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Entering the Agricultural Education Professorate: Hiring Authorities' Perceptions of Tenure-Track Faculty Needs

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Abstract

The purpose of this Delphi study was to identify the competencies needed by first-year, tenure-track faculty in the profession of agricultural education and its related specializations (i.e., teacher education, Extension education, leadership development, and agricultural communication) as perceived by hiring authorities. The expert panel was composed of 31 individuals across 25 states who were hiring authorities of agricultural education faculty. At the completion of the third round, there were a total of 52 competencies that reached consensus with the panel. The competencies were situated into three thematic categories: (a) professional skills, (b) technical skills, and (c) personal attributes. A visual framework, including the competencies, categories, and subcategories is presented. We recommend that this framework be used by graduate programs of agricultural education and related specializations as a potential framework for evaluating their programming. The time is ripe for a profession-wide conversation around the development and preparation of future faculty, and how to establish a community of scholars. Future research should be conducted to examine the best practices, such as mentorship and collaboration, to sustain and support faculty over their career and how such practices may be effectively implemented across the agricultural education professorate.

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Introduction and Problem Statement

Early-career, tenure-track faculty are often met with several challenges associated with their multidimensional roles, including an abundance of responsibility, vague performance expectations from university administration, and insufficient support systems (Greene et al., 2008; Love et al., 2023; Nir & Zilberstein-Levy, 2006). These challenges are often heightened during the transition period from graduate school into a tenure-track faculty role (Gosling et al., 2020; Larson et al., 2019). Larson et al. (2019) suggested several strategies for early career faculty to be successful in the professoriate. Some strategies included knowing the expectations for tenure and promotion and being proactive in areas of scholarship, especially research. However, expectations may vary by academic discipline, and clarifying expectations for those entering the professoriate could guide how we prepare those entering tenure-track lines.

Career advancement and educational development are often the primary purposes of obtaining a graduate degree in agricultural education settings (Bowen & Miller, 2010). It is the philosophy of many graduate programs that their overarching purpose is to produce scholars, and at the doctoral level, future faculty (Shinn & Baker, 2010). While the purpose of graduate education may remain consistent across programs, approaches may vary across contexts (Gardner, 2008). With a potential looming faculty shortage in agricultural settings (National Academies of Sciences, Engineering, and Medicine [NASEM], 2021), it is imperative that programs of agricultural education and related specializations (i.e., teacher education, agricultural communication, Extension education, and agricultural leadership) produce graduates who meet the needs of the tenure-track faculty role. These four specializations make up one cohesive academic discipline (i.e., the agricultural education professorate), with the exception that agricultural communication differs most in its theories and philosophical paradigms (Harder et al., 2021). Therefore, a national study to determine the needs of those entering the agricultural education professorate, especially from the perspective of the profession's hiring authorities, is warranted.

Theoretical and Conceptual Framework

This study was framed with the theory of human capital (Becker, 1964; Schultz, 1971) and Tyler's (1949) four fundamental questions. Human capital theory (HCT) is the process of developing personal characteristics, such as specific knowledge, skills, and competencies. This process leads to individuals' (often employees) increased motivation and productivity. Investing in human capital through preparation programs (i.e., graduate education) or on-the-job training can lead to increased returns for employers and the larger social, economic, and environmental systems (Schultz, 1971).

