehart, and Winston.	15	0.25	1.30

Journals

The premier AGED research articles cited referenced journals, other than those identified as premier AGED journals, 4,570 times. Journal articles were analyzed to determine the most frequently cited referenced journals in the 1,151 AGED research articles. The most frequently cited referenced journal was the *Journal of the American Association of Teacher Educators in Agriculture*. The journal was referenced 3.98%. The second most frequently cited referenced journal was *The American Journal of Distance Education*, which was referenced 1.58%. Two cited referenced journals were

identified as the third most frequently cited referenced journals (1.05%) The journals were *Educational and Psychological Measurement* and the *Journal of the American Dietetic Association*. The fourth most frequently cited journals, in the premier AGED journal articles was *Educational Leadership* (0.94%). The fifth most identified frequently cited referenced journals was the *Journal of Leadership Studies* cited 0.83%. A list of frequently cited referenced journals identified 0.28% or more (excluding premier AGED journals) in the premier AGED journals from 1997 to 2006, are identified in Table 88.

Table 88

Frequently Cited Journals in Premier Agricultural Education Journals 1997 – 2006
(Total AGED Journal citations $N = 4,570$)

Other Journal	<i>f</i>	<i>P</i> Total Citations
The Journal of the American Association of Teacher Educators in Agriculture	182	3.98
The American Journal of Distance Education	72	1.58
Educational and Psychological Measurement	48	1.05
Journal of the American Dietetic Association	48	1.05
Educational Leadership	43	0.94
Journal of Leadership Studies	38	0.83
Journal of Teacher Education	37	0.81
HortTechnology	34	0.74
Journal of Vocational Education Research	32	0.70
Review of Educational Research	31	0.68
Phi Delta Kappan	30	0.66
Journal of Applied Psychology	28	0.61
Journalism Quarterly	25	0.55
Journal of Nutrition Education	24	0.53
American Journal of Agricultural Economics	23	0.50
Wildlife Society Bulletin	23	0.50
Family Relations	22	0.48
Journal of Research in Science Teaching	22	0.48

Table 88 (continued)

Other Journal	<i>f</i>	<i>P</i> Total Citations
American Psychologist	19	0.42
Journal of Educational Psychology	19	0.42
Journal of Volunteer Administration	19	0.42
ACE Quarterly	18	0.39
Harvard Business Review	17	0.37
Journal of Environmental Education	17	0.37
The Chronicle of Higher Education	17	0.37
American Journal of Alternative Agriculture	16	0.35
Journal of Forestry	16	0.35
Training and Development Journal	16	0.35
Human Relations	14	0.31
Journal of Soil and Water Conservation	14	0.31
Educational Researcher	13	0.28
Psychological Reports	13	0.28
Vocational Education Journal	13	0.28

Proceedings, Conferences, and Meetings

In the 1,151 analyzed premier AGED journals, there were 1,082 cited references to proceedings, conferences, and/or meetings. The most frequently cited referenced proceeding, conference, and/or meeting was the *National Agricultural Education Research Conference*. The conference proceeding was referenced 35.95%. The second most frequently cited referenced proceeding, conference, and/or meeting was the *Central Region Agricultural Education Research Conference*, which was referenced 6.28%. The third most frequently cited referenced proceeding, conference, and/or meeting, in the premier AGED journals, was the *Southern Agricultural Education Research Conference* (4.99%). The *Association for International Agricultural and Extension Education* was

cited 3.42% and the *Agricultural Communicators in Education Conference* was cited 2.13%. Table 89 contains a list of frequently cited referenced proceeding, conference, and/or meeting identified 1.11% or more of the premier AGED research proceedings citations, from 1997 to 2006.

Table 89

Frequently Cited Proceedings, Conferences, and Meetings in Premier Agricultural Education Journals 1997 – 2006 (N = 1,082)

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
National Agricultural Education Research Conference	389	35.95
Central Region Agricultural Education Research Conference	68	6.28
Southern Agricultural Education Research Conference	54	4.99
Association for International Agricultural and Extension Education	37	3.42
Agricultural Communicators in Education Conference	23	2.13
Western Region Agricultural Education Research Conference	20	1.85
Southern Association of Agricultural Scientist Conference	13	1.20
Eastern Region Agricultural Education Research Conference	12	1.11

Other Works

The premier agricultural education journals cited referenced other works 2,352 times. Journal articles were analyzed to determine the types (dissertations, manuscripts, newspapers, government documents, etc.) and most frequent citations of works. A list of frequently cited referenced other works identified 0.55% or more, in the premier AGED

journals from 1997 to 2006, are identified in Table 90. The most frequently cited referenced other works were unpublished doctoral dissertations identified 18.62%. The second most frequently cited referenced other works were ERIC documents, referenced 9.91%. Magazines were the third most frequently cited other works (9.06%). The fourth most frequently cited referenced other works were university manuscripts, cited 8.76%. Census and government documents were the fifth most cited referenced other works identified 8.08%. Unpublished Master of Science theses were referenced 6.8%. The seventh most cited referenced other works were unpublished manuscripts and reports (6.42%). Additional other works cited 5.06% or less, in the premier agricultural education journals, are identified in the table below.

Table 90

Frequently Cited Other Works in Premier Agricultural Education Journals 1997 – 2006
(*N* = 2,352)

Other Work	<i>f</i>	<i>P</i>
Unpublished Doctoral Dissertation	438	18.62
ERIC Documents	233	9.91
Magazines	213	9.06
University Manuscript	206	8.76
Census/Government Documents	190	8.08
Unpublished M.S. Thesis	160	6.80
Unpublished Manuscripts or Reports	151	6.42
Extension Manuscript	119	5.06
Newspapers	82	3.49
Annual or Final Reports	62	2.64
Manuscript Submitted for Publication	39	1.66
Policy and Laws	29	1.23
Food and Agriculture Organization Reports	27	1.15
Personal Communication	24	1.02
National Research Reports	18	0.77

Table 90 (continued)

Other Work	<i>f</i>	<i>P</i>
	13	
Raw Data		0.55

Web Pages

The 1,151 research articles in the premier AGED journals from 1997 to 2006 cited referenced web pages 1,165 times, as identified in Table 91. The most frequently cited referenced web pages were .org websites; referenced 30.0%. The second most frequently cited referenced web pages were .edu sites; referenced 28.1%. The third most frequently cited referenced web pages, in AGED journals, were .gov sites referenced 23.2%. Web pages with .com indexes were referenced 8.4%. Web pages with .us indexes were referenced 1.9%. The sixth most frequently cited web pages were .ca and .net sites (1.2%).

Table 91
Frequently Cited Web Pages in Premier Agricultural Education Journals 1997 – 2006
(*N* = 1,165)

Web page	<i>f</i>	<i>P</i>
.org	349	30.0
.edu	327	28.1
.gov	270	23.2
.com	98	8.4
.us	22	1.9
.ca	14	1.2
.net	14	1.2

National Research Agenda Analysis

Research themes identified in the premier AGED journals were used to analyze the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007). Data (research themes) from the content analysis were transformed based on National Research Agenda content categorizes. Transformed data were used to identify frequencies and gaps in the agricultural education discipline.

There are 22 research priority areas outlined in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007). The agenda outlines research priority areas in the following areas: agricultural communications; agricultural leadership; agricultural education in domestic and international settings: Extension and outreach; agricultural education in university and postsecondary settings; and agricultural education in schools.

Table 92 outlines research priority areas (RPA) and descriptions associated with each RPA as listed in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007). RPA 1 through 4 relate to agricultural communications. RPA 5 through 8 relate to agricultural leadership. RPA 9 through 13 relate to agricultural education in domestic and international settings: Extension and outreach. RPA 14 through 17 relate to agricultural education in university and postsecondary settings. RPA 18 through 22 relate to agricultural education in schools. The following table identifies the primary and secondary research theme frequencies, derived from research themes identified during the content analysis of premier AGED journals, as the research themes relate to the National Research Agenda.

RPA 9 (ascertain the public's knowledge, views and openness regarding the agri-food and natural resource system) was the most frequently identified research priority area (26.2%). RPA 12 (examine appropriate nonformal educational delivery systems) was the second most frequently identified research priority area (23.8%). RPA 2 (within and among societies, aid the public in effectively participating in decision making related to agriculture) was the third most frequently identified research priority area (22.2%). RPA 13 (identify and use evaluation systems to assess program impact) was the fourth most frequently identified research priority area (21.6%). RPA 20 (increase access to agricultural education instruction and programming) was the fifth most frequently identified research priority area (21.5%). RPA 1 (enhance decision making within the agricultural sectors of society) was the least frequently identified priority area (7.9%). Research priority areas with the highest frequencies of research currently occurring was agricultural education in domestic and international settings: Extension and outreach.

There were no gaps identified in the National Research Agenda. Gaps are areas of research outlined in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) (benchmark) that have not been seen in past research as identified during the content analysis of premier AGED journals (experience-based). However, there were research themes that were not categorized into the National Research Agenda yet they were identified in research articles analyzed in the premier agricultural education journals from 1997 to 2006. Those research theme areas were: funding (resource development/needs), graphic design, policy issues, research (methods

and models), and writing. All research priority areas outlined in the National Research Agenda are currently occurring in research published in premier agricultural education journals between 1997 and 2006.

Table 92

Summary of Primary and Secondary Research Themes Related to the Priority Areas of the National Research Agenda (N = 2,302)

RPA	Research Priority	<i>f</i>	<i>P</i>
1	Enhance decision making within the agricultural sectors of society.	182	7.9
2	Within and among societies, aid the public in effectively participating in decision making related to agriculture.	510	22.2
3	Build competitive societal knowledge and intellectual capabilities.	480	20.9
4	Develop effective agricultural work forces for knowledge-based societies.	346	15.0
5	Develop and disseminate effective leadership education programs.	367	15.9
6	Support leadership opportunities for underrepresented populations.	257	11.2
7	Ensure leader succession in sustaining agricultural enterprises, and enhance citizen engagement in rural and urban community development.	193	8.3
8	Engage citizens in community action through leadership education and development.	399	17.3
9	Ascertain the public's knowledge, views and openness regarding the agri-food and natural resource system.	604	26.2
10	Identify the needs and competencies of stakeholders and professional practitioners in nonformal agricultural extension education.	285	12.4
11	Identify appropriate learning systems to be used in nonformal education settings.	249	10.8
12	Examine appropriate nonformal educational delivery systems.	547	23.8
13	Identify and use evaluation systems to access program impact.	498	21.6

Table 92 (continued)

RPA	Research Priority	<i>f</i>	<i>P</i>
14	Recruit and prepare students for the future workforce in the agricultural and life sciences.	199	8.6
15	Improve the success of students enrolled in agricultural and life sciences academic and technical programs.	405	17.6
16	Enhance the effectiveness of agricultural and life science faculty.	341	14.8
17	Assess the effectiveness of educational programs in agricultural and life sciences.	305	13.2
18	Enhance program delivery models in agricultural education.	358	15.6
19	Provide a rigorous, relevant, standard-based curriculum in agricultural, food, and natural resources systems.	414	18.0
20	Increase access to agricultural education instruction and programming.	494	21.5
21	Prepare and provide an abundance of fully qualified and highly motivated agricultural educators at all levels.	289	12.6
22	Determine the effects of agricultural education instruction.	208	9.0

Summary of Findings

This chapter presented the findings obtained by this study. Results presented addressed the objectives of the study, which examined the research published in premier research journals in agricultural education from 1997 to 2006. The primary and secondary research themes in the discipline were identified and used to examine the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007). Results of the field study were reported and were used to identify the premier AGED journals in the agricultural education discipline. Results are also presented that addressed the objectives of identifying primary and secondary research themes by year, prolific authors, research methods and types, frequently cited referenced AGED authors,

frequently cited reference works, and compiling this information for all premier AGED journals. The results of the compilation were used to analyze the National research Agenda to determine strengths, weaknesses, gaps, and voids in agricultural education.

A field study was used to identify the premier journals in agricultural education. The identified journals were: the *Journal of Agricultural Education* (93%), the *Journal of International Agricultural and Extension Education* (67%), the *Journal of Extension* (63%), the *North American Colleges and Teachers of Agriculture Journal* (48%), the *Journal of Applied Communications* (41%), and the *Journal of Leadership Education* (41%). The *North American Colleges and Teachers of Agriculture Journal* was not included in the content analysis.

