

4-21-2022

A Scoping Study of United States Extension Professional Competencies

Joseph L. Donaldson

North Carolina State University, joseph_donaldson@ncsu.edu

Rose Vaughan

North Carolina State University, rmvaugha@ncsu.edu

Follow this and additional works at: <https://scholarsjunction.msstate.edu/jhse>



Part of the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Donaldson, J. L., & Vaughan, R. (2022). A Scoping Study of United States Extension Professional Competencies. *Journal of Human Sciences and Extension*, 10(1), 8.

<https://scholarsjunction.msstate.edu/jhse/vol10/iss1/8>

This Original Research is brought to you for free and open access by Scholars Junction. It has been accepted for inclusion in *Journal of Human Sciences and Extension* by an authorized editor of Scholars Junction. For more information, please contact scholcomm@msstate.libanswers.com.

A Scoping Study of United States Extension Professional Competencies

Joseph L. Donaldson

Rose Vaughan

North Carolina State University

This scoping study aimed to answer the question: What is known from existing research studies about the major competencies required of Extension professionals? Scoping studies are characterized by searching the literature to summarize major concepts on a research topic, and they are valuable as they show evidence for the major concepts. This study was limited to research studies of United States' Extension professionals. The major conclusion from the scoping study is that existing research studies have yielded a rich literature base regarding Extension professional competencies. This scoping study identified 15 Extension professional competency domains: communication, diversity and cultural competence, flexibility, interpersonal relations, knowledge of Extension, leadership, professionalism, program planning and evaluation, resource management, subject matter competence, teaching methodology and delivery, technology, thinking and problem-solving, understanding community needs, and volunteer management. It is recommended that the results inform Extension professional job descriptions and professional learning programs.

Keywords: Extension professional competencies, scoping study

Introduction

Professional competencies refer to the knowledge, attitudes, skills, and behaviors required to perform at the highest standards of the profession (Maddy et al., 2002). These competencies require base-level knowledge or awareness as well as application, synthesis, and critique (Franck et al., 2017). For Extension professionals, it is important to establish and use competencies so that the Extension workforce successfully adapts to societal changes and continues a high level of public service (Elliott-Engel et al., 2021; Lakai et al., 2012). The results of Extension professional competency studies have been instructive for aligning Extension Education college courses with real-life needs, and Scheer et al. (2006) describes a worthy example from one university. These studies have also contributed to professional learning, such as planning professional development for Extension professionals (Brodeur et al., 2011; Lakai et al., 2014) and developing learning plans for individual Extension professionals (Baker et al., 2009; Franck et al., 2017). From the standpoint of hiring and managing performance, such studies have been useful for creating meaningful Extension professional job descriptions and conducting performance appraisals of Extension professionals (Baker et al., 2009). The number of different

studies and the number of different competencies identified in such studies demand a panoramic view of this important literature. A synthesized view of Extension professional competencies, delineating the *principalis* ideas, provides a different perspective and may have even greater utility than separate, individual studies.

Purpose

This scoping study aimed to aggregate the major Extension professional competencies as documented in numerous studies. The research question was: *What is known from existing research studies about the major competencies required of Extension professionals?*

Methodology

Scoping studies seek to “map rapidly the key concepts underpinning a research area” as well as the main sources and evidence supporting the main ideas (Mays et al., 2001, p. 194). Scoping studies are important to describe major concepts, in this case, Extension professional competencies, identified through studies. Furthermore, a scoping approach is important for understanding the constructs and the research designs employed. Arksey and O’Malley (2005) suggested a five-stage framework for scoping studies: (a) identifying the research question; (b) identifying relevant studies; (c) study selection; (d) charting the data; and (e) collating, summarizing, and reporting the results. One important limitation of this scoping study, and likewise all scoping studies, is that the quality of each individual study was not a consideration. Another important limitation is related to the researchers’ experience in Extension that may have influenced how the studies were cataloged and the working definitions of the competency domains. One researcher has been an Extension Agent, Extension Specialist, and Extension Education faculty member (working primarily in 4-H, program planning and evaluation, accountability, and staff development) for more than 20 years, while another researcher was an undergraduate staff assistant who had completed a county-based Extension internship the year prior to the present study being undertaken. This scoping study was completed during the first five months of 2021. The following discussion describes the methodology employed in this study, organized by each stage of the Arksey and O’Malley (2005) framework.