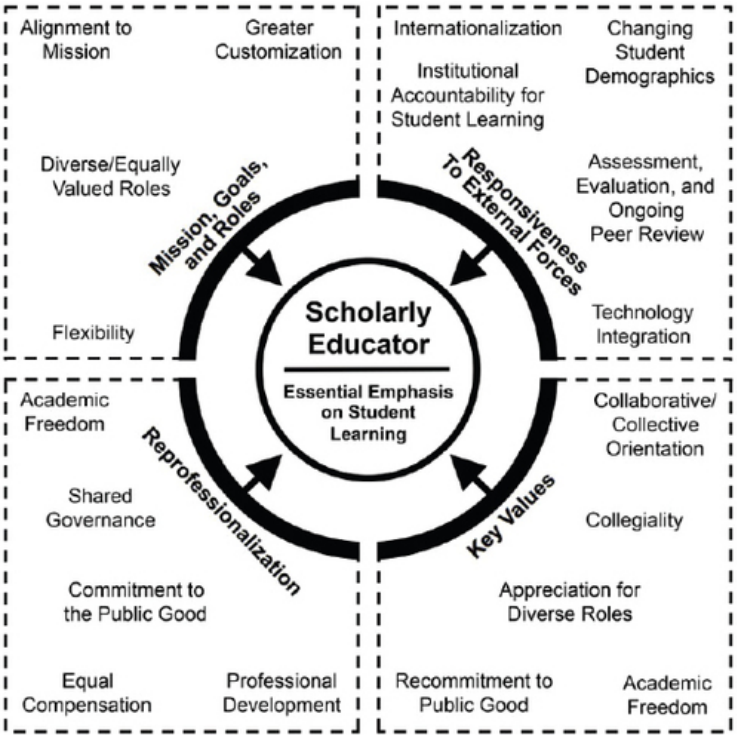
Tyler (1949) purported that when developing educational and training programming, it is important to consider four questions: (a) What is the overarching purpose of the program? (b) What experiences are necessary to achieve said purpose? (c) How should those experiences be organized or scaffolded? (d) How might we assess if we have achieved our purpose? These four questions can be used to guide programming across a spectrum of educational experiences,

which may range in time from an individual learning activity to an entire training or educational system (Coleman et al., 2024). In this study, we were interested in identifying the human capital needs of tenure-track faculty across the system of the agricultural education and related specializations professorate. Identifying such needs is well aligned with the first of Tyler's (1949) questions: What competencies and skills are needed when developing future tenure-track faculty for the agricultural education professorate? We have intentionally included both terms, *skills* and *competencies*; because, while these terms are used interchangeably in the literature, some scholars have offered distinguishing definitions (Boyatzis, 1982; Claxton et al., 2016; Marin-Zapata et al., 2022; Spencer & Spencer, 1993). In this study, we adopted the definitions of the terms synthesized by Marin-Zapata et al. (2022, p. 974): "Competence is the generic capability of a professional…[and] competency is one of the components of the individual's competence." Whereas a skill can be defined as "the ability to perform a certain physical or mental task that is functionally related to attaining a performance goal" (Marin-Zapata et al. 2022, p. 974). Competence is inclusive of one's skills, traits, and knowledge.

Kezar (2018) developed a framework which outlined four themes of a scholarly educator: (a) Mission, goals, and roles; (b) Responsiveness to external forces; (c) Reprofessionalization; and (d) Key values (see Figure 1).

Figure 1

Kezar's (2018) Model of a Scholarly Educator



Kezar's (2018) framework was developed primarily as a call to action for academia, writ large, to expand our views of the roles and responsibilities of faculty – tenure-track and non-tenure-

track. This framework is intentionally aligned with Boyer's (1990) definition of scholarship, which included (a) research, (b) synthesis of knowledge, (c) theory-informed practice, and (d) teaching and learning.

While Kezar's (2018) framework, along with Boyer's (1990) definition, provides direction for developing scholars broadly, it does not address specific competencies needed by faculty, nor is it contextualized for the agricultural education professorate. Research that has previously been conducted to address the needs of those entering the agricultural education professorate has been limited because (a) it focuses on a single university or regional context; (b) it is a decade or more old; (c) it is not exclusively focused on first-year, tenure-track faculty; and/or (d) it does not examine needs as perceived by hiring authorities (Bowen & Miller, 2010; Goecker, 1992; Rocca, 2010; Shinn & Baker, 2010; Welton et al., 1981; Williams, 1997). Therefore, this research aims to address such gaps.

Purpose

The purpose of this Delphi study was to identify the competencies needed by first-year, tenure-track faculty of agricultural education and its related specializations (i.e., teacher education, Extension education, leadership development, and agricultural communication) as perceived by hiring authorities. The objectives were:

1. Describe the comprehensive list of non-duplicated competency statements identified by the panel of hiring authorities.
2. Describe the competencies that were endorsed by the panel of hiring experts.