The *Journal of Agricultural Education (JAE)* was analyzed using all research articles published in the journal from 1997 through 2006. There were 323 articles analyzed. There were 39 primary research theme areas identified in *JAE*. The most frequently identified primary research theme was teacher preparation and competence (10.2%). There were 37 secondary research theme areas identified. The most frequently identified secondary research theme was teacher preparation and competence (11.8%). *JAE* journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme with the highest frequency by year was teacher preparation and competence in 2006 (23.8%). The secondary research theme with the highest frequency by year was teacher preparation and competence in 2006 (21.4%). There were 751 authors identified in the analyzed *JAE* research articles. The most prolific author was James Dyer (9.0%). Quantitative research methods were the most

common (80.5%). The most frequent research method types were survey methods (45.5%). There were 808 *JAE* referenced citations in *JAE*. The most frequently cited referenced *JAE* citation was Dyer, J. E., & Osborne, E. W. (1996) (2.1%). There were 11 *JIAEE* referenced citations. The most frequently cited referenced *JIAEE* citation was Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994) and Chizari, M. Lindner, J. R., & Basharddoost, R. (1997) (27.3%). There were 136 *JOE* referenced citations. The most frequently cited referenced *JOE* citation was Miller, L., & Smith, K. (1983) (33.1%). There were 69 *NACTA* referenced citations. The most frequently cited referenced *NACTA* citation was Miller, G. (1995) (8.7%). There were 31 *JAC* referenced citations. The most frequently cited referenced *JAC* citation was Reisner, A. (1990) (16.1%). There was one *JOLE* reference citations, it was Stedman, N., & Rudd, R. (2004) (100%). There were 1,056 referenced citations to the identified premier AGED journals in the *Journal of Agricultural Education*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work in *JOE* (4.26%). There were 2,311 cited referenced books, in *JAE*. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (2.68%). There were 1,750 cited referenced journals, other than the identified premier AGED journals, in the *Journal of Agricultural Education*. The most frequently cited referenced journal was the *Journal of the American Association of Teacher Educators in Agriculture* (10.4%). There were 597 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceedings, conferences, and/or meetings was the *National Agricultural Education Research Conference* (59.5%). There

were 1,037 cited referenced other works identified in *JAE*. The most frequently cited referenced other works were unpublished doctoral dissertations (26.9%). There were 354 cited referenced web pages identified in the *Journal of Agricultural Education*. The most frequently cited referenced web pages were .org sites (32.0%).

The *Journal of International Agricultural and Extension Education (JIAEE)* was analyzed using all research articles published in issues I and III from 1997 through 2006. There were 144 articles analyzed. There were 27 primary research theme areas identified in *JIAEE*. The most frequently identified primary research theme was evaluation (16.0%). There were 31 secondary research theme areas identified. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (11.1%). *JIAEE* journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme with the highest frequency by year was evaluation in 1997 (36.4%). The secondary research theme with the highest frequency by year was food, agriculture, natural resources, health, and family in 1998 (36.4%). There were 329 authors identified in the analyzed *JIAEE* research articles. The most prolific authors were Mohammad Chizari, Barnabas Dlamini, and James Lindner (6.3%). Quantitative research methods were the most common (75.7%). The most frequent research method types were survey methods (45.8%). There were 65 *JAE* referenced citations in *JIAEE*. The most frequently cited referenced *JAE* citations were Chizari, M., Karbasioun, M., & Lindner, J. R. (1998); Findlay, H. J. (1992); Ibezim, D. O., & McCracken, J. D. (1994); Lindner, J. R., & Dooley, K. E. (2002); and Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001) (4.6%). There were 107 *JIAEE*

referenced citations. The most frequently cited referenced *JIAEE* citation was Acker, D. G., & Scanes, C. G. (2000) and Acker, D. G., & Scanes, C. G. (1998) (4.7%). There were 49 *JOE* referenced citations. The most frequently cited referenced *JOE* citation was Miller, L., & Smith, K. (1983) (18.4%). There were 11 *NACTA* referenced citations. The most frequently cited referenced *NACTA* citations were Mason, S., Eskridge, K., Kliewer, B., Bonifas, G., Deprez, J., Medinger Pallas, C., & Meyer, M. (1994) and Newcomb, L. H., & Clark, R. W. (1985) (27.3%). There were 2 *JAC* referenced citations. The citations were Buchili, V., & Pearce, B. (1974) and Suvedi, M, Campo, S., & Lapinski, M. K. (1999) (50%). There were no *JOLE* reference citations, in *JIAEE*. There were 234 referenced citations to the identified premier AGED journals in the *Journal of International Agricultural and Extension Education*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work in *JOE* (3.8%). There were 886 cited referenced books, in *JIAEE*. The most frequently cited referenced book was Rogers' (1995) *Diffusion of Innovations* (0.9%). There were 447 cited referenced journals, other than the identified premier AGED journals, in the *Journal of International Agricultural and Extension Education*. The most frequently cited referenced journal was the *South African Journal of Agricultural Extension* (3.13%). There were 194 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceedings, conferences, and/or meetings was the *Association for International Agricultural and Extension Education Conference* (14.3%). There were 399 cited referenced other works identified in *JIAEE*. The most frequently cited referenced other works were unpublished doctoral dissertations (13.3%).

There were 126 cited referenced web pages identified in the *Journal of International Agricultural and Extension Education*. The most frequently cited referenced web pages were .org sites (37.3%).

The *Journal of Extension (JOE)* was analyzed using all research (in brief) articles and feature articles with research methodologies published in the journal from 1997 through 2006. There were 548 articles analyzed. There were 44 primary research theme areas identified in *JOE*. The most frequently identified primary research theme was food, agriculture, natural resources, health, and family (23.4%). There were 42 secondary research theme areas identified. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (14.2%). *JOE* journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme with the highest frequency by year was food, agriculture, natural resources, health, and family in 2003 (35.1%). The secondary research theme with the highest frequency by year was food, agriculture, natural resources, health, and family in 1999 (22.5%). There were 1,518 authors identified in the analyzed *JOE* research articles. The most prolific author was Rama Radhakrishna (2.0%). Quantitative research methods were the most common (67.9%). The most frequent research method types were survey methods (38.8%). There were 38 *JAE* referenced citations in *JOE*. The most frequently cited referenced *JAE* citation was Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001) (15.8%). There were 6 *JIAEE* referenced citations. The most frequently cited referenced *JIAEE* citation was Mattlocks, D., & Steele, R. (1994) (33.3%). There were 773 *JOE* referenced citations. The most

frequently cited referenced *JOE* citation was Miller, L., & Smith, K. (1983) (2.6%).

There were 5 *NACTA* referenced citations all were referenced once. They were Coulter, K. J. (1985); Eversole, D. E. (1990); Rudd, R., Baker, M., & Hoover, T. (1998); Seevers, B. S., & Foster, B. B. (2003); and William, R. D. (2002) (20.0%). There were 19 *JAC* referenced citations. The most frequently cited referenced *JAC* citation was Suvedi, M., Campo, S., & Lapinski, M. K. (1999) (15.8%). There were no *JOLE* referenced citations in *JOE*. There were 840 referenced citations to the identified premier AGED journals in the *Journal of Extension*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work published in *JOE* (2.4%). There were 1,942 cited referenced books, in *JOE*. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (2.99%). There were 1,545 cited referenced journals, other than the identified premier AGED journals, in the *Journal of Extension*. The most frequently cited referenced journal was the *Journal of the American Dietetic Association* (3.11%). There were 168 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceedings, conferences, and/or meetings was the *National Agricultural Education Research Conference* (8.3%). There were 672 cited referenced other works identified in *JOE*. The most frequently cited referenced other works were unpublished doctoral dissertations (10.9%). There were 516 cited referenced web pages identified in the *Journal of Extension*. The most frequently cited referenced web pages were .edu sites (32.0%).

The *Journal of Applied Communications (JAC)* was analyzed using articles identified as research or professional with research methodologies published from 1997 through 2006. There were 91 articles analyzed. There were 22 primary research theme areas identified in *JAC*. The most frequently identified primary research theme was information sources and technology (18.7%). There were 30 secondary research theme areas identified. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (14.3%). *JAC* journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme with the highest frequency by year was information sources and technology in 2001 (50.0%). The secondary research theme with the highest frequency by year was communication management in 2003 (50.0%). There were 222 authors identified in *JAC*. The most prolific authors were Tracy Irani and Ricky Telg (13.2%). Quantitative research methods were the most common (65.9%). The most frequent research method types were survey methods (49.2%). There were 36 *JAE* referenced citations in *JAC*. The most frequently cited referenced *JAE* citation was Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001) (8.3%). There was one *JIAEE* referenced citations. It was Rivera, W. (1996) (100%). There were 37 *JOE* referenced citations. The most frequently cited referenced *JOE* citation was Miller, L., & Smith, K. (1983) (16.2%). There were 5 *NACTA* referenced citations. The citations were: Diebel, P. L., McInnis, M. L., & Edge, W. D. (1998); Miller, G. (1997); Nehiley, J., & Sutherland, J. (1995); O'Kane, M., & Armstrong, J. D. (1997); and Woirhay, J. L., & Menkhaus, D. J. (1996) (20%). There were 64 *JAC* referenced citations. The most frequently cited

referenced *JAC* citation was Reisner, A. (1990) (6.3%). There were no *JOLE* reference citations, in *JAC*. There were 143 referenced citations to the identified premier AGED journals in the *Journal of Applied Communications*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work in *JOE* (4.2%). There were 584 cited referenced books, in *JAC*. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (2.74%). There were 608 cited referenced journals, other than the identified premier AGED journals, in the *Journal of Applied Communications*. The most frequently cited referenced journal was the *Journalism Quarterly* (4.11%). There were 104 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceedings, conferences, and/or meetings was the *Agricultural Communicators in Education Conference* (17.3%). There were 171 cited referenced other works identified in *JAC*. The most frequently cited referenced other works were newspapers (10.5%). There were 122 cited referenced web pages identified in the *Journal of Applied Communications*. The most frequently cited referenced web pages were .org sites (32.0%).

The *Journal of Leadership Education (JOLE)* was analyzed using all articles with research methodologies published in the journal from its inception in 2002 through 2006. There were 45 articles analyzed. There were 17 primary research theme areas identified in *JOLE*. The most frequently identified primary research theme was leadership development (31.1%). There were 23 secondary research theme areas identified. The most frequently identified secondary research theme was leadership

education (17.8%). *JOLE* journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme with the highest frequency by year was leadership education in 2002 (45.5%). The secondary research theme with the highest frequency by year was leadership education in 2006 (25.0%). There were 83 authors identified in the analyzed *JOLE* research articles. The most prolific author was Christine Townsend (8.9%). Quantitative research methods were the most common (64.4%). The most frequent research method types were historical methods (20.0%). There were 31 *JAE* referenced citations in *JOLE*. The most frequently cited referenced *JAE* citation was Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001) (9.7%). There were no *JIAEE* referenced citations in *JOLE*. There were 26 *JOE* referenced citations. The most frequently cited referenced *JOE* citation was Ladewig, H., & Rohs, F. R. (2000) (11.5%). There were 2 *NACTA* referenced citations. They were Klein, M. K. (1990) and Rohs, F. R., & Langone, C. A. (1998) (50.0%). There were no *JAC* referenced citations. There were 16 *JOLE* referenced citations in *JOLE*. The most frequently cited referenced *JOLE* citation was Hoover, T. S., & Webster, N. (2004) (18.8%). There were 75 referenced citations to the identified premier AGED journals in the *Journal of Leadership Education*. The most frequently cited referenced authors were: Hoover and Webster (2004) for work cited from *JOLE*; Ladewig and Rohs (2000) for work cited from *JOE*; Lindner, Murphy, and Briers (2001) for work published in the *JAE*; and Seevers and Dormody (1994) for work cited from *JAE* (4.0%). There were 348 cited referenced books, in *JOE*. The most frequently cited referenced book was Bass' (1990) *Bass and Stogdill's Handbook of Leadership: Theory, Research, and Managerial*

Applications (2.30%). There were 220 cited referenced journals, other than the identified premier AGED journals, in the *Journal of Leadership Education*. The most frequently cited referenced journal was the *Journal of Leadership Studies* (10.9%). There were 18 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceedings, conferences, and/or meetings was the *Speech Communication Association Conference* (16.7%). There were 73 cited referenced other works identified in *JOLE*. The most frequently cited referenced other works were university manuscripts (19.2%). There were 47 cited referenced web pages identified in the *Journal of Leadership Education*. The most frequently cited referenced web pages were .org sites (44.7%).