Stage 1: Identifying the Research Question

In this stage, we identified our research question: *What is known from existing research studies about the major competencies required of Extension professionals?* This question was generated from our professional experiences, observations, and needs – similar to other scoping studies (Daudt et al., 2013). In addition to identifying the research question, we sought to identify our initial inclusion criteria. In this stage, we set four initial parameters for the inclusion of studies in the research described herein: (a) We defined “existing research studies” as those with a stated methodology; (b) We sought published research studies as well as theses and dissertations; (c) We sought studies of Extension professional roles, such as Extension Agent and Extension

Educator, not studies that delineated competencies among Extension paraprofessionals, administrative assistants, and/or graduate students; and (d) We did not set parameters for publication year.

Stage 2: Identifying Relevant Studies

We used the Summon database at the North Carolina State University to identify research for this study. The Summon database combines multiple databases to support efficient and effective searching. Additionally, the Summon database provides access to more than 25 million titles via the University of North Carolina System's 17 institutional libraries as well as Duke University. The keyword searched was "Extension professional competencies," and we searched the reference lists of each study identified. This work returned 97 studies.

Stage 3: Study Selection

By reading the citation abstracts of all 97 studies, we implemented our parameters and removed citations that did not state a research methodology and/or were studies of Extension paraprofessionals, administrative assistants, and/or graduate students. As a case in point, Lindner et al. (2003) studied Extension competencies by surveying agricultural and Extension education graduate students in 23 countries. Citations that did not state a methodology were typically commentaries that expounded the value of Extension professional competencies and practices using the competencies (e.g., Stone & Bieber, 1997).

It is often valuable to revisit inclusion and exclusion criteria as scoping studies develop (Arksey & O'Malley, 2003; Daudt et al., 2013). Therefore, at this stage, we also set two additional parameters post-hoc. We excluded studies of Extension professional competencies for Extension professionals outside the United States, and we excluded studies of Extension competencies taught in college Extension Education course curricula.

Stage 4: Charting the Data

The next stage was charting the data found in the 37 primary studies. At this stage, we reviewed both the study methodology and the findings of each of the primary studies. The information from the primary studies that we charted was the full citation of the study, methodology or methodologies (procedure and participants), and competencies listed as research results/findings.

Stage 5: Collating, Summarizing, and Reporting the Results

The final stage was collating, summarizing, and reporting our scoping literature review results. Our initial efforts at collating and summarizing competency domains identified 13 Extension professional competency domains: communication, interpersonal relations, knowledge of Extension, leadership, professionalism, program planning and evaluation, resource management, subject matter competence, teaching methodology and delivery, technology, thinking and

problem-solving, understanding community needs, and volunteer management. However, we noted that multiple studies we initially cataloged under the interpersonal domain named “flexibility” as well as “diversity and cultural competence” as professional competency domains. Therefore, we set another post-hoc parameter: the requirement that each competency is supported by a minimum of five studies. Conversely, we included eight studies that identified “human relations” as a competency in the interpersonal relations competency domain as we determined that these terms were used interchangeably in the literature. Other specific actions we took toward collating, summarizing, and reporting were:

- We included two studies that identified “customer service” as a competency (Cochran, 2009; Scheer et al., 2011) in the professionalism competency domain.
- We included two studies that identified “self-direction” as a competency (Cochran, 2009; Scheer et al., 2011) and one study that identified “self-management” as a competency (Harder et al., 2010) as part of the professionalism competency domain.
- We identified 16 studies that named teaching methodology and delivery as a competency domain. Notably, the phrase educational programming was used in some studies, while other studies described this competency domain as “teaching,” “educational excellence,” “educational programming,” and “theories of learning.”

This resulted in 15 Extension professional competency domains. As final steps for stage 5, we wrote a working definition of each competency based on our review of the primary studies for each domain and prepared a compendium of the results organized by the Extension professional competency domain. As previously stated, scoping studies are different from other methodologies as the inclusion and exclusion criteria may be amended as the research is reviewed (Arksey & O’Malley, 2003; Daudt et al., 2013). The final set of initial and post-hoc parameters was

1. We defined “existing research studies” as those with a stated methodology (initial).
2. We sought published research studies as well as theses and dissertations (initial).
3. We sought studies of Extension professional roles, such as Extension Agent and Extension Educator, not studies that delineated competencies among Extension paraprofessionals, administrative assistants, and/or graduate students (initial).
4. We did not set parameters for publication year (initial).
5. We excluded studies of Extension professional competencies for Extension professionals outside the United States (post-hoc).
6. We excluded studies of Extension competencies taught in college Extension Education course curricula (post-hoc).
7. We organized professional competency domains for competencies named in a minimum of five studies (post-hoc).