Methods

The Delphi technique can be used to facilitate a group of individuals in prioritizing their values and goals (Linstone & Turoff, 1975; Skulmoski et al., 2007). Witkin and Altschuld (1995) suggested three steps for conducting a Delphi: (a) planning and panel formation, (b) carrying out the questionnaire rounds, and (c) summarization and dissemination. The expert panel was composed of individuals who were hiring authorities of tenure-track faculty of agricultural education and its related specializations. This included department chairs, heads, directors, program leaders, and deans of colleges. To obtain a comprehensive list of post-secondary institutions at which agricultural education faculty are employed, we used the electronic list of agricultural education institutions offered by the American Association for Agricultural Education (AAAE). This resulted in a total of 103 possible institutions with departments that included faculty of agricultural education. After reviewing the websites for each institution, it was determined that 90 of the 103 institutions had active departments or faculty of agricultural education. An initial email invitation was sent to the listed hiring authority (e.g., head, chair, etc.) at each of the 90 institutions or to a representative who connected us with the appropriate individual. In total, hiring authorities from 31 institutions across 25 states agreed to participate.

The first questionnaire round included open-ended questions (Witkin & Altschuld, 1995) regarding the competencies that were needed and lacking by first-year, tenure-track faculty members in their department at their point of entry to the profession (see Instrument). In total, 490 competency statements were provided by the panel (*N* = 31). Open, inductive coding via the constant comparative method (Corbin & Strauss, 2015; Creswell, 2013) was used to analyze the statements by one researcher. A list of 90 condensed statements were presented to the research team, and a round of open code negotiation occurred, where the statements were compared again to the raw data. The team agreed to condense the data further to 67, non-duplicated, representative competency statements. These statements were situated into three overarching themes: (a) professional skills, (b) technical skills, and (c) personal attributes. The 67 statements were used to develop the round two questionnaire, and panelists were asked to indicate their level of agreement using a six-point scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree). Eighty-one percent (*n* = 25) of the panel participated in round two. The consensus level was established *a priori* at 75% of participants who indicated either agree or strongly agree. Seventy-five percent is consistent with other research in the profession (Lundry et al., 2015; Ramsey & Edwards, 2011; Ramsey & Edwards, 2012), but consensus levels for Delphi studies can vary based on need (Hsu & Stanford, 2007). At the end of the round two questionaries, panelists were also asked if the 67 statements represented of their input from round one, and 96% of the respondents agreed.

The third round included sharing with the panel the results of round two, which included the individual item means, item measures of spread, and the panelist's own individual round two responses (Witkin & Altshuld, 1995). In this consensus-building round, panelists were asked to "examine the results and the degree to which their own responses [were] similar to or different from those of the group" (Witkin & Altschuld, 1995, p. 197). Round three panelists (*n* = 24; 77%) then rerated each of the items. In some cases, a fourth round of a traditional Delphi is recommended (Linestone & Turoff, 2002); however, others consider it to be optional (Skulmoski et al., 2007; Witkin & Altshculd, 1995). In this study, there was a high level of consensus among the panel, so there was "little benefit in developing and sending [a fourth round]" (Witkin & Althschuld, 1995, p. 197). Reminder emails were sent for each of the three rounds to increase response rates (Dillman et al., 2014).

Findings

Three rounds of questionnaires were completed by the Delphi panel to identify the competencies needed by first-year, tenure-track faculty of agricultural education and related specializations. The 67 non-duplicated competency statements, and their accompanying agreement ratings, are presented alphabetically by round in Table 1. The results of the third-round questionnaire were used to determine if each competency statement reached consensus (≤ 75% agree or strongly disagree). At the completion of the third round, there were a total of 52 competencies that reached consensus by the panel of hiring authorities. The 15 competencies that were eliminated after round three included: (a) advising and mentoring doctoral students, (b) advising student organizations, (c) Extension and outreach program delivery, (d) Extension and outreach program development, (e) Extension and outreach

program evaluation, (f) knowledge of broader disciplinary theory beyond one's specialization, (g) knowledge of diverse research methodologies, (h) motivates and supervises direct reports, (i) participates in international programs, (j) provides service to the profession, (k) securing external funding to support their program, (l) securing internal funding to support their program, (m) supervises internships, (n) teaching in an online setting, and (o) understanding of the land-grant mission.