The journals identified as premier agricultural education (AGED) journals were analyzed using all research articles published in the respective journals from 1997 through 2006. There were 1,151 articles analyzed. There were 49 primary research theme areas identified in the premier AGED journals. The most frequently identified primary research theme was food, agriculture, natural resources, health, and family (14.16%). There were 49 secondary research theme areas identified. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (11.12%). Premier AGED journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme with the highest frequency was food, agriculture, natural resources, health, and family in 2000 (21.9%). The secondary research theme with the highest frequency by year was food, agriculture, natural resources, health, and family in 2004 (14.7%). Due to the high frequency of the

research theme area food, agriculture, natural resources, health, and family being identified in both the primary and secondary research theme areas, and additional research theme by year was analyzed. The tertiary research theme with the highest frequency by year was needs assessment in 1998 (12.2%). There were 2,903 authors identified in the 1,151 analyzed premier AGED research articles. James Lindner was the most prolific author, authoring or co-authoring 31 of the 1,151 articles (2.69%) from 1997 and 2006. Quantitative research methods were the most common (72.1%). The most frequent research method types were survey methods (40.9%). In the premier AGED journals, there were 2,348 cited references to the six identified premier agricultural education journals, from 1997 to 2006. The most frequently cited referenced premier AGED authors were Miller and Smith (1983) for their work published in the *Journal of Extension* (3.45% total cited references, 7.04% total premier AGED journal articles). There were 6,071 cited referenced books, in the analyzed research articles. The most frequently cited referenced book was Dillman (2000) *Mail and Internet Surveys: The Tailored Design Method* (12.51% in the total analyzed research articles or 2.37% in the total premier AGED book citations). There were 4,570 cited referenced journals, other than the identified premier AGED journals, identified in the 1,151 analyzed AGED research articles. The most frequently cited referenced journal was the *Journal of the American Association of Teacher Educators in Agriculture* (3.98%). There were 1,082 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceedings, conferences, and/or meetings was the *National Agricultural Education Research Conference* (35.95%). There were 2,352 cited referenced other

works identified in compiled analyzed articles. The most frequently cited referenced other works were unpublished doctoral dissertations (18.62%). There were 1,165 cited referenced web pages identified in the analyzed premier AGED articles. The most frequently cited referenced web pages were .org sites (30.0%).

There are 22 research priority areas outlined in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007), in the following areas: agricultural communications; agricultural leadership; agricultural education in domestic and international settings: Extension and outreach; agricultural education in university and postsecondary settings; and agricultural education in schools.

Research themes identified in premier AGED journals were used to analyze research priority areas (RPA) outlined in National Research Agenda. RPA 9 (ascertain the public's knowledge, views and openness regarding the agri-food and natural resource system) was the most frequently identified research priority area (26.2%). RPA 12 (examine appropriate nonformal educational delivery systems) was the second most frequently identified research priority area (23.8%). RPA 1 (enhance decision making within the agricultural sectors of society) was the least frequently identified priority area (7.9%). Research priority areas with the highest frequencies of research currently occurring was agricultural education in domestic and international settings: Extension and outreach.

There were no gaps identified in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007). However, there were research themes that were not categorized into the agenda yet they were identified in research

articles analyzed in the premier agricultural education journals from 1997 to 2006. Those research theme areas were: funding (resource development/needs), graphic design, policy issues, research (methods and models), and writing. All research priority areas outlined in the National Research Agenda are currently occurring in research published in premier agricultural education journals between 1997 and 2006.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to conduct a thorough review of research published in major research journals in agricultural education, with an emphasis on the peer discipline areas, to critically examine the status of the discipline and provide a basis to direct future research. The primary purpose of this study was to determine primary and secondary research themes demonstrated in agricultural education research from 1997 to 2006. The secondary purpose was to examine the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007) to determine frequencies and gaps in the research. “If research and development are to lead the way, we must continually review and evaluate our efforts” (Manneback, McKenna, & Pfau, 1984, p. 1).

Based on the consulted published literature, the following objectives were developed to guide the study.

Objectives of the Study

Four objectives were established to guide this study:

1. Determine premier research article outlets (research journals).
2. Describe published research, from 1997 to 2006, in each of the premier agricultural education research journals identified in objective 1:
 - a. Identify primary and secondary research themes in the identified published research articles.

- b. Identify primary and secondary research themes among research articles published by year.
 - c. Identify the most prolific authors.
 - d. Identify research methods and types.
 - e. Identify the most frequently cited authors in the premier AGED journals (as identified in objective 1).
 - f. Identify the most frequently cited referenced works.
3. Synthesize and compile the research from the premier agricultural education journals from 1997 to 2006:
 4. Determine frequencies and gaps in agricultural education research as compared to the *National Research Agenda: Agricultural Education and Communication 2007-2010* (2007).

Ninety-six individuals were identified as authors in agricultural education as recognized in Delphi research led by Baker, Shinn, and Briers (2007). These individuals were a pre-selected sample used to determine the data source (research journals) in a field study. The data source consisted of research articles published from 1997 to 2006 in the identified premier agricultural education research journals.

A census of research articles was conducted to provide data for the study, with identified research methodologies, published in premier agricultural education journals during the 10 years of interest. A census was used to provide the most reliable and valid discussion of research in the field of agricultural education.

A 10-year window was chosen because research indicates that the 1990s were a time of increase in agricultural education research publications (Sax, Astin, Korn, & Gilmartin, 1999). This expansion brought the need for additional research outlets. Since the expansion, minimal research has been conducted regarding the examination of where the agricultural education discipline has been and where the discipline is headed in the future. Research articles identified in premier agricultural education journals were used to examine primary and secondary research themes in the discipline. Data were collected in the winter of 2006 and spring of 2007. Selected data sources resulted in the examination of 1,151 published research journal articles (*JAE* – 323; *JIAEE* – 144; *JOE* – 548; *JAC* – 91; and *JOLE* – 45).

Content analysis methodologies were employed. Research articles in the identified premier agricultural education research journals from 1997 to 2006 were identified using electronic and library data searches. The tables of contents for each of the research journals were used to ensure all research articles were analyzed. Each research article was coded and data were entered into the code-form. Upon completion of the data collection, the researcher uploaded the data from the server and imported it into a spreadsheet program. Data were analyzed using the SPSS© for Windows statistical package version 15.0. The population was described using descriptive statistics. Frequencies were reported for each objective. The coded research themes emerging (following Lincoln and Guba (1985) procedures) from the content analysis of journals were used to analyze the *National Research Agenda: Agricultural Education and Communications 2007 – 2010* (2007) (gap analysis). The National Research Agenda

(NRA) brochure was coded and research priority areas were analyzed to determine the research theme areas within each identified NRA research priority area. The researcher used a modified version of the code-form to analyze the document. Frequencies were used to identify if gaps existed in agricultural education research. The gap analysis was conducted at the macro level.

Summary of Findings

Objective 1

A field study was used to identify the premier journals in agricultural education (AGED). Respondents listed journals they felt were “premier” in the discipline. The identified journals were the *Journal of Agricultural Education (JAE, 93%)*, *Journal of International Agricultural and Extension Education (JIAEE, 67%)*, *Journal of Extension (JOE, 63%)*, *North American Colleges and Teachers of Agriculture Journal (NACTA, 48%)*, *Journal of Applied Communications (JAC, 41%)*, and *Journal of Leadership Education (JOLE, 41%)*. *North American Colleges and Teachers of Agriculture Journal* and premier research conference proceedings were not included in the content analysis due to concerns expressed by field participants and committee members of possible over-emphasis of research themes.

Objective 2

Journal research articles were analyzed to determine the most frequent primary and secondary research themes utilized in each premier agricultural education journal. There were 39 primary research theme areas identified in *JAE*, and the most frequently identified primary research theme was teacher preparation and competence (10.2%).

There were 37 secondary research theme areas identified in *JAE*, and the most frequently identified secondary research theme was teacher preparation and competence (11.8%).

There were 27 primary research theme areas identified in *JIAEE*, and the most frequently identified primary research theme was evaluation (16.0%). There were 31 secondary research theme areas identified in *JIAEE*, and the most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (11.1%). There were 44 primary research theme areas identified in *JOE*, and the most frequently identified primary research theme was food, agriculture, natural resources, health, and family (23.4%). There were 42 secondary research theme areas identified in *JOE*, and the most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (14.2%). There were 22 primary research theme areas identified in *JAC*, and the most frequently identified primary research theme was information sources and technology (18.7%). There were 30 secondary research theme areas identified in *JAC*, and the most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (14.3%). There were 17 primary research theme areas identified in *JOLE*, and the most frequently identified primary research theme was leadership development (31.1%). There were 23 secondary research theme areas identified in *JOLE*, and the most frequently identified secondary research theme was leadership education (17.8%).

Research articles were analyzed to determine primary and secondary research themes, by year, per each premier AGED journal. The primary research theme with the highest frequency by year in *JAE* was teacher preparation and competence in 2006

(23.8%). The secondary research theme with the highest frequency by year in *JAE* was teacher preparation and competence in 2006 (21.4%). The primary research theme with the highest frequency by year in *JIAEE* was evaluation in 1997 (36.4%). The secondary research theme with the highest frequency by year in *JIAEE* was food, agriculture, natural resources, health, and family in 1998 (36.4%). The primary research theme with the highest frequency by year in *JOE* was food, agriculture, natural resources, health, and family in 2003 (35.1%). The secondary research theme with the highest frequency by year in *JOE* was food, agriculture, natural resources, health, and family in 1999 (22.5%). The primary research theme with the highest frequency by year in *JAC* was information sources and technology in 2001 (50.0%). The secondary research theme with the highest frequency by year in *JAC* was communication management in 2003 (50.0%). The primary research theme with the highest frequency by year in *JOLE* was leadership education in 2002 (45.5%). The secondary research theme with the highest frequency by year in *JOLE* was leadership education in 2006 (25.0%).

Prolific authors in the premier agricultural education journals were identified. There were 751 authors identified in the analyzed *JAE* research articles. The most prolific author was James Dyer (9.0%). There were 329 authors identified in the analyzed *JIAEE* research articles. The most prolific authors were Mohammad Chizari, Barnabas Dlamini, and James Lindner (6.3%). There were 1,518 authors identified in the analyzed *JOE* research articles. The most prolific author was Rama Radhakrishna (2.0%). There were 222 authors identified in *JAC*. The most prolific authors were Tracy

Irani and Ricky Telg (13.2%). There were 83 authors identified in the analyzed *JOLE* research articles. The most prolific author was Christine Townsend (8.9%).

Journal research articles were analyzed to determine research methods and research types. In *JAE*, quantitative research methods were the most common (80.5%), and the most frequent research method types were survey methods (45.5%). In *JIAEE*, quantitative research methods were the most common (75.7%), and the most frequent research method types were survey methods (45.8%). In *JOE*, quantitative research methods were the most common (67.9%), and the most frequent research method types were survey methods (38.8%). In *JAC*, quantitative research methods were the most common (65.9%), and the most frequent research method types were survey methods (49.2%). In *JOLE*, quantitative research methods were the most common (64.4%), and the most frequent research method types were historical methods (20.0%).

Frequently cited referenced works from the identified premier agricultural education journals were analyzed. There were 1,056 referenced citations to the identified premier AGED journals in the *Journal of Agricultural Education*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work published in *JOE* (4.26%). There were 234 referenced citations to the identified premier AGED journals in the *Journal of International Agricultural and Extension Education*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work published in *JOE* (3.8%). There were 840 referenced citations to the identified premier AGED journals in the *Journal of Extension*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work published in *JOE* (2.4%).

There were 143 referenced citations to the identified premier AGED journals in the *Journal of Applied Communications*. The most frequently cited referenced authors were Miller, L., & Smith, K. (1983) for their work published in *JOE* (4.2%). There were 75 referenced citations to the identified premier AGED journals in the *Journal of Leadership Education*. The most frequently cited referenced authors were: Hoover and Webster (2004) for work published in *JOLE*; Ladewig and Rohs (2000) for work published in *JOE*; Lindner, Murphy, and Briers (2001) for work published in *JAE*; and Seevers and Dormody (1994) for their work published in *JAE* (4.0%).

Research articles were used to identify the most frequently cited referenced books in the premier AGED journals. There were 2,311 cited referenced books, in *JAE*, and the most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (2.68%). There were 886 cited referenced books, in *JIAEE*, and the most frequently cited referenced book was Rogers' (1995) *Diffusion of Innovations* (0.9%). There were 1,942 cited referenced books, in *JOE*, and the most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (2.99%). There were 584 cited referenced books, in *JAC*, and the most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (2.74%). There were 348 cited referenced books, in *JOE*, and the most frequently cited referenced book was Bass' (1990) *Bass and Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications* (2.30%).

Journal research articles were used to identify the most frequently cited referenced journals, other than identified premier AGED journals. There were 1,750 cited referenced journals, in *JAE*, and the most frequently cited referenced journal was the *Journal of the American Association of Teacher Educators in Agriculture* (10.4%). There were 447 cited referenced journals, in *JIAEE*, and the most frequently cited referenced journal was the *South African Journal of Agricultural Extension* (3.13%). There were 1,545 cited referenced journals, in *JOE*, and the most frequently cited referenced journal was the *Journal of the American Dietetic Association* (3.11%). There were 608 cited referenced journals, in *JAC*, and the most frequently cited referenced journal was the *Journalism Quarterly* (4.11%). There were 220 cited referenced journals, in *JOLE*, and the most frequently cited referenced journal was the *Journal of Leadership Studies* (10.9%).