Findings

The findings are presented in Table 1; specifically, the compendium showing the 15 competency domains and definitions, study citations, and methodologies employed (procedures and participants). Regarding methodologies, we found the following research methods employed: 19 used surveys, seven studies used the Delphi or a modified Delphi technique, seven used a mixed-methods approach, three used interviews, and one used the Borich methodology. Among the 19 surveys, 17 used quantitative approaches, and two used qualitative approaches.

Table 1. Results of Scoping Review of Extension Professional Competencies

Competencies and Definitions	Citations	Study Procedures	Study Participants
<i>Communication – communicating openly in both verbal (written and oral) and non-verbal ways with Extension personnel, volunteers, clients, and the community in a variety of situations</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Boyd (2003)	Delphi Study	Extension Professionals ^a
	Burke (2003)	Survey, Quantitative	Extension 4-H Agents
	Cochran (2009)	Mixed Methods	Extension Professionals
	Conner et al. (2013)	Modified Delphi Study	Extension Agricultural Professionals ^b
	DeBord et al. (2003)	Mixed Methods	Extension Professionals
	Diaz et al. (2020)	Modified Delphi Study	Extension Evaluation Specialists
	Fox & LaChenaye (2015)	Survey, Quantitative	Youth Development Professionals
	Gibson (2003)	Mixed Methods	Extension Professionals
	Gibson & Hillison (1994)	Survey, Quantitative	Extension Professionals
	Gonzalez (1982)	Survey, Quantitative	Extension Professionals
	Harder & Dooley (2007)	Individual Interviews	Extension 4-H Agents
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Harder & Narine (2019)	Borich Method	Extension Professionals
	Haynes (1996)	Mixed Methods	Extension Professionals
	Hudson (1978)	Mixed Methods	Extension Agents
	Itulya (1973)	Survey, Quantitative	Extension Agents
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Liles & Mustian (2004)	Mixed Methods	Extension Professionals ^c
	Moore & Rudd (2003)	Mixed Methods	Association of Leadership Educators ^d
	Moore & Rudd (2004)	Individual Interviews	Administrative Heads of Agriculture
	Moore & Rudd (2005)	Survey, Qualitative	Extension Administrators
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Reynolds (1993)	Survey, Quantitative	Extension Agents
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Stitt et al. (1983)	Survey, Quantitative	Extension Internship Advisors	
Stoller (1971)	Survey, Quantitative	Extension Professionals	
Warner et al. (2016)	Delphi Study	Extension Professionals & Researchers	

Competencies and Definitions	Citations	Study Procedures	Study Participants
Diversity and cultural competence – <i>creating appropriate materials and participating in appropriate practices to promote and show respect to diverse audiences and cultures</i>	Cochran (2009)	Mixed Methods	Extension Professionals
	Fox & LaChenaye (2015)	Survey, Quantitative	Youth Development Professionals
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Moore & Rudd (2004)	Individual Interviews	Administrative Heads of Agriculture
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Flexibility – <i>demonstrating adaptability in behavior and methods to accommodate various circumstances</i>	Cochran (2009)	Mixed Methods	Extension Professionals
	Conner et al. (2013)	Modified Delphi Study	Extension Agricultural Professionals
	Haynes (1996)	Mixed Methods	Extension Professionals
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Interpersonal Relations – <i>working effectively with others and demonstrating positive human relations, open exchange of ideas, self-awareness, and emotional intelligence</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Brodeur et al. (2011)	Delphi Study	Extension Agents & Directors
	Burke (2003)	Survey, Quantitative	Extension 4-H Agents
	Cochran (2009)	Mixed Methods	Extension Professionals
	Cooper & Graham (2001)	Survey	Extension Agents
	DeBord et al. (2003)	Mixed Methods	Extension Professionals
	Harder & Narine (2019)	Borich Method	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Hudson (1978)	Mixed Methods	Extension Agents
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Liles & Mustian (2004)	Mixed Methods	Extension Professionals
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Knowledge of Extension – <i>understanding the organizational system, mission, values, policies, procedures, and</i>	Brodeur et al. (2011)	Delphi Study	Extension Agents & Directors
	Cochran (2009)	Mixed Methods	Extension Professionals
	Gibson & Hillison (1994)	Survey, Quantitative	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals

Competencies and Definitions	Citations	Study Procedures	Study Participants
<i>partners of the Cooperative Extension system</i>	Itulya (1973)	Survey, Quantitative	Extension Agents
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Liles & Mustian (2004)	Mixed Methods	Extension Professionals
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
<i>Leadership – facilitating organizational and personal development using leadership principles and skills</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Cochran (2009)	Mixed Methods	Extension Professionals
	Cooper & Graham (2001)	Survey	Extension Agents
	Hall & Broyles (2016)	Survey, Quantitative	Extension Agents
	Harder & Narine (2019)	Borich Method	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Haynes (1996)	Mixed Methods	Extension Professionals
	Hudson (1978)	Mixed Methods	Extension Agents
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Liles & Mustian (2004)	Mixed Methods	Extension Professionals
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
	Stitt et al. (1983)	Survey, Quantitative	Extension Internship Advisors
	Warner et al. (2016)	Delphi Study	Extension Professionals & Researchers
<i>Professionalism – operating in a timely and ethical manner through self-directed efforts; delivering effectual customer service</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Burke (2003)	Survey, Quantitative	Extension 4-H Agents
	Cochran (2009)	Mixed Methods	Extension Professionals
	Gonzalez (1982)	Survey, Quantitative	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Liles & Mustian (2004)	Mixed Methods	Extension Professionals
	Reynolds (1993)	Survey, Quantitative	Extension Agents

Competencies and Definitions	Citations	Study Procedures	Study Participants
<i>Program Planning and Evaluation – preparing and organizing the design, methods, goals, and evaluation of programs based on the needs of the clientele</i>	Scheer et al. (2011)	Mixed Methods	Extension Professionals
	Warner et al. (2016)	Delphi Study	Extension Professionals & Researchers
	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Brodeur et al. (2011)	Delphi Study	Extension Agents & Directors
	Conner et al. (2013)	Modified Delphi Study	Extension Agricultural Professionals
	Cooper & Graham (2001)	Survey	Extension Agents
	Diaz et al. (2020)	Modified Delphi Study	Extension Evaluation Specialists
	Gibson & Hillison (1994)	Survey, Quantitative	Extension Professionals
	Gonzalez (1982)	Survey, Quantitative	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Itulya (1973)	Survey, Quantitative	Extension Agents
	McClure et al. (2012)	Mixed Methods	Extension Professionals
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Radhakrishna & Martin (1999)	Survey, Quantitative	Extension Agents
	Reynolds (1993)	Survey, Quantitative	Extension Agents
	<i>Resource Management – acquiring and allocating resources for all job duties</i>	Scheer et al. (2011)	Mixed Methods
Schmiesing & Safrit (2007)		Survey	Extension 4-H Agents
Stitt et al. (1983)		Survey, Quantitative	Extension Internship Advisors
Warner et al. (2016)		Delphi Study	Extension Professionals & Researchers
Benge et al. (2011)		Survey, Quantitative	Extension Agents
Brodeur et al. (2011)		Delphi Study	Extension Agents & Directors
Cochran (2009)		Mixed Methods	Extension Professionals
Hudson (1978)		Mixed Methods	Extension Agents
<i>Subject Matter Competence – having and using knowledge of a particular subject matter to apply</i>	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lindner (2001)	Survey, Quantitative	Extension County Chairs
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
	Benge et al. (2011)	Survey, Quantitative	Extension Agents
Brodeur et al. (2011)	Delphi Study	Extension Agents & Directors	
Burke (2003)	Survey, Quantitative	Extension 4-H Agents	

Competencies and Definitions	Citations	Study Procedures	Study Participants
<i>to real-life situations and in conducting programs</i>	DeBord et al. (2003)	Mixed Methods	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Teaching Methodology and Delivery – <i>using the appropriate styles and resources in educational programming to instruct a variety of ages appropriately</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Culp & Kohlhagen (2004)	Survey, Quantitative	Extension 4-H Agents
	DeBord et al. (2003)	Mixed Methods	Extension Professionals
	Gonzalez (1982)	Survey, Quantitative	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Hudson (1978)	Mixed Methods	Extension Agents
	Itulya (1973)	Survey, Quantitative	Extension Agents
	Lakai et al. (2014)	Survey, Quantitative	Extension Agents
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Moore & Rudd (2004)	Individual Interviews	Administrative Heads of Agriculture
	Radhakrishna & Martin (1999)	Survey, Quantitative	Extension Agents
	Reynolds (1993)	Survey, Quantitative	Extension Agents
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
	Stitt et al. (1983)	Survey, Quantitative	Extension Internship Advisors
Stoller (1971)	Survey, Quantitative	Extension Professionals	
Technology – <i>continuing to incorporate technology into programs appropriately and effectively</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Cochran (2009)	Mixed Methods	Extension Professionals
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Lakai (2010)	Survey, Quantitative	Extension Agents
	Moore & Rudd (2004)	Individual Interviews	Administrative Heads of Agriculture
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Thinking and Problem Solving – <i>applying critical and creative techniques to thinking in order to understand and solve problems</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Cochran (2009)	Mixed Methods	Extension Professionals
	Gibson & Hillison (1994)	Survey, Quantitative	Extension Professionals
	Hall & Broyles (2016)	Survey, Quantitative	Extension Agents