Table 1

Agreement Percentages for Rounds Two and Three of the Delphi Questionnaire

	Round 2 (*n* = 25)		Round 3 (*n* = 24)		
Item	Agree %	Strongly Agree %	Agree %	Strongly Agree %	Endorse
Accept and implement feedback	44.0	48.0	41.7	58.3	Yes
Advising and mentoring doctoral students	24.0	12.0	12.5	16.7	No
Advising and mentoring master's students	48.0	20.0	50.0	25.0	Yes
Advising and mentoring undergraduate students	32.0	44.0	45.8	41.7	Yes
Advising students for career preparation*	36.0	36.0	41.7	50.0	Yes
Advising student organizations	32.0	16.0	37.5	8.3	No
Analyze research data	40.0	40.0	50.0	41.7	Yes
Assessing student learning	40.0	56.0	25.0	70.8	Yes
Classroom management	48.0	44.0	70.8	29.2	Yes
Collect research data	40.0	40.0	54.2	37.5	Yes
Communicating one's expertise*	32.0	40.0	50.0	45.8	Yes
Composing timely and professional written correspondence	60.0	20.0	83.3	8.3	Yes
Demonstrates empathy	60.0	20.0	87.5	8.3	Yes
Demonstrates professionalism	20.0	76.0	4.2	95.8	Yes
Departmental citizenship	48.0	40.0	54.2	37.5	Yes
Develop a research program/agenda	28.0	56.0	12.5	83.3	Yes
Developed teaching philosophy	40.0	44.0	45.8	45.8	Yes
Disseminate research to practitioners*	44.0	28.0	62.5	16.7	Yes
Disseminate research to scholarly audiences	28.0	48.0	29.2	58.3	Yes
Encourages high levels of student performance	60.0	36.0	58.3	41.7	Yes
Encourages student critical thinking	40.0	56.0	29.2	66.7	Yes
Enthusiastic	52.0	36.0	70.8	29.2	Yes
Extension and outreach program delivery	48.0	8.0	54.2	8.3	No

Item	Round 2 (n = 25) Agree %	Round 2 (n = 25) Strongly Agree %	Round 3 (n = 24) Agree %	Round 3 (n = 24) Strongly Agree %	Endorse
Extension and outreach program development	48.0	8.0	54.2	4.2	No
Extension and outreach program evaluation	36.0	8.0	29.2	8.3	No
Foundational knowledge of diverse teaching methodologies	40.0	40.0	58.3	37.5	Yes
Grant and project management*	52.0	8.0	70.8	4.2	Yes
Incorporate diversity and inclusion competencies*	48.0	24.0	79.2	16.7	Yes
Innovative*	40.0	20.0	58.3	29.2	Yes
Instructional delivery	40.0	56.0	12.5	83.3	Yes
Instructional design	40.0	44.0	45.8	41.7	Yes
Interpersonal communication	52.0	40.0	70.8	29.2	Yes
Interpersonal skills (i.e., collegiality, tactfulness, approachable, etc.)	32.0	60.0	20.8	79.2	Yes
Implementation of experiential learning	44.0	32.0	58.3	33.3	Yes
Knowledge of appropriate specialization's theory	56.0	28.0	70.8	20.8	Yes
Knowledge of broader disciplinary theory beyond one's specialization	40.0	4.0	37.5	4.2	No
Knowledge of diverse research methodologies	32.0	20.0	41.7	8.3	No
Motivates and supervises direct reports	36.0	20.0	54.2	8.3	No
Networking with stakeholders	52.0	36.0	66.7	25.0	Yes
Organized	48.0	44.0	58.3	37.5	Yes
Participates in international programs	24.0	8.0	4.2	4.2	No
Participates in professional societies*	32.0	40.0	50.0	29.2	Yes
Personal resiliency	36.0	60.0	33.3	66.7	Yes
Plan and design research	32.0	52.0	25.0	66.7	Yes
Positive supervisor-subordinate relationship	36.0	48.0	50.0	41.7	Yes
Possesses sound moral character	32.0	64.0	25.0	75.0	Yes
Practices attentive and active listening	72.0	20.0	70.8	25.0	Yes
Prioritize competing demands for attention	40.0	52.0	33.3	66.7	Yes
Proactive and strategic relationship building with colleagues	28.0	68.0	29.2	70.8	Yes
Produces journal publications	36.0	48.0	37.5	50.0	Yes
Program and course assessment/evaluation	48.0	28.0	70.8	20.8	Yes