Research articles were used to identify the most frequently cited referenced proceedings, conferences, and/or meetings in the premier AGED journals. There were 597 cited referenced proceedings, conferences, and/or meetings, in *JAE*, and the most frequently cited referenced conference was the *National Agricultural Education Research Conference* (59.5%). There were 194 cited referenced proceedings, conferences, and/or meetings, in *JIAEE*, and the most frequently cited referenced conference was the *Association for International Agricultural and Extension Education Conference* (14.3%). There were 168 cited referenced proceedings, conferences, and/or meetings, in *JOE*, and the most frequently cited referenced conference was the *National Agricultural Education Research Conference* (8.3%). There were 104 cited referenced

proceedings, conferences, and/or meetings, in *JAC*, and the most frequently cited referenced conference was the *Agricultural Communicators in Education Conference* (17.3%). There were 18 cited referenced proceedings, conferences, and/or meetings, in *JOLE*, and the most frequently cited referenced conference was the *Speech Communication Association Conference* (16.7%).

Journal research articles were used to identify the most frequently cited referenced other works (unpublished doctoral dissertation, university manuscripts, Extension manuscripts, etc) in the premier AGED journals. There were 1,037 cited referenced other works identified in *JAE*, and the most frequently cited referenced other works were unpublished doctoral dissertations (26.9%). There were 399 cited referenced other works identified in *JIAEE*, and the most frequently cited referenced other works were unpublished doctoral dissertations (13.3%). There were 672 cited referenced other works identified in *JOE*, and the most frequently cited referenced other works were unpublished doctoral dissertations (10.9%). There were 171 cited referenced other works identified in *JAC*, and the most frequently cited referenced other works were newspapers (10.5%). There were 73 cited referenced other works identified in *JOLE*, and the most frequently cited referenced other works were university manuscripts (19.2%).

Research articles were used to identify the most frequently cited referenced web pages in the premier AGED journals. In *JAE*, there were 354 cited referenced web pages identified with the most frequent identified as .org sites (32.0%). In *JIAEE*, there were 126 cited referenced web pages identified with the most frequent identified as .org sites (37.3%). In *JOE*, there were 516 cited referenced web pages identified and the most

frequent were .edu sites (32.0%). In *JAC*, there were 122 cited referenced web pages identified and the most frequent were .org sites (32.0%). In *JOLE*, there were 47 cited referenced web pages identified and the most frequent were .org sites (44.7%).

Objective 3

Data derived from the content analysis of each of the premier agricultural education journals, from 1997 through 2006, were analyzed. There were 1,151 articles analyzed. Forty-nine primary research themes were identified. The most frequently identified primary research theme was food, agriculture, natural resources, health, and family (14.16%). Forty-nine secondary research theme areas identified. The most frequently identified secondary research theme was food, agriculture, natural resources, health, and family (11.12%). Premier AGED journal articles were analyzed to determine primary and secondary research themes by year. The primary research theme area with the highest frequency was food, agriculture, natural resources, health, and family in 2000 (21.9%). The secondary research theme with the highest frequency by year was food, agriculture, natural resources, health, and family in 2004 (14.7%). Due to the high frequency of the research theme area food, agriculture, natural resources, health, and family in both the primary and secondary research theme areas, an additional research theme by year was analyzed. The tertiary research theme with the highest frequency by year was needs assessment in 1998 (12.2%).

There were 2,903 authors identified in the 1,151 analyzed premier AGED research articles. James Lindner was the most prolific author, authoring or co-authoring 31 of the 1,152 articles (2.69%) from 1997 to 2006. James Dyer was the second most

prolific author (2.61%). Greg Miller was the third most prolific author (1.91%). Tracy Irani and Rama Radhakrishna were the fourth most prolific authors (1.56%). The fifth most prolific authors were Rick Rudd and Gary Wingenbach (1.39%).

Research articles were analyzed to determine research methods and types represented in the 1,151 articles. Quantitative research methods were the most common (72.1%), followed by qualitative research methodologies (14.6%), and mixed methods were utilized least (13.3%). The most frequent research method types were survey methods (40.9%). The second most frequent research type was evaluation (14.7%), followed by experimental (9.5%), historical (5.9%), and correlational research (5.3%).

In the premier AGED journals, there were 2,348 cited references to the six identified premier agricultural education journals, from 1997 to 2006. The most frequently cited referenced premier AGED authors were Miller and Smith (1983) for their work published in the *Journal of Extension* (7.04%). Lindner, Murphy, and Briers (2002) were the second most frequently cited referenced AGED journal authors for work published in *JAE* (2.69%). Dyer and Osborne (1996) were the third most frequently cited referenced premier AGED journal authors (1.65%) for research published in *JAE*. Boyd, Herring, and Briers (1992, *JOE*) and Rockwell and Kohn (1989, *JOE*) were identified as the fourth most prolific cited referenced authors (1.37%). The fifth most frequently cited referenced AGED authors were Torres and Cano (1995, *JAE*) (1.30%).

There were 6,071 cited referenced books, in the analyzed research articles. The most frequently cited referenced book was Dillman's (2000) *Mail and Internet Surveys: The Tailored Design Method* (12.51%). The second most frequently cited referenced

book was Davis' (1971) *Elementary Survey Analysis* (5.30%). Ary, Jacobs, and Razavieh's (2002) *Introduction to Research in Education* was the third most frequently cited referenced book (4.60%). The fourth most frequently cited referenced book was Gall, Borg, and Gall's (1996) *Educational Research: An Introduction* (3.39%). Rogers' (1995) *Diffusion of Innovations* was the fifth most frequently cited referenced book (3.30%).

There were 4,570 cited referenced journals, other than the identified premier AGED journals, identified in the 1,151 analyzed AGED research articles. The most frequently cited referenced journal was the *Journal of the American Association of Teacher Educators in Agriculture* (3.98 %). The second most frequently cited referenced journal was *The American Journal of Distance Education* (1.58%). The *Educational and Psychological Measurement* and the *Journal of the American Dietetic Association* were identified as the third most frequently cited referenced journal (1.05%). The fourth most frequently cited referenced journal was *Educational Leadership* (0.94%). The fifth most identified frequently cited referenced journal was the *Journal of Leadership Studies* (0.83%).

There were 1,082 cited referenced proceedings, conferences, and/or meetings. The most frequently cited referenced proceeding, conference, and/or meeting was the *National Agricultural Education Research Conference* (35.95%). The second most frequently cited referenced proceeding, conference, and/or meeting was the *Central Region Agricultural Education Research Conference* (6.28%). The third most frequently cited referenced proceeding, conference, and/or meeting was the *Southern Agricultural*

Education Research Conference (4.99%). The *Association for International Agricultural and Extension Education* was the fourth most frequently cited conference (3.42%). The fifth most frequently cited conference was the *Agricultural Communicators in Education Conference* (2.13%).

Journal research articles were used to identify the most frequently cited referenced other works (unpublished doctoral dissertations, university manuscripts, Extension manuscripts, etc) in the premier AGED journals. There were 2,352 cited referenced other works identified. The most frequently cited referenced other works were unpublished doctoral dissertations (18.62%). The second most frequently cited referenced other works were ERIC documents (9.91%). Magazines were the third most frequently cited other works (9.06%). The fourth most frequently cited referenced other works were university manuscripts (8.76%). Census and government documents were the fifth most cited referenced other works (8.08%).

There were 1,165 cited referenced web pages identified in the analyzed premier AGED articles. The most frequently cited referenced web pages were .org sites (30.0%). The second most frequently cited referenced web pages were .edu sites (28.1%). The third most frequently cited referenced web pages were .gov sites (23.2%). The fourth most frequently cited referenced web pages were .com indexes (8.4%). The fifth most frequently cited web pages were .us sites (1.9%).

Objective 4

There are 22 research priority areas outlined in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007), in the following areas:

agricultural communications; agricultural leadership; agricultural education in domestic and international settings: Extension and outreach; agricultural education in university and postsecondary settings; and agricultural education in schools.

Research themes identified in premier AGED journals were used to analyze research priority areas (RPA) outlined in National Research Agenda. RPA 9 (ascertain the public's knowledge, views and openness regarding the agri-food and natural resource system) was the most frequently identified research priority area (26.2%). RPA 12 (examine appropriate nonformal educational delivery systems) was the second most frequently identified research priority area (23.8%). RPA 1 (enhance decision making within the agricultural sectors of society) was the least frequently identified priority area (7.9%). Research priority areas with the highest frequencies of research currently occurring was agricultural education in domestic and international settings: Extension and outreach.

There were no gaps identified in the *National Research Agenda: Agricultural Education and Communication 2007 – 2010* (2007). However, there were research themes that were not categorized into the agenda yet they were identified in research articles analyzed in the premier agricultural education journals from 1997 to 2006. Those research theme areas were: funding (resource development/needs), graphic design, policy issues, research (methods and models), and writing. All research priority areas outlined in the National Research Agenda are currently occurring in research published in premier agricultural education journals between 1997 and 2006.

Conclusions

The following conclusions were drawn based on the findings of this study. The conclusions are based on a holistic analysis of research articles in the agricultural education discipline from 1997 to 2006.

1. *Journal of Agricultural Education* was identified as the premier journal in agricultural education; however the discipline relies on numerous additional journals as premier research outlets.
2. *The National Agricultural Education Conference* was identified as the premier conference proceeding outlet in the discipline. Additional premier conference proceedings in agricultural education were identified.
3. Variety in research theme areas are seen in all the identified premier agricultural education journals, it is concluded that research in all journals are adding to the scope and topography of the agricultural education discipline.
4. Extensive variety in research theme areas are seen in journals with fewer research articles (*JAC* and *JOLE*).
5. Research theme topics, in all identified premier AGED journals, appear cyclic with research themes moving between primary and secondary and research areas moving out of primary and secondary for a time before cycling back in. The results of the research theme areas are indicative of what the discipline values in terms of research priorities.
6. Numerous researchers add to the scope of the discipline and no single author or authors dominated the discipline. Many researchers, however, fail to publish in

more than one of the identified premier AGED journals and researchers often select one journal and publish extensively in that single outlet.

7. Quantitative survey methodologies monopolize the discipline. Based on research methods and types, agricultural education lacks research methodological diversity and scope.
8. Research in the discipline pulls from an expansive pool of other research works providing signs of an immature discipline.
9. Although the analyzed journals were described by the field participants as premier, often journals are not citing research works from all premier journals. *JAE* and *JIAEE*, research faculty based journals, were the most cited journals in the discipline.
10. The majority of cited works in agricultural education are 1990s or earlier. The discipline must determine if the majority of older works are seminal or out-of-date works.
11. There is a tremendous amount variety in the cited books in the discipline. This variety is an indication that there are multiple works being cited on a single issue.
12. Numerous other journals were identified as premier AGED journals, this is an indication that the discipline does not have premier journals, yet research in the field is evolutionary and evolves from influences by multiple authors and journals.
13. There are a plethora of citations from conference proceedings; this is an indication that conference proceedings should be published research works.

14. Unpublished dissertations are the most prolific cited other works. It is unclear whether these works are being published later as research articles.
15. The discipline relies on citations from non-profit and education web pages. It is not clear whether the discipline is using websites due to a lack of permanent literature, or if these sites are funding agencies, industry standards, etc.
16. When compiling research from multiple agricultural education journals, fragmentation and variety are multiplied. This is an indication that research journals in agricultural education are specialized. They carry with them unique needs, authorships, focus, and impact.
17. Although a framework (National Research Agenda) for future research has been identified, the framework is not futuristic. Past research theme areas in the discipline are excluded in the framework and there were no new research priorities identified. Also, it is not clear which research priority areas are the most important and demand the most focus or if past research is adequately fulfilling each research priority area.

Discussion and Implications

This research joins with concerns expressed by Williams (1991) in that it has been difficult to appraise the impact of agricultural education, and it is equally difficult to see its potential (Williams, 1991). Although a National Research Agenda aids researchers in exploring priority areas in the discipline, it adds little to solving the apparent scatter and lack of rigor in agricultural education.

Objective 1

In 1993, Newcomb identified the need to transform university agricultural education programs and encouraged universities to broaden programs by offering leadership programs, extension education, agricultural communications, and international development, and to add depth to teacher education programs. Since that time programs, and research in these areas have shifted, sometimes increasing and sometimes decreasing. As programs continue to look for niches to attract students, secure funding, and compete on an ultra-competitive academic level, it is critical that agricultural education have a clear picture of the past as well as the future. This research attempted to make murky water a little more clear and voices a call for additional research adjustments.

Boyer (1990) called on American higher education to redefine scholarship with an exclusive focus on conducting and publishing research to a broader view than was currently occurring. Baker, Shinn, and Briers (2007) issued a specific call to examine the knowledge domains of agricultural education. The purpose of this study was to identify the research theme areas exhibited in the peer areas of agricultural education. The study revealed research variety in agricultural education.

Since the 1990s, rapid growth in research and publishing activities in the agricultural education profession have resulted in enormous growth of agricultural literature (Radhakrishna & Jackson, 1995), and new research outlets were created (Sax, Astin, Korn, & Gilmartin, 1999). This study found that new research outlets (*JAC* and

JOLE) have provided venues for additional research publications while also adding to the fragmentation and variety identified in the discipline.

There were many journals identified as premier journals in agricultural education providing an indication that multiple journals are used as outlets for the discipline. Identifying the premier journals appeared challenging for field participants. This is a sign that the discipline has no clear standards of premier or prolific journals in the discipline. A possibility exists that it is unimportant that agricultural education recognize premier journals, yet it is imperative that the discipline understand the research occurring in the field in its multiple outlets.