Competencies and Definitions	Citations	Study Procedures	Study Participants
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Moore & Rudd (2003)	Mixed Methods	Association of Leadership Educators
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Understanding Community Needs – <i>evaluating the behavior and changes of society which will influence program development and needs</i>	Cochran (2009)	Mixed Methods	Extension Professionals
	Diaz et al. (2020)	Modified Delphi Study	Extension Evaluation Specialists
	Hall & Broyles (2016)	Survey, Quantitative	Extension Agents
	Hudson (1978)	Mixed Methods	Extension Agents
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Scheer et al. (2011)	Mixed Methods	Extension Professionals
Volunteer Management – <i>Selection, recruitment, development, management, engagement, and recognition of volunteers</i>	Benge et al. (2011)	Survey, Quantitative	Extension Agents
	Boyd (2003)	Delphi Study	Extension Professionals
	Collins (2001)	Survey, Quantitative	Extension 4-H Agents
	Culp & Kohlhagen (2004)	Survey, Quantitative	Extension 4-H Agents
	Harder et al. (2010)	Delphi Study	Extension Professionals
	Owen (2004)	Survey, Qualitative	County Extension Directors
	Schmiesing & Safrit (2007)	Survey, Quantitative	Extension 4-H Agents

^a Boyd (2003) involved 20 experts, including state Extension volunteerism specialists.

^b Conner et al. (2013) involved agricultural teachers and Extension agricultural agents.

^c Liles & Mustian (2004) involved members of the State Extension Advisory Council and Extension professionals.

^d Moore & Rudd (2003) involved the Association of Leadership Educators in roundtable discussions, many of whom were directly involved with Extension.

Discussion, Conclusions, and Recommendations

The major conclusion is that existing research studies have yielded a rich literature base regarding Extension professional competencies. This scoping study identified 15 Extension professional competency domains: communication, diversity and cultural competence, flexibility, interpersonal relations, knowledge of Extension, leadership, professionalism, program planning and evaluation, resource management, subject matter competence, teaching methodology and delivery, technology, thinking and problem-solving, understanding community needs, and volunteer management. It appears that many professional competency domains have remained stable while technology, diversity and cultural competence, and volunteer management have emerged over the past 20 years.

It was important to document research methodologies, and we noted that the studies were primarily quantitative surveys. We recommend additional research using qualitative approaches to understand the competency domains and develop depth of knowledge thoroughly. As these studies were primarily of Extension Agents, we recommend research that specifically examines professional competencies for Extension Specialists. This is important because an important function of the Extension Specialists is to provide both technical subject matter and instruction to Extension Agents (Radhakrishna, 2001; Shaklee et al., 2014). It is worth noting that some of these studies defined Extension professional competencies while others expounded on previous research of competency domains. We did not make an effort to distinguish between these two approaches. We recommend additional research on defining the skills for each Extension professional competency domain. Some research exists in this vein; for example, Hall and Broyles (2016) studied Extension agents' perceptions of leadership skills, namely the importance, knowledge, and professional development needs for each skill. We recommend that such research continue within the professional competency domains and within different Extension professional roles (4-H youth development, agriculture, community development, family and consumer sciences, natural resources, and others).

This sweeping view of all published studies on the topic of Extension professional competencies is an important vantage point that may inform the work of current Extension professionals in terms of vigorous and intentional job descriptions and performance appraisal, professional development, and performance management and coaching. We recommend that the findings inform college curriculum decisions, such as deciding what specific competencies college students should develop as part of Extension practicum and internship experiences. This scoping study summarizes research to date in Extension professional competency domains – an important tool to propel the work of researchers and scholars in Extension education.

References

References marked with an asterisk indicate studies included in the scoping study.

- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32.
<https://doi.org/10.1080/1364557032000119616>
- Baker, S. S., Pearson, M., & Chipman, H. (2009). Development of core competencies for paraprofessional nutrition educators who deliver food stamp nutrition education. *Journal of Nutrition Education and Behavior* 41(2), 137–143.
<https://doi.org/10.1016/j.jneb.2008.05.004>
- *Benge, M., Harder, A., & Carter, H. (2011). Necessary pre-entry competencies as perceived by Florida Extension agents. *Journal of Extension*, 49(5), Article 3.
<https://tigerprints.clemson.edu/joe/vol49/iss5/3/>
- *Boyd, B. L. (2003). Identifying competencies for volunteer administrators for the coming decade: A national Delphi study. *Journal of Agricultural Education*, 44(4), 47–56.
<https://www.jae-online.org/attachments/article/325/44-04-47.pdf>
- *Brodeur, C. W., Higgins, C., Galindo-Gonzalez, S., Craig, D. D., & Haile, T. (2011). Designing a competency-based new county Extension personnel training program: A novel approach. *Journal of Extension*, 49(3), Article 2.
<https://tigerprints.clemson.edu/joe/vol49/iss3/2/>
- *Burke, T. B. (2003). *Defining competency and reviewing factors that may impact the perceived importance, knowledge and use of competencies in the 4-H professional's job*. [Doctoral dissertation, North Carolina State University]. North Carolina State University Digital Archive.
<https://repository.lib.ncsu.edu/bitstream/handle/1840.16/3630/etd.pdf?sequence=1&isAllowed=y>
- *Cochran, G. R. (2009). *Ohio State University Extension competency study: Developing a competency model for a 21st century Extension organization*. [Doctoral dissertation, The Ohio State University]. The Ohio State University Digital Archive.
<https://www.proquest.com/docview/304971727>
- *Collins, M. (2001). *Michigan 4-H youth development agents perceptions of the importance of and their competence with selected volunteer management functions* [Unpublished master's thesis]. The Ohio State University.
- *Conner, N. W., Roberts, T. G., & Harder, A. (2013). Competencies and experiences needed by entry level international agricultural development practitioners. *Journal of International Agricultural and Extension Education*, 20(1), 19–32.
https://www.aiaee.org/attachments/article/1503/Conner_Roberts_20102.pdf
- *Cooper, A., & Graham, D. (2001). Competencies needed to be successful county agents and county supervisors. *Journal of Extension*, 39(1).
<https://archives.joe.org/joe/2001february/rb3.php>

- *Culp, K., & Kohlhagen, B. S. (2004). Kentucky 4-H agents' perceptions of their levels of competency and frequency of use of volunteer administration function. *Journal of Agricultural Education*, 45(2), 1–13. <https://doi.org/10.5032/jae.2004.02001>
- Daudt, H. M. L., van Mossel, C., & Scott, S. J. (2013). Enhancing the scoping study methodology: A large, inter-professional team's experience with Arksey and O'Malley's framework. *BMC Medical Research Methodology*, 13, 48. <https://doi.org/10.1186/1471-2288-13-48>
- *DeBord, K., Dunn, C., Zaslow, S. A., & Smith, P. P. (2003). Identifying competencies needed in FCS Extension staff. *Journal of Family and Consumer Sciences*, 95(4), 99–104.
- *Diaz, J., Chaudhary, A. K., Jayaratne, K. S. U., & Assan, E. (2020). Expanding evaluator competency research: Exploring competencies for program evaluation using the context of non-formal education. *Evaluation and Program Planning*, 79, 101790. <https://doi.org/10.1016/j.evalprogplan.2020.101790>
- Elliott-Engel, J., Westfall-Rudd, D., Seibel, M., Kaufman, E., & Radhakrishna, R. (2021). Extension administrators' perspectives on employee competencies and characteristics. *Journal of Extension*, 59(3), Article 3. <https://doi.org/10.34068/joe.59.03.03>
- *Fox, J. E., & LaChenaye, J. M. (2015). Cultural core competencies: Perceptions of 4-H youth development professionals. *Journal of Human Sciences and Extension*, 3(3), 65–78. <https://www.jhseonline.com/article/view/745/646>
- Franck, K., Wise, D., Penn, A., & Berry, A. A. (2017). Preparing future professionals for holistic family and consumer sciences programming. *Journal of Extension*, 55(6), Article 51. <https://tigerprints.clemson.edu/joe/vol55/iss6/51/>
- *Gibson, J. D. (2003). Use of managerial proficiencies in agricultural and Extension education: An assessment of Virginia Cooperative Extension. *Journal of International Agricultural and Extension Education*, 10(3), 19–24. <https://www.aiaee.org/attachments/article/240/Gibson%2010.3-3.pdf>
- *Gibson, J. D., & Hillison, J. (1994). Training needs of area specialized agents. *Journal of Extension*, 32(3). <https://archives.joe.org/joe/1994october/a3.php>
- *Gonzalez, I. M. (1982). *The professional competencies needed by Extension agents in the Pennsylvania Cooperative Extension Service* (Publication No. 8228891) [Doctoral dissertation, The Pennsylvania State University]. ProQuest Dissertations and Theses Global.
- *Hall, J. L., & Broyles, T. W. (2016). Leadership competencies of Tennessee Extension agents: Implications for professional development. *Journal of Leadership Education*, 15(3), 187–200. https://journalofleadershiped.org/wp-content/uploads/2019/02/15_3_hall.pdf
- *Harder, A., & Dooley, K. (2007). Perceptions of important competencies for early-career and established 4-H agents. *Journal of Southern Agricultural Education Research*, 57(1), 43–52. <http://jsaer.org/wp-content/uploads/2020/06/Volume-57-Full-Issue.pdf>