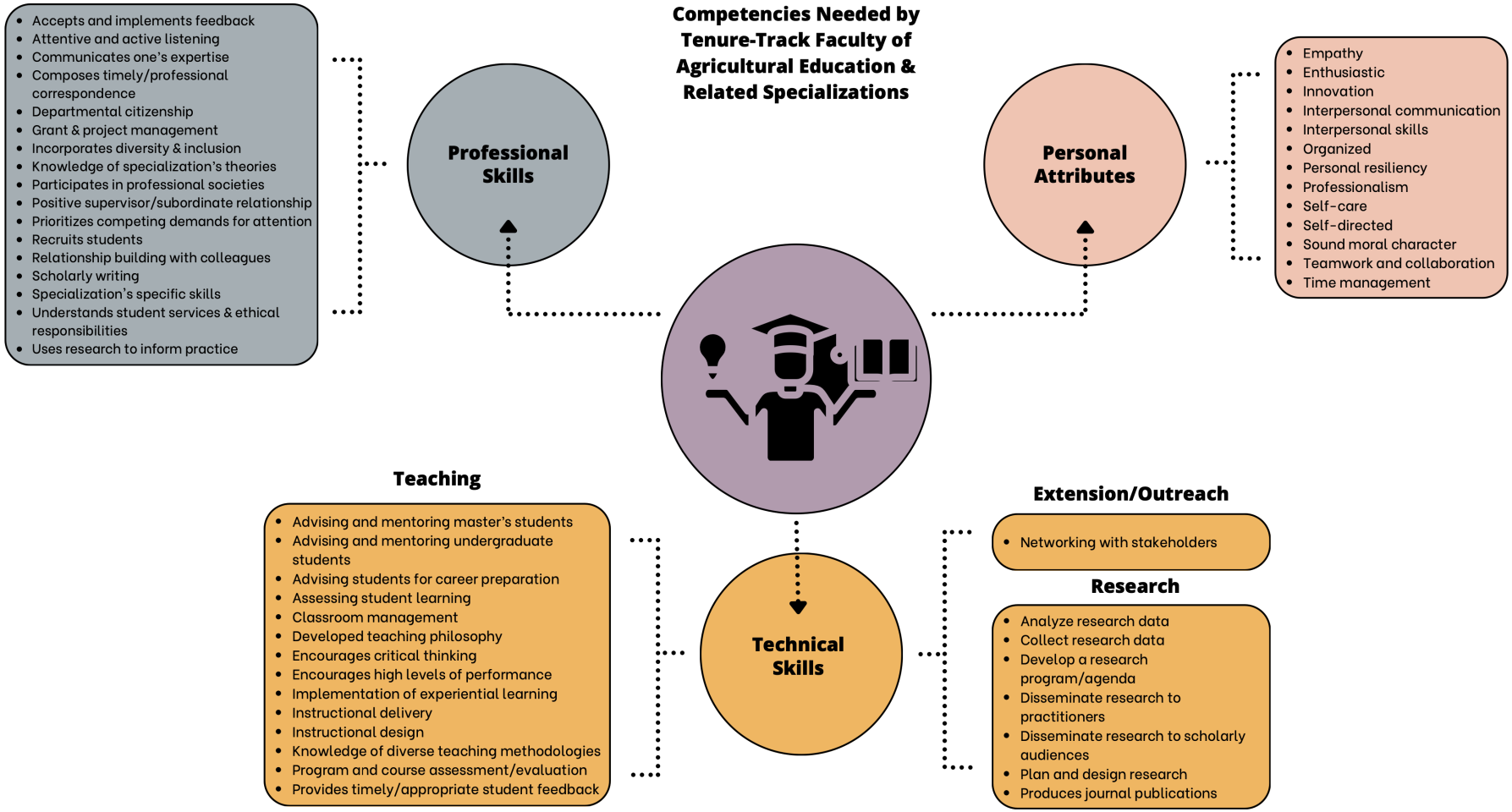
Item	Round 2 (*n* = 25) Agree %	Round 2 (*n* = 25) Strongly Agree %	Round 3 (*n* = 24) Agree %	Round 3 (*n* = 24) Strongly Agree %	Endorse
Provides service to the profession	8.0	24.0	8.3	12.5	No
Provides timely and appropriate student feedback	44.0	52.0	25.0	70.8	Yes
Recruit students*	44.0	24.0	54.2	20.8	Yes
Scholarly writing abilities	24.0	64.0	12.5	83.3	Yes
Securing external funding to support their program	32.0	16.0	29.2	12.5	No
Securing internal funding to support their program	32.0	16.0	33.3	12.5	No
Self-care	44.0	48.0	45.8	54.2	Yes
Self-directed	44.0	56.0	20.8	79.2	Yes
Specialization's specific skills (Ag education, communication, Extension, and/or leadership)	40.0	36.0	58.3	25.0	Yes
Supervises internships	24.0	24.0	41.7	12.5	No
Teaching in an online setting	32.0	36.0	33.3	37.5	No
Teamwork and collaboration	40.0	52.0	20.8	75.0	Yes
Time management	44.0	52.0	37.5	62.5	Yes
Uses research to inform one's own practice*	44.0	28.0	58.3	25.0	Yes
Understanding of student services and ethical responsibilities*	40.0	32.0	75.0	16.7	Yes
Understanding of the land-grant mission	20.0	24.0	29.2	12.5	No