This is one of the first studies to identify premier agricultural education research journals. Although the researcher believes that most AGED faculty members would not be surprised to see journals such as *Journal of Agricultural Education* and *Journal of International Agricultural and Extension Education* making it into the “premier” journal category, other identified journals may be unexpected. In a holistic effort to better understand the current state of agricultural education with its identified peer discipline areas, some of the less frequently identified “premier” journals were included in the study.

Rudd (2005) indicated that scholarship must continue to improve to be of use to both practitioners and constituents. This research identified differences in each of the premier agricultural education journals in terms of intended audiences. The *Journal of Agricultural Education* and the *Journal of International Agricultural and Extension Education* appear to be faculty research-based. The *Journal of Extension*, the *Journal of*

Applied Communications, and the *Journal of Leadership Education* appear to be practitioner-based. Efforts should be made to serve faculty and practitioner audiences through holistic research journal article content.

Objectives 2 and 3

Research indicates that there is a growing interest in publishing literature that relates to agricultural education and there is a need for literature to be synthesized (Miller, Stewart & West, 2006; Dyer, Haase–Wittler & Washburn, 2003; Radhakrishna & Xu, 1997; Buriak & Shinn, 1993; Moore, 1991; Silva–Guerrero & Sutphin, 1990). This study was one of the first to use the National Research Agenda as a benchmark for futuristic research by analyzing past research themes and comparing the themes to future research priorities. This research assists with the understanding of how select individuals in the discipline feel about the importance and direction of future research priorities.

Knight (1984) and Radhakrishna and Xu (1997) indicated that published research journal articles are indicators of the profession's current state. Although this research adds support to proponents of Knight and Radhakrishna and Xu, it also provides an echo of caution and an evident need for research methodological variety in the discipline. If research occurring over the past 10 years, in the identified premier agricultural education journals, are indicative of all research in the discipline there is a clear need to focus research themes while improving methodological research strategies beyond survey research.

Research in the premier agricultural education journals are adding to the scope and topography of agricultural education. Yet, extensive variety in research theme areas

were identified in journals with fewer research articles (*JAC* and *JOLE*). These journals intensify research theme variety in the discipline. This research identified a lack of specific focus in discipline research themes and no futuristic research theme areas were identified in the National Research Agenda. There is a need to continue to refine, reshape, and restructure the research agenda, research themes, and current research practices in agricultural education.

This study discovered that numerous researchers add to the scope and topography of the discipline and no single author or authors dominated the discipline. Since researchers bring with them a variety of interests in both research topics and strategies, this finding is an important component in research diversity. Many agricultural education research authors fail to publish in more than one of the identified premier *AGED* journal. This apparent journal specialization is a challenge because unless researchers are studying all journal outlets in the discipline they may not be abreast of current research strategies and topics in the field. Like Schulman (2000), this study, notes that scholarship should be susceptible to critical review and evaluation, and assessable for exchange and use by other members of the scholarly community, and adds that researchers in the discipline must be knowledgeable of research occurring in agricultural education in all the peer discipline areas.

There has been criticism regarding research rigor and diversity in the discipline. The findings of this study indicate that the majority of research occurring in agricultural education is survey research. There is a need to engage in alternative research methodologies beyond survey research.

Miller, Stewart, and West (2006) identified the need to review literature and track citations to maintain a clear sense of the discipline's research agenda. This study adds to their work of and provides a glance at some of the citations being referenced in published research. Variety was discovered among cited works and the researcher notes that oft time sources in the 1990s or before were used in support of analyzed research articles. These materials may be seminal works or out-of-date references and may affect the quality of research in the discipline. Miller, Stewart, and West encouraged the discipline to continue to improve and strengthen its research by studying works cited and this study supports that encouragement.

In higher education, research indicates that research productivity plays a major role in attaining academic success and it relates to salary, promotion and tenure, and other fringe benefits of the profession (Kotlik, Barlett, Higgins, & Williams, 2002). Boyer (1990) indicated that researchers should be scholars and take time to step back from the investigation, look for connections, build bridges between theory and practice and communicate knowledge effectively. This research supports Boyer's work but on a larger scale in the context of the discipline. It is important for the numerous researchers, adding to the discipline, to reflect on past research, the national research agenda, and the future of the discipline and make adjustments that will strengthen the discipline and better secure their futures as academic faculty.

The pursuit of knowledge in any discipline is critical and the development of a research base is essential. This research adds to work by Buriak and Shinn (1993) and data from this study can be used to provide a current frame for the discipline to assist

researchers in a clearer picture of past agricultural education research. By understanding past research and the priorities outlined in the *National Research Agenda: Agricultural Education and Communication* researchers can better employ research themes and research methodologies that will assist the discipline in becoming more progressive.

Objective 4

Faculty members must thrive in teaching, scholarship, service, and funding in order to achieve and maintain tenure. Scholarship or research is a critical piece to faculty success. This research supports Buriak and Shinn's (1993) position of the need for a research agenda to: (a) to maintain compatibility with the national priorities for the food and agricultural science system and the educational system, (b) to guide research investments, and (c) to communicate priorities to agencies and organizations that have national responsibilities for planning and budgeting research. However, the researcher expresses caution when adhering to such an agenda. This research discovered that the research agenda is not all encompassing and although it does provide a reasonable framework for the discipline, it is not all inclusive. The discipline currently participates in research areas not included in the agenda. The agenda was also developed to assist with funding efforts in agricultural education and caution must be used so that the discipline is not wielded by the highest dollar but by the needs of the audiences intended to be served.

Peterson (1999) posited that by 2009, a million-dollar research and development agenda focused on the teaching and learning processes in and about agricultural, food and environmental education would provide guidance to the discipline. The *National*

Research Agenda: Agricultural Education and Communication (2007) was the first step in preparing an all-encompassing agenda. However, there is a need to continue to strengthen the agenda by expanding research priority areas into futuristic areas, identifying possible research initiatives to support each area, and identify if each priority area is being adequately researched.

There are a number of forces evoking the need to re-examine agricultural education. This study was one of the first in an attempt to determine if future research priorities outlined for the discipline are adequate. This study indicates a need for the professoriate to continue to identify and adjust futuristic research priorities areas for the discipline and suggestions be made for research initiatives that will serve each research areas. The National Research Agenda was developed to assist with federal funding and although it outlines proponents of agricultural education research it does not adequately outline futuristic research priority areas.

Recommendations for Future Research

The world is changing and will continue to do so making it imperative to continue the search for timeless principles (Collins, 2001). The practices of agricultural education will continue to evolve and change and the professoriate must be ready to meet those changes. Research in the agricultural education discipline must be futuristic and adequately meeting the needs of all audiences.

Today's agricultural educator must be able to adjust to constant changes in the agricultural industry while developing and delivering educational materials that meet the needs of diverse publics. Change is constant, and it brings with it the inability of some

disciplines to reinvent themselves, this has impacted the academic world (Welch, 2005). Agricultural education can not afford to be a discipline that lacks the ability to reinvent itself. This study should be used as a reference to refocus and redefine areas of futuristic interest in discipline.

Ball and Knobloch (2005) indicated that it is critical for practitioners to examine the research base of the practice to allow the profession to reflect upon those actions and ultimately improve the discipline. This study must be one of many future studies to examine the essence of the discipline. Reflections regarding efforts to improve and diversify the discipline must continue.

The research notes that field participants may have been influenced by the field test letter and instrument since peer discipline areas were outlined in these documents. By outlining these peer areas, participants may have been persuaded to list journals that more closely reflected the five areas outlined as peer discipline areas of support. Further research should be completed to determine premier journals in the discipline. Members of the professoriate have worked diligently to move specific agricultural education journals into the social science index. It may be important to research whether getting AGED journals into the index is necessary and/or if it is necessary to even identify premier agricultural education journals. Also, considerations should be made in the identified premier AGED journal article guidelines for publication to include faculty research-based and practitioner-based components in an effort to serve all audiences.

The original intent of this research was to analyze published research journal articles and conference proceeding research articles. However, after the completion of

the field study there were concerns expressed regarding the over-emphasis of certain research articles moving from conference proceedings to journal. Additional research must be completed to determine the depth and scope of research articles moving from conference proceedings to journals.

The researcher notes limitations with the study due to the restricted scope of agricultural educators and practitioners used in the field study. Further research needs to be completed to identify a holistic list of journal outlets in agricultural education and analyses of types and depth of research occurring in these alternative outlets.

The researcher and trained research coders identified research themes and methodologies utilized in research articles from 1997 to 2006 in the identified premier agricultural education journals. It is important for research to be conducted to assess the journal research authors' perceptions of assigned research themes and methodologies in their published articles.

Crunkilton (1988) suggested that a framework be developed to show researchers where they have been and where they can and should go. This research provides an extensive view of the past 10 years of the agricultural education discipline. Past research has identified the need to develop research agendas for agricultural education (Greiman & Birkenholz, 2003; Shinn, 1994; Williams, 1991). the National Research Agenda is one of the first steps to identifying national research agenda priorities. It is essential that individuals assisting in the development and revisions of the National Research Agenda use this study to refine, refocus, and develop futuristic priority areas in the agenda. It is also critical for regional and state research initiatives to be developed.

Additional research must be completed to expand the research themes identified in this study. Broader research themes would assist agricultural education in determining how research in the discipline are incorporated into other disciplines and research initiatives. There also appears to be a pattern in the primary and secondary research themes identified in this study. Further research must be completed to determine if research is cyclic in peer discipline areas, whether the cycles are meaningful, and how potential cycles affect the discipline. It is also essential for research to be conducted to determine if research from peer discipline areas are utilized in all premier AGED journals and the extent to which peer discipline areas of interest are exhibited in the journals.

Faculty members with longstanding success in research are often admired by other faculty members and students and regarded as knowledgeable about most issues in their field (Kotrlik, Barlett, Higgins, & Williams, 2002). These faculty members are viewed as more powerful educators and these individuals often serve as a frame of reference for junior faculty or others who are developing their personal research agenda (Levine, 1997). It is important for prolific authors identified, in this study, to serve as mentors for new and struggling faculty members. An institution of prolific author faculty mentorship programs may strengthen individual faculty members and agricultural education as a whole. It may prove valuable for prolific authors to be surveyed to determine whether or not they believe the promotion and tenure processes are adequate and their recommendations for revisions captured.

Researchers must engage in more diverse research methodologies. Additional research should be completed to determine the depth of survey methodological rigor. Research must continue to determine whether current research methodologies are serving the discipline to maintain progressiveness. Further research must be completed to provide methods and standards for exceptional and rigorous research. Researchers in agricultural education must diversify their methodological research portfolios to include variety in research types.

Across the five premier agricultural education journals there was little consistency with cited referenced works from the premier journals. Additional research should continue to identify the scope and influence of agricultural education journals on other journals utilized in the discipline. It is important to encourage research authors to publish in multiple journals.

The discipline relies on an immense variety of cited referenced works. Further research should be completed to better determine how various cited books influence the discipline. It is important for additional research to be conducted to provide researchers in the field with a list of popular cited books. These books could be utilized by researchers and used as resources by undergraduate and graduate students enrolled in agricultural education courses.

A copious amount of cited referenced journals were utilized in premier journal articles from 1997 to 2006. It is important for additional research to be completed to determine types of research cited in these additional journals and how these alternative published research articles affect agricultural education. It would prove valuable for

research to continue to identify the frequency of agricultural education authors being published in other research journals.

This research identified unpublished doctoral dissertations as the most frequently cited referenced other works in the premier journals from 1997 to 2006. Additional research should be completed to determine if these doctoral dissertations are being published in research journal outlets and if they are not then implications for not publishing dissertations should be identified.

Research, in this study, regarding the *National Research Agenda: Agricultural Education and Communication 2007-2010* (2007) was completed on the macro level. More in-depth research must be conducted to determine which of research priority areas are the most critical and demand the most attention. Research priority areas in the national research agenda are broad and vague. Efforts must be made to clarify each research priority area and suggestions for future research must be made. It is not clear whether research currently occurring in the research priority areas are fulfilling the intentions of the agenda priority. Additional research must be conducted to determine whether current research is meeting the needs of each area or if additional futuristic research is needed. Also, research agendas must be developed on the regional and state levels. Additions, revisions, and deletions to the national research agenda must continue. Finally, agricultural education courses should be adjusted and revised to include research priority areas in the respective peer discipline area.

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APPENDICES

APPENDIX A**IRB Approval**

Institution Number	Protocol PI Name - Full	Protocol Full Title	Protocol Approved To Date
2006-0426	EDGAR, LESLIE D	A 10 Year Content Analysis of the Premier Research Journals and Conference Proceedings in the Field of Agricultural Education, Communications, and Leadership	Monday, August 07, 2006 7:15 PM

APPENDIX B

First Cover Letter

Dear «Faculty Member»:

You have been identified as a leader in the field of Agricultural Education and I need your assistance. The field of agricultural education relies on multiple research journals and conference proceedings to disseminate our findings. A component of my doctoral dissertation is a 10–year content analysis of work published in our research journals and conference proceedings. The study will ascertain primary research themes in terms of research themes, types of research conducted, prolifically-published authors, frequently-cited authors, frequently-cited works, and lastly, how the formation and usage of research in the field of agricultural education has changed over the past 10 years.