- *Harder, A., & Narine, L. K. (2019). Interpersonal leadership competencies of Extension agents in Florida. *Journal of Agricultural Education*, 60(1), 224–233. <https://doi.org/10.5032/jae.2019.01224>
- *Harder, A., Place, N., & Scheer, S. D. (2010). Towards a competency-based Extension education curriculum: A Delphi study. *Journal of Agricultural Education*, 51(3), 44–52. <http://doi.org/10.5032/jae.2010.03044>
- *Haynes, B. R. (1996). *Factors affecting supervisory and management competencies of participants in Extension assessment centers*. [Doctoral dissertation, The Ohio State University]. The Ohio State University Digital Archive. https://etd.ohiolink.edu/apexprod/rws_etd/send_file/send?accession=osu1487943341526704&disposition=inline
- *Hudson, H. E. (1978). *Competencies identified with the county Extension agent's community resource development role* [Unpublished doctoral dissertation]. North Carolina State University.
- *Itulya, F. M. (1973). *Professional competencies essential for beginning Extension agents in Arizona* [Master's thesis, University of Arizona]. University of Arizona Digital Archive. https://repository.arizona.edu/bitstream/handle/10150/566485/AZU_TD_BOX282_E9791_1973_143.pdf?sequence=1&isAllowed=y
- *Lakai, D. (2010). *Identification of competencies needed by the Extension agents in North Carolina Cooperative Extension* [Master's thesis, North Carolina State University]. North Carolina State University Digital Archive. <https://repository.lib.ncsu.edu/bitstream/handle/1840.16/6495/etd.pdf?sequence=1>
- Lakai, D., Jayarante, K. S. U., Moore, G. E., & Kistler, M. J. (2012). Barriers and effective educational strategies to develop Extension agents' professional competencies. *Journal of Extension*, 50(4). <http://archives.joe.org/joe/2012august/rb1.php>
- *Lakai, D., Jayarante, K. S. U., Moore, G. E., & Kistler, M. J. (2014). Identification of current proficiency level of Extension competencies and the competencies needed for Extension agents to be successful in the 21st century. *Journal of Extension and Human Sciences*, 2(1). <https://www.jhseonline.com/article/view/584/513>
- *Liles, R. T., & Mustian, R. D. (2004). Core competencies: A systems approach for training and organizational development in Extension. *The Journal of Agricultural Education and Extension*, 10(2), 77–82. <https://doi.org/10.1080/13892240485300121>
- *Lindner, J. R. (2001). Competency assessment and human resource management performance of county Extension chairs in Ohio. *Journal of Agricultural Education*, 42(4), 21–31. <https://doi.org/10.5032/jae.2001.04021>
- Lindner, J. R., Dooley, K. E., & Wingenbach, G. J. (2003). A cross-national study of agricultural and Extension education competencies. *Journal of International Agricultural and Extension Education*, 10(1), 51–60. <https://doi.org/10.5191/jiaee.2003.10107>