Note. *Indicates item had a change in endorsement from round two to round three.

The hiring-authority endorsed competencies were situated into three thematic categories: (a) professional skills (17 items), (b) technical skills (22 items), and (c) personal attributes (13 items). The endorsed competencies, situated into categories and subcategories, are presented as Figure 2. Professional skills were those employability skills that span multiple dimensions of an individual's role as faculty. Technical skills were those that best aligned with research, teaching, or Extension and outreach. Lastly, personal attributes, sometimes referred to employability skills, generic skills, soft skills, or non-technical skills, were the traits and skills that can be innate to one's personality or disposition, but can also be learned behavior (Claxton et al., 2016; Marin-Zapata et al., 2022). Personal attributes are transferrable across multiple contexts.

Figure 2

Framework of Competencies and Skills Needed by Tenure-Track Faculty in Agricultural Education and Related Specializations



Conclusions, Discussion, and Recommendations

Bowen and Miller (2010) suggested that graduate programs in agricultural education and related specializations should develop individuals' career readiness and progression, their research experience, and the skills needed to be a productive member of society. The competencies that emerged through this study are in direct alignment with Bowen and Miller's (2010) suggestions.

We recognize that this panel's emergent competencies may not be an exhaustive list of those needed to begin one's role as a tenure-track faculty member in the agricultural education professorate. For example, the item *specialization specific skills* is encompassing of numerous skills that may be necessary for faculty of a specific programmatic focus (i.e., teacher education, agricultural communication, etc.). Future research should examine the specialization specific skills needed by beginning faculty based on their programmatic focus. Moreover, it is noteworthy that the subcategory, Extension/Outreach, only had one item emerge: *networking with stakeholders*. Faculty specializing in Extension education, and those who maintain an Extension/outreach appointment, likely need additional competencies to fulfill their role. However, those may be competencies that are learned on the job, and this panel was asked to identify the competencies needed by tenure-track faculty at their point of entry to the profession. The panel also included representatives from non-land grant and regional institutions. Such institutions may not prioritize formalized Extension programming, which may also explain why multiple Extension-specific competencies did not emerge.