The field of agricultural education, including agricultural communications and leadership, has more than a dozen research journals and at least that many conference proceedings used as mediums to disseminate our work. I have identified eight research journals and nine conference proceedings that highlight the depth of research found in the field. To validate my identification, I am asking you to assist me by choosing the premier research journals and conference proceedings in the field of agricultural education.

To determine where we are as a field, this study also examines the research themes found in the field of agricultural education. Based on my review of literature, thirty-seven highly used primary research themes were identified in the form of research themes. As an expert in our field, I seek your assistance to narrow these themes.

After you complete your review of the research journals and conference proceedings and the research themes, please email or fax the document to me no later than **August 20, 2006**. Thank you for your participation and prompt response. If you have any questions please contact Leslie Edgar at the ALEC Department at (979) 862-7650, by email at lmckendrick@aged.tamu.edu, or by fax (979) 845-6296.

Sincerely,

Dr. Tracy Rutherford
Assistant Professor

Leslie McKendrick Edgar
Graduate Research Student

APPENDIX C

Field Questionnaire

A 10–Year Content Analysis to Assess Research Topics of the Agricultural Education Discipline: Future Gap Analysis for the Discipline

1) Please identify the journals you believe are the PREMIER RESEARCH JOURNALS for the field of agricultural education (Check all that apply):

- A) *Journal of Agricultural Education (JAE)*
- B) *Journal of Southern Agricultural Education Research (JSAER)*
- C) *Journal of Vocational Education Research (JVER)*
- D) *Journal of Agricultural Extension (JOE)*
- E) *Journal of International Agricultural & Extension Education (JIAEE)*
- F) *Journal of Applied Communication (JAC)*
- G) *Journal of Leadership Education (JOLE)*
- H) *North American Colleges and Teachers of Agriculture Journal (NACTA)*

2) Are there RESEARCH JOURNALS missing from the list? Please identify those journals:

3) Please identify the proceedings you feel are the PREMIER CONFERENCE PROCEEDINGS for the field of agricultural education (Check all that apply):

- A) North Central Agricultural Education Research Conference (NC-AAAE)
- B) Southern Agricultural Education Research Conference (S-AAAE)
- C) Western Agricultural Education Research Conference (W-AAAE)
- D) American Association for Agricultural Education National Conference (NAERC)
- E) Association for International Agricultural and Extension Education (AIAEE)
- F) Association for Communication Excellence (ACE)
- G) The Southern Association of Agricultural Scientists - Agricultural Communications (SAAS-AgComm)
- H) Association of Leadership Education (ALE)
- I) *North American Colleges and Teachers of Agriculture Journal (NACTA):*

4) Are there CONFERENCE PROCEEDINGS missing from the list? Please identify those conference proceedings:

5) What do you believe are the top five RESEARCH THEMES in the field of agricultural education?

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

6) Based on a review of literature, the following RESEARCH THEMES were identified in the agricultural education field of study. Please review the research themes carefully for appropriateness and determine if any of these research themes can be compiled, condensed, or eliminated:

- A) **Academic Programs** – education degree programs available to students, such as academic preparation, class transferability, academic advising, and the overall quality of education.
- B) **Accountability** – liable to being called to account; answerable; may include the following implementations: visioning, measurability, programming, reporting, and responsibility.
- C) **Agricultural Systems and Production** – biology-based programs (agronomy, plant pathology, horticultural science, animal science, etc.) being modified by people to produce food, fibre, fuel, and other products for human consumption and processing.
- D) **Application of Educational Technology** – the act of applying electronic or digital products and systems in instruction, focuses on the advantages and disadvantages of technology integration into educational settings, usually focuses on money, time, and resources, and the effects on both students and teachers.
- E) **Appropriateness of Education** – looking at all educational processes, activities and programs associated with (in and about) agriculture to determine if the processes are suitable for a particular person, condition, occasion, place, and/or the discipline.
- F) **Biotechnology Communications** –creating products (such as publications, videos, or news stories) that support the biotechnology: the application of

molecular biology techniques to identify genes responsible for particular traits; to clone, study, characterize, and manipulate them; and finally, to insert them into different organisms.

- G) Communication Technology** – the use of electronic or digital products and/or systems develop and disseminate news and marketing information related to food, agricultural and environmental systems including: media relations, public affairs, publishing, printing, exhibits, and photography.
- H) Communication Management** – overseeing the exchange of ideas usually in the form of messages via channels, such as delivery methods and communication preferences of various audiences, web-based information, clipsheets to place story materials in daily and weekly newspapers, electronic media and magazines, building personal relationships and contacts, and editorial content.
- I) Community Development** – assistance to develop economies through educational programming and/or technical assistance; assistance in visioning and strategic planning, assistance in implementing strategies in specific areas such as retail trade development, tourism development, or business attraction, and technical assistance is usually in the forms of: economic base reports, economic impact studies, analysis of retail trends, housing needs assessment, surveys, and/or targeted industry analysis.
- J) Critical Thinking** – the attitude of being disposed to consider in a thoughtful way the problems and subjects that come in the range of one’s experiences – knowledge of the methods of logical inquiry and reasoning – and some skill in applying those methods; also it is the skills in the application of formal and informal logic; originated with work from John Dewey and evolved into reflection and reasonable thinking that is focused on deciding what to believe or do; involves dispositions, abilities and practical activity; new knowledge is learned by combining what an individual already knows with the new information leading to differences in problem-solving behaviors.
- K) Curriculum and Program Development** – an intervention designed to fulfill a societal or academic need usually used to increase competencies; competencies to be considered effective; some of the competencies include: judgment, improvisation, conversation, human qualities, knowledge, practices, skill, and commitment; involves all courses of study offered by an educational institution and/or system of services, opportunities, or projects.
- L) Distance Education** – educational programming at a distance.
- M) Electronic Media** – digital forms used to educate publics usually in the form of news, such as electronic news dissemination, television, video teleconferencing, radio, videos, and/or emails.

- N) Formal and Informal Teaching Approaches** – using planned and unplanned events to assist with the exchange of knowledge; formal teaching is associated with schools; the hierarchically structured, chronologically graded educational system running from primary school through the university and including, in addition to general academic studies, a variety of specialized programs and institutions for full-time and technical training; informal teaching deals with the interpretation or explaining educational primary research themes based on everyday experiences which are not planned or organized (incidental learning via teaching).
- O) Globalization** – a broad process of societal transformation that encompasses jobs, incomes, the food that people eat, the air they breathe, the social and cultural milieu in which they live, broader cultural and social integration, trade investments, travel, the growth of global corporations that transcend national borders to ideas, pollution, microbes, refugees, computer networking, and rapid communication; a contentious process.
- P) Graphic Design** – practice or profession of designing print or electronic forms of visual information; usually in the form of text delivered via different mediums: PowerPoint presentations, animation development, video streaming, etc.
- Q) Information Technology** – focuses on technological mediums to disseminate electronic information, such as the Internet, computers, Internet communication technologies, and web supported information.
- R) Instructional & Program Delivery Approaches** – the use of varying delivery strategies in the educational process usually used to assist with problems, situations, questions, and/or obstacles; examples of approaches: teacher-centered, student-centered, problem solving, subject matter.
- S) International** – travel, research or publications focusing on, relating to, or involving two or more nations; also relating to barriers associated with international work, study, and/or travel such as: approval from your home institution (including how your work will be covered), funding and/or an invitation from a host institution, spousal job considerations, schooling for your kids, and housing.
- T) Institutional Organization** – of or relating to an institution or institutions in relation to act or process of organizing or a group of persons organized for a particular purpose; institutions are dynamic, finite entities; dealing with plans and/or strategic planning; revitalization and renewal.

- U) Leadership Development** – courses, programs, training sessions, etc. developed to assist participants in developing leadership competencies.
- V) Leadership Education** – helping people understand what it means to be a leader and to recognize passion, authenticity, credibility and ethics as the cornerstones upon which to lay the foundation to bring about changes for the greater good.
- W) Leadership Management** – planning, organizing, staffing and human resource management, leading and influencing, and/or controlling groups of people in business management, personnel management, and public-service administration through mobilization of peoples motives and values, various economic, political, and other resources, in a context of competition and conflict, in order to realize goals independently or mutually help by both leaders and followers.
- X) Media Relations** – using various types of media to build mutually beneficial relationships, use of mass media to disseminate information with a cost benefit ratio, mass media for issues interface, use of newspapers, media relations training, etc.
- Y) Needs Assessment** – the systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvement and allocation of resources; used as a tool that helps a community plan for and implement strategies in diverse areas.
- Z) Organizational Leadership** – a complex process by which an individual influences others to accomplish a mission, task or objective associated with a network of people (clubs, organizations, businesses, etc.) the process assists organizations to learn leadership skills such as: teamwork, reasoning, problem solving, decision-making, communication, responsibility, and self esteem.
- AA) Professional Development** – influences that affect the behavior of agricultural personnel, funding, training, areas of employment, etc.
- BB) Program and Instructional Evaluation** – assessment of instructional impact based on assessing baseline behaviors; to make decisions based on reliable, accurate, and complete information.
- CC) Policy Issues** – flowing, passing, or giving out, circulating, distributing, or publishing a plan or course of action, as of a government, political party, or business, intended to influence and determine decisions, actions, and other matters associated with the agricultural discipline; also includes programmatic and budgetary policy changes at the state and federal levels.

DD) Publications – research regarding published material (book, magazine, newspaper, journal, periodical, pamphlet or electronic compilations) this includes readership surveys and research regarding readership.

EE) Research – articles published regarding investigation into specific research areas of the discipline.

FF) Service Learning – learning experiences through hands-on learning while serving others; an experiential education approach that is premised on reciprocal learning; learning flows from service activities – both those providing and those receiving learn from the experience.

GG) Teacher Competence – pedagogical knowledge and skills needed for successful practice of teaching – these competencies distinguish teachers from other professions; preparation procedures to prepare educators to a state or quality of being adequately or well qualified such as: teaching knowledge and skills, in-service, motivation, preparation, developing effective PR programs, utilizing advisory board, using computers in classroom teaching, teaching using experiments, conducting activities, managing student behavior problems, conducting needs assessments and surveys to revise teaching, teaching students problem-solving and decision making skills, developing tech prep programs, etc.

HH) Teacher Preparation – the preparation of individuals for teaching agricultural education programs.

II) Training – To coach in or accustom to a mode of behavior or performance, and/or to make proficient with specialized instruction and practice, and/or to prepare physically, as with a regimen, and/or cause to take a desired course or shape, as by manipulating, and/or focus on or aim at (a goal, mark, or target); direct; identified barriers: culture, language, education, cost of recruiting, and/or retention.

JJ) Volunteer Leadership – training and orientation for volunteers. Instructors must understand pedagogy and andragogy principles, understand learning and learning concepts, and understand expectations of volunteers and the implications for their training and orientation needs.

KK) Writing – articles focusing on literature, characters, or symbols of the discipline also including writing styles, writing habits and or the writing process.

LL) Youth Development – preparing young people to meet challenges by providing them with a foundation that will enable them to make decisions that promote their own positive development.

Additional Comments:

You may email the information to lmckendrick@aged.tamu.edu or fax the information to: (979) 845-6296, Attention: Leslie McKendrick Edgar

Thank you for your time and assistance!

APPENDIX D**Follow-Up Letter**

Dear «Faculty Member»:

Ten days ago, a survey was emailed to you asking you to identify premier research journals and conference proceedings in the field of agricultural education. The questionnaire also sought your assistance to narrow thirty–seven highly used primary research themes (research themes) in the field of agricultural education.

If you have already returned the completed questionnaire, please accept my sincere thank you. If not, please complete the questionnaire and return it via fax or email. We appreciate your response as it will be helpful to ascertain primary research themes in terms of research themes, types of research conducted, prolifically-published authors, frequently-cited authors, frequently-cited works, and lastly, how the formation and usage of research in the field of agricultural education has changed over the past 10 years.

In case you did not receive the questionnaire or if you misplaced it, the questionnaire it is located below this email. If you have questions or need assistance, please contact Leslie Edgar at the ALEC Department at (979) 862-7650, by email at lmckendrick@aged.tamu.edu, or by fax (979) 845-6296.

Sincerely,

Dr. Tracy Rutherford
Assistant Professor

Leslie McKendrick Edgar
Graduate Research Student

APPENDIX E

Second Follow-Up Letter

Dear «Faculty Member»:

A little more than two weeks ago, we emailed you a questionnaire asking you to identify premier research journals and conference proceedings in the field of agricultural education. The questionnaire also sought your assistance to narrow thirty-seven highly used primary research themes (research themes) in the field of agricultural education. As of today, we have not yet received your completed questionnaire. We realize that you may not have had time to complete it. However, we would genuinely appreciate hearing from you.