- Maddy, D., Niemann K., Lindquist, J., & Bateman, K. (2002). *Core competencies for the Cooperative Extension System*. Personnel and Organizational Development Committee of the Extension Committee on Organization and Policy.
https://apps.msueextension.org/careers/forms/Core_Competencies.pdf
- Mays, N., Roberts, E., & Popay, J. (2001). Synthesizing research evidence. In N. Fulop, P. Allen, A. Clarke, & N. Black (Eds.), *Studying the organization and delivery of health services: Research methods* (pp. 188–220). Routledge.
- *McClure, M. M., Fuhrman, N. E., & Morgan, A. C. (2012). Program evaluation competencies of Extension professionals: Implications for continuing professional development. *Journal of Agricultural Education*, 53(4), 85–97. <https://doi.org/10.5032/jae.2012.04085>
- *Moore, L. L., & Rudd, R. D. (2003, July 16-19). *Exploring leadership competencies in Extension* [Paper]. Association of Leadership Educators Annual Conference, Anchorage, AK, United States. <http://www.leadershipeducators.org/Archives/2003/moore.pdf>
- *Moore, L. L., & Rudd, R. D. (2004). Leadership skills and competencies for Extension state directors and administrators. *Journal of Agricultural Education*, 45(3), 22–33.
<https://doi.org/10.5032/jae.2004.03022>
- *Moore, L. L., & Rudd, R. D. (2005). Extension leaders' self-evaluation of leadership skills areas. *Journal of Agricultural Education*, 46(1), 68–78.
<https://doi.org/10.5032/jae.2005.01068>
- *Owen, M. B. (2004). Defining key sub-competencies for administrative county leaders. *Journal of Extension*, 42(2). <https://archives.joe.org/joe/2004april/rb3.php>
- Radhakrishna, R. B. (2001). Professional development needs of state Extension specialists. *Journal of Extension*, 39(5). <https://archives.joe.org/joe/2001october/rb4.php>
- *Radhakrishna, R., & Martin, M. (1999). Program evaluation and accountability training needs of Extension agents. *Journal of Extension*, 37(3).
<https://archives.joe.org/joe/1999june/rb1.php>
- *Reynolds, W. B. (1993). *Professional competencies needed by Extension agents in the Louisiana Cooperative Extension Service* [Doctoral dissertation, Louisiana State University and Agricultural & Mechanical College]. Louisiana State University and Agricultural & Mechanical College Digital Archive.
<https://core.ac.uk/download/pdf/217405708.pdf>
- Scheer, S. D., Ferrari, T. M., Earnest, G. W., & Conners, J. J. (2006). Preparing Extension professionals: The Ohio State University's model of Extension education. *Journal of Extension*, 44(4). <https://archives.joe.org/joe/2006august/a1.php>
- *Scheer, S. D., Harder, A., & Place, N. T. (2011). Competency modeling in Extension education: Integrating an academic Extension education model with an Extension human resource management model. *Journal of Agricultural Education*, 52(3), 64–74.
<http://doi.org/10.5032/jae.2011.03064>

- *Schmiesing, R. J., & Safrit, R. D. (2007). 4-H youth development professionals' perceptions of the importance of and their current level of competence with selected volunteer management competencies. *Journal of Extension*, 45(3).
<https://archives.joe.org/joe/2007june/rb1.php>
- Shaklee, H., Raidl, M., McCurdy, S., & Meyer, S. (2014). The Communicator: Electronic newsletter provides expert support to FCS county educators. *Journal of Extension*, 52(1), Article 17. <https://tigerprints.clemson.edu/joe/vol52/iss1/17>
- *Stitt, T. R., Pohl, S. J., & Chavez, A. J. (1983). Identification of competencies and instructional methods for quality pre-service agricultural Extension advisor internships. *North American Colleges and Teachers of Agriculture Journal*, 27(2), 25–26.
https://www.nactateachers.org/attachments/article/1337/Stitt_NACTA_Journal_June_1983.pdf
- *Stoller, R. E. (1971). *The identification and differentiation of selected professional competencies for agricultural educators* (Publication No. 7216018) [Doctoral dissertation, University of Nebraska]. Proquest Dissertations and Theses Global.
- Stone, B. B., & Bieber, S. (1997). Competencies: A new language for our work. *Journal of Extension*, 35(1). <https://archives.joe.org/joe/1997february/comm1.php>
- *Warner, L. A., Stubbs, E., Murphrey, T. P., & Huynh, P. (2016). Identification of competencies needed to apply social marketing to Extension programming: Results of a Delphi study. *Journal of Agricultural Education*, 57(2), 14–32. <https://doi.org/10.5032/jae.2016.02014>

Joseph L. Donaldson is an Associate Professor and Extension Specialist in the Department of Agricultural and Human Sciences at North Carolina State University. He pursues scholarship in all aspects of Extension education, community engagement, and career pathways in food, agricultural, natural resources, and human sciences. Direct correspondence to Joseph L. Donaldson at joseph_donaldson@ncsu.edu

Rose Vaughan is a Student Staff Assistant in the Department of Agricultural and Human Sciences and graduate student in Animal Science at North Carolina State University. She holds a B.S. in Animal Science with a minor in Extension Education.