We recommend this list of competencies be used by graduate programs of agricultural education and related specializations as a potential framework for evaluating their programming. In line with Tyler's (1949) recommendations, it is important for educational programs to identify a purpose, then plan and organize appropriate experiences needed to obtain said purpose. Therefore, this framework should serve as a tool to accomplish this. Those who are seeking tenure-track faculty roles, or those who advise such students, should use this framework as an individual development tool for preparing the future workforce within the agricultural education professorate.

In addition to using this model to evaluate university graduate programs and individual graduate student's programs of study, we recommend a profession-wide conversation around the development and preparation of future faculty. This discussion should work to develop consensus around the profession's role in this process. Possible systems and programs should be identified to help develop a community of scholars in the field. These systems could include formalized programs within professional organizations but also informal commitments by members of the profession to intentionally focus on the development and preparation of new scholars in the discipline.

As this study sought to identify the competencies needed by first-year tenure-track faculty, it is recommended that the farmwork (Figure 2) presented in this research be reviewed for alignment with Kezar's (2018) Model of a Scholarly Educator (Figure 1). The ultimate goal of

hiring authorities is not only to hire quality first-year faculty but also to support these faculty members in their professional growth to a fulfilling and successful career. A comprehensive career model may prove useful to early career faculty, and the administrators who support them, in the development of their personal career growth plans. Developing such plans can equip faculty members with the competencies and skills needed for their position at various career stages. Future research should be conducted to examine the best practices, such as mentorship and collaboration (Larson et al., 2019), to sustain and support faculty over their career and how such practices may be effectively implemented across the agricultural education professorate.

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References

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. National Bureau of Economic Research. https://www.nber.org/books-and-chapters/human-capital-theoretical-and-empirical-analysis-special-reference-education-first-edition

Bowen, B. E., & Miller, L. E. (2010). The value of the graduate degree. In R. M. Torres, T. Kitchel, & A. L. Ball (Eds.), *Preparing and advancing teachers in agricultural education* (pp. 142–154). The Ohio State University, Curriculum Materials Service.

Boyatzis, R. E. (1982). *The competent manager: A model for effective performance.* Wiley.

Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professorate.* Princeton University Press.

Coleman, B. M., Bunch, J. C., & Roberts, T. G. (2024). Experiential learning in agricultural education: A philosophical discussion. *Journal of Agricultural Education, 65*(1), 283–302. https://doi.org/10.5032/jae.v65i1.2479

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). SAGE Publications.

Claxton, G., Costa, A. L., & Kallick, B. (2016). Hard thinking about soft skills. *Educational Leadership, 73*(6), 60–64. https://eric.ed.gov/?id=EJ1092939

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE Publications.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Wiley.

Gardner, S. K. (2008). Fitting the mold of graduate school: Qualitative study of socialization in doctoral education. *Innovative Higher Education, 33*, 125–138. https://doi.org/10.1007/s10755-008-9068-x

Goecker, A. D. (1992). Priorities for college and university agricultural education faculty. *Journal of Agricultural Education, 33*(3), 2–7. https://doi.org/10.5032/jae.1992.03002

Gosling, D. R., Chae, N. M., & Goshorn, J. R. (2020). The tenure-track life: Experiences of new faculty in tenure-track positions. *The William & Mary Educational Review, 7*(1), 72–97. https://scholarworks.wm.edu/wmer/vol7/iss1/4

Greene, H. C., O'Connor, K. A., Good, A. J., Ledford, C. C., Peel, B. B., & Zhang, G. (2008). Building a support system toward tenure: Challenges and needs of tenure-track faculty in colleges of education. *Mentoring & Tutoring: Partnership in Learning, 16*(4), 429–447. https://doi.org/10.1080/13611260802433791

Harder, A., Roberts, T. G., & Lindner, J. R. (2021). Commonly accepted theories models and philosophies: The subjective norms of our discipline(s). *Journal of Agricultural Education, 62*(1), 196–211. https://doi.org/10.5032/jae.2021.01196

Hsu, C. C., & Sanford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research, and Evaluation, 12*(10). https://doi.org/10.7275/pdz9-th90