This study is being conducted as part of a doctoral thesis and we are in need of your assistance. We are writing to you again because the study's usefulness depends on receipt of questionnaires from each respondent. For the information from the study to be truly representative, it is essential that each agricultural education professional return his or her questionnaire. Your response will be helpful to ascertain primary research themes in terms of research themes, types of research conducted, prolifically-published authors, frequently-cited authors, frequently-cited works, and lastly, how the formation and usage of research in the field of agricultural education has changed over the past 10 years.

In the event that your questionnaire has been misplaced, a replacement is located below this email. Please complete the questionnaire and return it via fax or email. We would be happy to answer any questions you have about the study. Please feel free to contact Leslie Edgar at the ALEC Department at (979) 862-7650, by email at lmckendrick@aged.tamu.edu, or by fax (979) 845-6296.

Sincerely,

Dr. Tracy Rutherford
Assistant Professor

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APPENDIX F**Primary and Secondary Research Theme Areas Compressed Via Field Study**

- A)** Academic Programs
- B)** Accountability
- C)** Agricultural Systems, Production, Management
- D)** Appropriateness of Education
- E)** Biotechnology Communications
- F)** Communication Technology
- G)** Communication Management
- H)** Community Leadership & Development
- I)** Critical Thinking
- J)** Curriculum and Program Development
- K)** Distance Education
- L)** Electronic Media
- M)** Formal and Informal Teaching Approaches
- N)** Globalization and Internationalization
- O)** Graphic Design
- P)** Information Technology
- Q)** Instructional & Program Delivery Approaches
- R)** Institutional Organization & Institutionalization
- S)** Leadership Development
- T)** Leadership Education
- U)** Leadership Management
- V)** Media Relations
- W)** Needs Assessment
- X)** Organizational Leadership & Development
- Y)** Professional Development
- Z)** Evaluation
- AA)** Policy Issues
- BB)** Communication of Scholarship (Publications)
- CC)** Research (methods & models)
- DD)** Service & Experiential Learning
- EE)** Teacher Preparation & Competence
- FF)** Volunteer Leadership & Development
- GG)** Writing
- HH)** Youth Leadership & Development

APPENDIX G**Premier Research Journal Outlets in Agricultural Education**

- 1) *Journal of Agricultural Education (JAE)** – 93% response rate*
- 2) *Journal of International Agricultural & Extension Education (JIAEE)** – 67%*
- 3) *Journal of Extension (JOE)** – 63%*
- 4) *NACTA Journal (North American Colleges and Teachers of Agriculture)** – 48%*
- 5) *Journal of Applied Communication (JAC)** – 41%*
- 6) *Journal of Leadership Education (JOLE)** – 41%*
- 7) *Career and Technical Education Research Journal (CTER) – 28%*
- 8) *Journal of Southern Agricultural Education Research (JSAER) – 11%*
- 9) *Journal of Distance Education – 9%*
- 10) *Journal of Career and Technical Education – 7%*

**Journals used throughout this research and identified as premier research journals in Agricultural Education

APPENDIX H

Premier Conference Proceeding Outlets in Agricultural Education

- 1) National Agricultural Education Conference (NAERC) – 87%
- 2) Association for International Agricultural and Extension Education (AIAEE) – 61%
- 3) Association for Communication Excellence (ACE) – 38%
- 4) Southern Agricultural Education Research Conference (S-AAAE) – 33%
- 5) Association of Leadership Education (ALE) – 30%
- 6) North American Colleges and Teachers of Agriculture Conference (NACTA) – 30%
- 7) Western Agricultural Education Research Conference (W-AAAE) – 26%
- 8) North Central Agricultural Education Research Conference (NC-AAAE) – 24%
- 9) The Southern Association of Agricultural Scientists - Agricultural Communications section (SAAS-AgComm) – 13%

APPENDIX I

Content Analysis Coding Directions

Agricultural Leadership, Education, and Communication Content Analysis Information

First of all, I want to thank you for assisting me with this research. This research is critical for allowing those in Agricultural Education to more fully understand the scholarship occurring in the discipline.

You will need to complete the content analysis new form for each article in the journal.

You have been assigned either a journal or a conference proceeding to analyze. If they are electronic you can cut and paste the information into the web form. If you are not dealing with an electronic journal or conference preceding you will need to type in the information.

We are only analyzing research articles so before you begin, we need to define research. Bruce Tuckman defined research in *Conducting Educational Research* by “Research is concerned with the relationship of two or more variables. It is carried out by identifying the problem, examining selected relevant variables, through a literature review, constructing a hypothesis where possible, creating a research design to investigate the problem, collecting and analyzing appropriate data, and then drawing conclusions about the relationship of the variables.” Therefore, if the article does not have a literature review, research objectives and/or hypotheses, you are more than likely looking at an article regarding evaluation, and you will not need to analyze that article.

The Content Analysis form:

You will first need to enter in your initials. Be sure to move your cursor over the written text *initials* and add your initials. Do the same thing to add today’s date in the date field.

Then select one radio button (place your cursor over the radio button and left click your mouse) under journals to indicate the where the article was found..

Then select one radio button indicating the year the article was written.

Now highlight *Article Title* using your cursor and type in or paste in the title of the article. Be sure you type it EXACTLY as it appears in the article.

Next, list the authors of the article. You will list them using APA style. For example, if the article was written by James C. Brown, John E. Doe, and Dave F. Smith. You will type in: Brown, J. C., Doe, J. E., & Smith, D. F.

Primary and Secondary Research Themes

Then you will need to check one radio button to identify the primary research theme. Detailed explanations of primary research theme categories are attached. You may also select a secondary research theme area theme, from the drop down list to the right of the primary theme. You may choose not to identify a secondary research area but you **MUST** identify a PRIMARY area. The research themes were developed using the literature. You should be able to find an area that best suits your article. If not, you may choose to leave this area blank and type in the primary research area into the comments section, located at the bottom of the form.

Research Type and Methods

Now, you will choose a Research Area by selecting one of the following areas from the list: quantitative, qualitative or mixed method (the use of both quantitative and qualitative research).

Quantitative Research – systematic research that includes hard data or data with quantifiable numbers

Qualitative Research – involves an in–depth understanding of human behavior and the reasons that govern human behavior – interviews, case studies, open-ended survey questions

Then in the next field area, identify the exact research method by selecting from the list (Research Methods).

Content Analysis – research tool used to determine the presence of certain words or concepts in texts or sets of texts. Researchers quantify and analyze the presence, meanings and relationships of such words and concepts, then make inferences about the messages in the texts, the writer(s), the audience, and even the culture and time of which these are a part.

Correlation – examines the relationship between variables. The strength and direction of that relationship is described by the coefficient of correlation.

Delphi – using a group of people to narrow research focus. They meet in multiple rounds to narrow down data and determine the most important topics or areas of interest.

Experimental – An attempt by the researcher to maintain control over all factors that may affect the result of an experiment. In doing this, the researcher attempts to determine or predict what may occur.

Evaluation – Evaluation is the systematic acquisition and assessment of information to provide useful feedback about some object.

ExPost Facto – (after-the-fact) explores possible causes and effects with focusing first on the effect, then attempts to determine what caused the observed effect.

THANK YOU!!

Thank you again,
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 435-213-0329 cell

RESEARCH THEMES

Academic Programs – education degree programs available to students, such as academic preparation, class transferability, academic advising, and the overall quality of education.

Accountability – liable to being called to account; answerable; may include the following implementations: visioning, measurability, programming, reporting, and responsibility.

Agricultural Systems and Production – biology-based programs (agronomy, plant pathology, horticultural science, animal science, etc.) being modified by people to produce food, fibre, fuel, and other products for human consumption and processing.

Application of Educational Technology – the act of applying electronic or digital products and systems in instruction, focuses on the advantages and disadvantages of technology integration into educational settings, usually focuses on money, time, and resources, and the effects on both students and teachers.

Appropriateness of Education – looking at all educational processes, activities and programs associated with (in and about) agriculture to determine if the processes are suitable for a particular person, condition, occasion, place, and/or the discipline.

Biotechnology Communications –creating products (such as publications, videos, or news stories) that support the biotechnology: the application of molecular biology techniques to identify genes responsible for particular traits; to clone, study, characterize, and manipulate them; and finally, to insert them into different organisms.

Communication Technology – the use of electronic or digital products and/or systems develop and disseminate news and marketing information related to food, agricultural and environmental systems including: media relations, public affairs, publishing, printing, exhibits, and photography.

Communication Management – overseeing the exchange of ideas usually in the form of messages via channels, such as delivery methods and communication preferences of various audiences, web-based information, clipsheets to place story materials in daily

and weekly newspapers, electronic media and magazines, building personal relationships and contacts, and editorial content.

Community Development – assistance to develop economies through educational programming and/or technical assistance; assistance in visioning and strategic planning, assistance in implementing strategies in specific areas such as retail trade development, tourism development, or business attraction, and technical assistance is usually in the forms of: economic base reports, economic impact studies, analysis of retail trends, housing needs assessment, surveys, and/or targeted industry analysis.

Critical Thinking – the attitude of being disposed to consider in a thoughtful way the problems and subjects that come in the range of one's experiences – knowledge of the methods of logical inquiry and reasoning – and some skill in applying those methods; also it is the skills in the application of formal and informal logic; originated with work from John Dewey and evolved into reflection and reasonable thinking that is focused on deciding what to believe or do; involves dispositions, abilities and practical activity; new knowledge is learned by combining what an individual already knows with the new information leading to differences in problem-solving behaviors.

Curriculum and Program Development – an intervention designed to fulfill a societal or academic need usually used to increase competencies; competencies to be considered effective; some of the competencies include: judgment, improvisation, conversation, human qualities, knowledge, practices, skill, and commitment; involves all courses of study offered by an educational institution and/or system of services, opportunities, or projects.

Distance Education – educational programming at a distance.

Electronic Media – digital forms used to educate publics usually in the form of news, such as electronic news dissemination, television, video teleconferencing, radio, videos, and/or emails.

Formal and Informal Teaching Approaches – using planned and unplanned events to assist with the exchange of knowledge; formal teaching is associated with schools; the hierarchically structured, chronologically graded educational system running from primary school through the university and including, in addition to general academic studies, a variety of specialized programs and institutions for full-time and technical training; informal teaching deals with the interpretation or explaining educational primary research themes based on everyday experiences which are not planned or organized (incidental learning via teaching).

Globalization – a broad process of societal transformation that encompasses jobs, incomes, the food that people eat, the air they breathe, the social and cultural milieu in which they live, broader cultural and social integration, trade investments, travel, the

growth of global corporations that transcend national borders to ideas, pollution, microbes, refugees, computer networking, and rapid communication; a contentious process.

Graphic Design – practice or profession of designing print or electronic forms of visual information; usually in the form of text delivered via different mediums: PowerPoint presentations, animation development, video streaming, etc.

Information Technology – focuses on technological mediums to disseminate electronic information, such as the Internet, computers, Internet communication technologies, and web supported information.

Instructional & Program Delivery Approaches – the use of varying delivery strategies in the educational process usually used to assist with problems, situations, questions, and/or obstacles; examples of approaches: teacher-centered, student-centered, problem solving, subject matter.

International – travel, research or publications focusing on, relating to, or involving two or more nations; also relating to barriers associated with international work, study, and/or travel such as: approval from your home institution (including how your work will be covered), funding and/or an invitation from a host institution, spousal job considerations, schooling for your kids, and housing.

Institutional Organization – of or relating to an institution or institutions in relation to act or process of organizing or a group of persons organized for a particular purpose; institutions are dynamic, finite entities; dealing with plans and/or strategic planning; revitalization and renewal.

Leadership Development – courses, programs, training sessions, etc. developed to assist participants in developing leadership competencies.

Leadership Education – helping people understand what it means to be a leader and to recognize passion, authenticity, credibility and ethics as the cornerstones upon which to lay the foundation to bring about changes for the greater good.

Leadership Management – planning, organizing, staffing and human resource management, leading and influencing, and/or controlling groups of people in business management, personnel management, and public-service administration through mobilization of peoples motives and values, various economic, political, and other resources, in a context of competition and conflict, in order to realize goals independently or mutually help by both leaders and followers.

Media Relations – using various types of media to build mutually beneficial relationships, use of mass media to disseminate information with a cost benefit ratio, mass media for issues interface, use of newspapers, media relations training, etc.

Needs Assessment – the systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvement and allocation of resources; used as a tool that helps a community plan for and implement strategies in diverse areas.

Organizational Leadership – a complex process by which an individual influences others to accomplish a mission, task or objective associated with a network of people (clubs, organizations, businesses, etc.) the process assists organizations to learn leadership skills such as: teamwork, reasoning, problem solving, decision-making, communication, responsibility, and self esteem.