Kezar, A. (2018). A new vision for the professoriate. *Change: The Magazine of Higher Learning, 50(*3-4), 84–87. https://doi.org/10.1080/00091383.2018.1509616

Larson, L. R., Duffy, L. N., Fernandez, M., Sturts, J. Gray, J., & Powell, G. M. (2019). Getting started on the tenure track: Challenges and strategies for success. *SCHOLE: A Journal of Leisure Studies and Recreation Education, 34*(1), 36–51. https://doi.org/10.1080/1937156X.2019.1589804

Linstone, H. A., & Turoff, M. (Eds.). (1975). *The Delphi method: Techniques and applications*. Addison Wesley.

Lundry, J., Ramsey, J. W., Edwards, M. C., & Robinson, J. S. (2015). Benefits of career development events as perceived by school-based agricultural education teachers. *Journal of Agricultural Education, 56*(1), 43–57. https://doi.org/10.5032/jae.2015.01043

Love, A. S., Morris, D., & Sego, A. (2023). Navigating the demands of tenure-track positions. *Health Promotion Practice, 24*(2), 218–222. https://doi.org/10.1177/15248399221084225

Marin-Zapata, S.I., Román-Calderón, J.P., Robledo-Ardila, C., & Jaramillo-Serna, M. A. (2022). Soft skills, do we know what we are talking about? *Review of Managerial Science, 16*(4), 969–1000. https://doi.org/10.1007/s11846-021-00474-9

National Academies of Sciences, Engineering, and Medicine. (2021). *Creating the future workforce in food, agriculture, and natural resources: Proceedings of a workshop.* The National Academies Press. https://doi.org/10.17226/26065

Nir, A. E., & Zilberstein-Levy, R. (2006). Planning for academic excellence: Tenure and professional considerations. *Studies in Higher Education, 31*(5), 537–554. https://doi.org/10.1080/03075070600922725

Ramsey, J. W., & Edwards, M. C. (2011). Entry-level technical skills that agricultural industry experts expected student to learn through their supervised agricultural experiences: A modified Delphi study. *Journal of Agricultural Education, 52*(2), 82–94. https://doi.org/10.5032/jae.2011.02082

Ramsey, J. W., & Edwards, M. C. (2012). Entry-level technical skills that teachers expected student to learn through their supervised agricultural experiences (SAEs): A modified Delphi study. *Journal of Agricultural Education, 53*(3), 42–55. https://doi.org/10.5032/jae.2012.03042

Rocca, S. J. (2010). Determining the professional development needs of faculty in a college of agriculture. *North American Colleges and Teachers of Agriculture Journal, 54(*1), 69–75. https://nactaarchives.org/index.php/vol-54-num-1-march-2010-sp-1909931157/115-determining-the-professional-development-needs-of-faculty-in-a-college-of-agriculture

Schultz, T. W. (1971). *Investment in human capital: The role of education and of research*. The Free Press.

Shinn, G. C., & Baker, M. (2010). Graduate program design. In R. M. Torres, T. Kitchel, & A. L. Ball (Eds.), *Preparing and advancing teachers in agricultural education* (pp. 156–178). The Ohio State University, Curriculum Materials Service.

Skulmoski, G. J., & Hartman, F. T., Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education: Research, 6*(1), 1–21. https://www.learntechlib.org/p/111405/

Spencer, L. M., & Spencer, S. M. (1993). *Competence at work: Models for superior performance*. Wiley.

Tyler, R. W. (1949). *Basic principles of curriculum and instruction.* University of Chicago Press.

Welton, R., Mokma, A., Foster, D., Cvancara, J., & Byers, C. (1981). Postsecondary agricultural faculty inservice needs assessment. *Journal of Agricultural Education, 22*(3), 36–43. https://doi.org/10.5032/jaatea.1981.03036

Williams, D. L. (1997). Focusing agricultural education research: An agenda for the graduate student. *Journal of Agricultural Education, 38*(3), 28–35. https://doi.org/10.5032/jae.1997.03028

Witkin, B. R., & Altschuld, J. W. (1995). *Planning and conducting needs assessments: A practical guide.* SAGE Publications.