Professional Development – influences that affect the behavior of agricultural personnel, funding, training, areas of employment, etc.

Program and Instructional Evaluation – assessment of instructional impact based on assessing baseline behaviors; to make decisions based on reliable, accurate, and complete information.

Policy Issues – flowing, passing, or giving out, circulating, distributing, or publishing a plan or course of action, as of a government, political party, or business, intended to influence and determine decisions, actions, and other matters associated with the agricultural discipline; also includes programmatic and budgetary policy changes at the state and federal levels.

Publications – research regarding published material (book, magazine, newspaper, journal, periodical, pamphlet or electronic compilations) this includes readership surveys and research regarding readership.

Research – articles published regarding investigation into specific research areas of the discipline.

Service Learning – learning experiences through hands-on learning while serving others; an experiential education approach that is premised on reciprocal learning; learning flows from service activities – both those providing and those receiving learn from the experience.

Teacher Competence – pedagogical knowledge and skills needed for successful practice of teaching – these competencies distinguish teachers from other professions; preparation procedures to prepare educators to a state or quality of being adequately or well qualified such as: teaching knowledge and skills, in-service, motivation,

preparation, developing effective PR programs, utilizing advisory board, using computers in classroom teaching, teaching using experiments, conducting activities, managing student behavior problems, conducting needs assessments and surveys to revise teaching, teaching students problem-solving and decision making skills, developing tech prep programs, etc.

Teacher Preparation – the preparation of individuals for teaching agricultural education programs.

Training – To coach in or accustom to a mode of behavior or performance, and/or to make proficient with specialized instruction and practice, and/or to prepare physically, as with a regimen, and/or cause to take a desired course or shape, as by manipulating, and/or focus on or aim at (a goal, mark, or target); direct; identified barriers: culture, language, education, cost of recruiting, and/or retention.

Volunteer Leadership – training and orientation for volunteers. Instructors must understand pedagogy and andragogy principles, understand learning and learning concepts, and understand expectations of volunteers and the implications for their training and orientation needs.

Writing – articles focusing on literature, characters, or symbols of the discipline also including writing styles, writing habits and or the writing process.

Youth Development – preparing young people to meet challenges by providing them with a foundation that will enable them to make decisions that promote their own positive development.

APPENDIX J**Content Analysis Coding Form**

Academic Programs
Accountability
Agricultural Systems, Production, & Machinery
Application of Educational Technology
Appropriateness of Education
Biotechnology Communications
Communication Technology
Communication Management
Community Development, Programming, & Leadership
Critical Thinking
Curriculum and Program Development
Distance Education
Electronic Media
Formal & Informal Teaching Approaches
Globalization and International
Graphic Design
Information Technology
Institutional Organization
Instructional & Program Delivery Approaches
Leadership Development
Leadership Education
Leadership Management 1
Media Relations
Needs Assessment
Organizational Leadership, culture, development, values, change
Professional Development
Program and Instructional Evaluation
Policy Issues
Publications
Research (methods, procedures, strategies, models)
Service Learning
Teacher Competence (student teachers)
Teacher Preparation
Training
Volunteer Leadership, Management, Development, & Education
Writing
Youth Development, Leadership, & Education

APPENDIX K

Content Analysis Coding Form

[Print Form](#)[Submit by Email](#)**Agricultural Leadership, Education, and
Communication
Content Analysis Form**Your Initials Today's Date Journal Year of Article Title of Article Article Authors Primary Framework Secondary Framework Research Methods Type Research Methods

References used in the Article

JAE citations	<input type="text"/>	JAE authors	<input type="text"/>
JOE citations	<input type="text"/>	JOE authors	<input type="text"/>
JIAEE citations	<input type="text"/>	JIAEE authors	<input type="text"/>
JAC citations	<input type="text"/>	JAC authors	<input type="text"/>
JOLE citations	<input type="text"/>	JOLE authors	<input type="text"/>
NACTA citations	<input type="text"/>	NACTA authors	<input type="text"/>

Book/Text

Other Journals

Proceedings

Other Works

Webpages

Total References

Comments

Thank You!

Submit by Email

Reset Form

APPENDIX L

Expanded Coding List with Coding Numbers

Academic Programs -0
 Accountability -1
 Agricultural Systems and Production – 2
 Application of Educational Technology – 3
 Appropriateness of Education – 4
 Biotechnology Communications (all 4 categories) – 5
 Communication Technology – 6
 Communication Management – 7
 Community Development/Programming/Leadership – 8
 Critical Thinking – 9
 Curriculum and Program Development/expansion/enrichment – 10
 Distance Education – 11
 Electronic Media – 12
 Formal and Informal Teaching Approaches – 13
 Globalization and International – 17 & 14
 Graphic Design – 15
 Information Technology – 16
 Institutional Organization – 18
 Leadership Development – 19
 Leadership Education – 20
 Leadership Management – 21
 Media Relations - 22
 Needs Assessment – 23
 Organizational Leadership, culture, development, values, change – 24
 Professional Development - 25
 Program and Instructional Evaluation – 26
 Policy Issues – 27
 Publications – 28
 Research (methods, procedures, strategies, models) – 29
 Service Learning – 30
 Teacher Competence (student teachers) – 31
 Teacher Preparation – 32
 Training – 33
 Volunteer Leadership/Management/Development/education, interests, competencies, recruitment, retention – 34
 Writing – 35
 Youth Development, leadership, education, competencies – 36
 Evaluation (personnel) – 37
 Crop research, management, diversity, production – 38
 Collaborations, partnerships, coalitions – 39

Ag literacy – 40
 Skills and competency development – 41
 Learning environment(s), styles, preference – 42
 Diversity (ethnicity, gender, culture) – 43
 Knowledge development/adoption/dissemination/competencies – 44
 Extension Service – 45
 Motivation/ satisfaction – 46
 Pest management and pest science education – 47
 Health education, issues (stress management, smoking, diabetes) – 48
 Consumer/Audience response/analysis/knowledge – 49
 Food safety/security/education – 50
 Parenting education & research/ relationship education (parent-child relationships) – 51
 Sustainable farming/ environmental factors affecting farming – 52
 Diffusion of innovations – 53
 Food productions, preservation – 54
 Marketing/promotion – 55
 Finance education/management – 56
 Quality of life, life skills – 57
 Instructional & Program Delivery Approaches – 58
 Salary – 59
 Land use, preservation – 60
 Ag development, production, diversification – 61
 Water quality, issues; Riparian/watershed restoration/management – 62
 Labor issues – 63
 Nutrition/food education – 64
 Business/employee retention, management/expansion (economic development) – 65
 Funding (resource development/needs) – 66
 Farm safety/ farm risk behaviors – 67
 Forestry restoration/management/education – 68
 Soil testing – 69
 Information sources, communication, development, dissemination – 70
 Mentoring – 71
 Recycling – 72
 Biotechnology – 73
 Farming practices, technology, machinery, ethics, accountability – 74
 Wildlife issues, management, ecology – 75
 Animal health issues, production, management – 76
 Environmental/Natural resource issues, education, protection - 77
 Risk management, communications, programming - 78
 Tenure and promotion (faculty) - 79
 Tourism (rural development, heritage) – 80
 Biodiesel, alternative energy – 81
 Homeland security/biosecurity – 82
 Perceptions and attitudes assessment – 83

Land-grant institutions – 84
Relationships - 85
Self –efficacy – 86
Recruitment and Retention- 87
Career Choice – 88
Ag Communications – 89
Framing – 90
Ethics - 91

Research Method Type

Content Analysis – 0
Correlation – 1
Delphi – 2
Experimental – 3
Evaluation – 4
ExPost Facto – 5
Historical – 6
Holistic – 7
Survey – 8
Case Study -9
Survey & Case Study - 10
Interviews – 11
Interviews & Survey – 12
Survey & Open-ended Questions – 13
Focus Groups – 14
Survey & Observations – 15
Interviews & Focus Groups – 16
Survey & Focus Groups - 17
Open-ended Questions/Reflections -18
Interviews & Document Analysis – 19
Evaluation & Open-ended Questions – 20
Evaluation & Case Study – 21
Observations – 22
Survey, Focus Groups, & Interviews – 23
Interviews & Observations – 24
Observations & Document Analysis -25

APPENDIX M**Condensed Coding List**

- 1) Academic Programs - 0
- 2) Accountability -1
- 3) Agricultural Literacy - 40
- 4) Appropriateness of Education - 4
- 5) Biotechnology Communications - 5
- 6) Business/Employee Management & Expansion - 65
- 7) Career Development & Assessment - 37
- 8) Collaborations, Partnerships, & Coalitions - 39
- 9) Communication Technology - 6
- 10) Communication Management - 7
- 11) Community Development & Leadership - 8
- 12) Consumer/Audience Response & Analysis - 49
- 13) Critical Thinking – 9
- 14) Curriculum & Program Development -10
- 15) Diffusion of Innovations - 53
- 16) Distance Education - 11
- 17) Diversity (culture, ethnicity, gender) - 43
- 18) Information Sources & Technology - 70
- 19) Electronic Media - 12
- 20) Food, Agriculture, Natural Resources, Health, & Family -2
- 21) Formal & Informal Teaching Approaches - 13
- 22) Framing - 90
- 23) Funding (resource development/needs) - 66
- 24) Globalization & Internationalization - 14
- 25) Graphic Design - 15
- 26) Institutional Organization & Institutionalization- 18
- 27) Instructional & Program Delivery Approaches - 58
- 28) Knowledge Competencies & Development - 44
- 29) Leadership Development - 19
- 30) Leadership Education - 20
- 31) Leadership Management - 21
- 32) Processes, Principles, and Styles of Learning - 42
- 33) Marketing & Promotion - 55
- 34) Media Relations -22
- 35) Needs Assessment - 23
- 36) Organizational Development & Leadership - 24
- 37) Professional Development - 25
- 38) Evaluation - 26
- 39) Policy Issues - 27

- 40) Quality of Life & Life Skills - 57
- 41) Perceptions and Attitudes Assessment - 83
- 42) Research (methods and models) – 29
- 43) Risk and Crisis Communications – 78
- 44) Communications of Scholarship - 28
- 45) Service & Experiential Learning- 30
- 46) Skill Development & Competencies – 41
- 47) Teacher Preparation & Competence - 31
- 48) Volunteer Development & Leadership - 34
- 49) Writing - 35
- 50) Youth Leadership & Development - 36

APPENDIX N

National Research Agenda Comparison with Research Themes Coding List

RPA	Research Priority	Research Theme Areas
1	Enhance decision making within the agricultural sectors of society.	9, 12, 14, 17,18, 37, 78
2	Within and among societies, aid the public in effectively participating in decision making related to agriculture.	2, 4, 8, 18, 19, 33, 37, 78
3	Build competitive societal knowledge and intellectual capabilities.	7, 8, 9, 12, 17, 18, 21, 23, 26
4	Develop effective agricultural work forces for knowledge-based societies.	0, 6, 27, 34, 36, 37, 41, 44
5	Develop and disseminate effective leadership education programs.	0, 10, 13, 23, 29, 48
6	Support leadership opportunities for underrepresented populations.	10, 16, 23, 28, 48
7	Ensure leader succession in sustaining agricultural enterprises, and enhance citizen engagement in rural and urban community development.	10, 25, 28, 30, 46, 48
8	Engage citizens in community action through leadership education and development.	10, 23, 28, 29, 39, 43, 49
9	Ascertain the public's knowledge, views and openness regarding the agri-food and natural resource system.	2, 3, 14, 19, 21, 23, 25, 40
10	Identify the needs and competencies of stakeholders and professional practitioners in nonformal agricultural extension education.	6, 14, 23, 27, 34, 44
11	Identify appropriate learning systems to be used in nonformal education settings.	13, 23, 31
12	Examine appropriate nonformal educational delivery systems.	8, 15, 17, 18, 20, 23, 26, 27, 31, 37
13	Identify and use evaluation systems to access program impact.	0, 1, 3, 14, 15, 20, 23, 26, 37, 39
14	Recruit and prepare students for the future workforce in the agricultural and life sciences.	0, 6, 11, 32, 34, 37
15	Improve the success of students enrolled in agricultural and life sciences academic and technical programs.	0, 6, 16, 20, 26, 28, 31, 43, 48

16	Enhance the effectiveness of agricultural and life science faculty.	7, 13, 20, 31, 36, 37, 45
17	Assess the effectiveness of educational programs in agricultural and life sciences.	0, 6, 13, 26, 37, 44
18	Enhance program delivery models in agricultural education.	0, 3, 16, 19, 26, 31, 37
19	Provide a rigorous, relevant, standard-based curriculum in agricultural, food, and natural resources systems.	0, 6, 13, 23, 26, 37
20	Increase access to agricultural education instruction and programming.	0, 2, 15, 26, 32
21	Prepare and provide an abundance of fully qualified and highly motivated agricultural educators at all levels.	0, 13, 34, 36, 37, 45
22	Determine the effects of agricultural education instruction.	0, 6, 10, 27, 44, 48

VITA

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