

2012

Agricultural Education Early Field Experience Through the Lens of the EFE Model

Scott Smalley

Iowa State University, smalle16@iastate.edu

Michael S. Retallick

Iowa State University, msr@iastate.edu

Follow this and additional works at: http://lib.dr.iastate.edu/ageds_pubs



Part of the [Agricultural Education Commons](#), [Curriculum and Instruction Commons](#), and the [Other Education Commons](#)

The complete bibliographic information for this item can be found at http://lib.dr.iastate.edu/ageds_pubs/4. For information on how to cite this item, please visit <http://lib.dr.iastate.edu/howtocite.html>.

This Article is brought to you for free and open access by the Agricultural Education and Studies at Iowa State University Digital Repository. It has been accepted for inclusion in Agricultural Education and Studies Publications by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

Agricultural Education Early Field Experience Through the Lens of the EFE Model

Abstract

The purpose of this national study was to describe agricultural teacher education early field experience (EFE) practices using the EFE model. The population for this study was all agricultural education teacher preparation programs (N = 83) listed in the AAAE Directory of University Faculty in Agricultural Education. Data were collected via an online survey sent to a single point of contact (i.e., the agricultural teacher education coordinator) at each institution. For this study, EFE was defined as all field experiences that occur prior to student teaching; the experiences could be offered within or outside of the agricultural education curriculum. Programs required a minimum number of contact hours and a minimum number of lessons to be taught while in the field. The most common forms of assessment were the university supervisor's review of documents, cooperating teacher signatures, reflective writing, and student journaling. This study has implications for agricultural teacher education programs that are planning to evaluate or revamp their current EFE programs. Developing consistency across programs will provide a better experience for all students involved in agricultural education EFE.

Keywords

early field experience (EFE), agricultural education, preservice education, teacher education

Disciplines

Agricultural Education | Curriculum and Instruction | Other Education

Comments

This article is from *Journal of Agricultural Education* 53 (2012): 99, doi:10.5032/jae.2012.02099. Posted with permission.

Agricultural Education Early Field Experience Through the Lens of the EFE Model

Scott W. Smalley
Michael S. Retallick
Iowa State University

The purpose of this national study was to describe agricultural teacher education early field experience (EFE) practices using the EFE model. The population for this study was all agricultural education teacher preparation programs (N = 83) listed in the AAAE Directory of University Faculty in Agricultural Education. Data were collected via an online survey sent to a single point of contact (i.e., the agricultural teacher education coordinator) at each institution. For this study, EFE was defined as all field experiences that occur prior to student teaching; the experiences could be offered within or outside of the agricultural education curriculum. Programs required a minimum number of contact hours and a minimum number of lessons to be taught while in the field. The most common forms of assessment were the university supervisor's review of documents, cooperating teacher signatures, reflective writing, and student journaling. This study has implications for agricultural teacher education programs that are planning to evaluate or revamp their current EFE programs. Developing consistency across programs will provide a better experience for all students involved in agricultural education EFE.

Keywords: early field experience (EFE); agricultural education; preservice education, teacher education

This paper is a product of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 3613 and sponsored by the Hatch Act and State of Iowa.

Introduction

Early field experience (EFE) is one aspect of the preparation process for any student preparing to enter the agricultural education profession. It provides significant learning experiences for preservice teachers in an authentic classroom environment (Aiken & Day, 1999).

Guyton and Byrd (2000) defined EFE as the range of school experiences in a teacher education program that occur prior to student teaching. The National Council for Accreditation of Teacher Education (NCATE, 2008) identified the purpose of EFE as the application of preservice teacher knowledge and skills in various settings, which could include teaching lessons, tutoring students, or observing in the classroom, among others. An EFE often includes interactions with peers, a cooperating teacher, and a university supervisor. This *triad* is vital if the preservice teacher is to learn from

the EFE and develop an understanding of the profession (McIntyre, Byrd, & Foxx, 1996).

Educators have not disputed the importance of EFE (Guyton & Byrd, 2000), and Pierce (1996) suggested that EFE should occur early and regularly during preservice training. But despite their importance, many EFE programs suffer from a lack of purpose and expectations. Hudson, Bergin, and Chayst (1993) identified five specific issues that can affect the effectiveness of EFE: (a) lack of common goal, (b) lack of control, (c) limited learning due to the lack of experiences the preservice teacher can compare, (d) difference between what is being practiced in the classroom and what is being taught on campus, and (e) limited opportunities. NCATE (2008) has addressed the lack of clear goals by requiring institutions to develop a purpose statement, outline the educational process, and define student outcomes as part of a conceptual framework for their teacher education program, which begins to

meld EFE and courses taught on campus (McIntyre et al., 1996). Retallick and Miller (2007) concluded that EFE programs have established requirements such as a minimum number of contact hours and a minimum number of lessons planned and taught. Additionally, EFE programs are driven by internal and external factors including licensure as well as state and national accreditation. To ensure its effectiveness, EFE should be aligned with the entire teacher preparation program (Little & Robinson, 1997).

McLean and Camp (1998) stated that the call for reform of agricultural teacher education preparation has gained momentum in the last 15 years. This momentum could be due in part to the impact of EFE in preservice teacher education. Myers and Dyer (2004) emphasized that EFE is important in agricultural teacher education programs because it assists students in making decisions for the future. A quality EFE also helps ensure that preservice teachers are prepared for the profession. Agricultural education faculty need to continue to evaluate their teacher preparation programs, including EFE, to determine whether they are accomplishing their mission of preparing qualified teachers (Swortzel, 1995).

Theoretical and Conceptual Frameworks

This study is grounded in experiential learning theory. Kolb (1984) defined experiential learning as a “means for examining and strengthening the critical linkages among education, work and personal development” (p. 4). Phipps and Osborne (1988) wrote that experiential learning in agricultural education has an “emphasis on learning by doing” (p. 19).

This emphasis is apparent in the attention given to laboratory work, field trips, problem solving, and supervised occupational experience programs.

Learning by doing is also an important aspect of EFE in a teacher education program. Through EFE, preservice teachers have experiences that resemble and model the experiences they will have as teachers. Although these experiences can lead to transfer of information (learning), they are just the starting point for reflective educators (Mentkowski & Associates, 2000). Rogers (1969) espoused that experiential learning happens continuously from meaningless to significant learning and identified five elements present in experiential learning: (a) direct, personal involvement; (b) learner initiation; (c) pervasiveness; (d) learner evaluation; and (e) essence is meaning.

This study’s conceptual framework, which is built on experiential learning theory, is Retallick’s (2005) structure and content model of EFE in teacher education (Figure 1). The model identifies four major components of EFE: foundation, organization, implementation, and assessment. Foundation includes teacher education standards and a conceptual framework, which explains the basis for EFE. Organization includes documents (e.g., syllabi, forms, and handbooks), placement, and experiences (stand-alone or embedded). Implementation includes (a) interaction among EFE participants, university supervisors, cooperating teachers, and peers; (b) orientation to EFE outcomes and learning strategies; (c) outcomes; and (d) learning strategies necessary to accomplish the outcomes. The model also includes a fourth component, assessment.

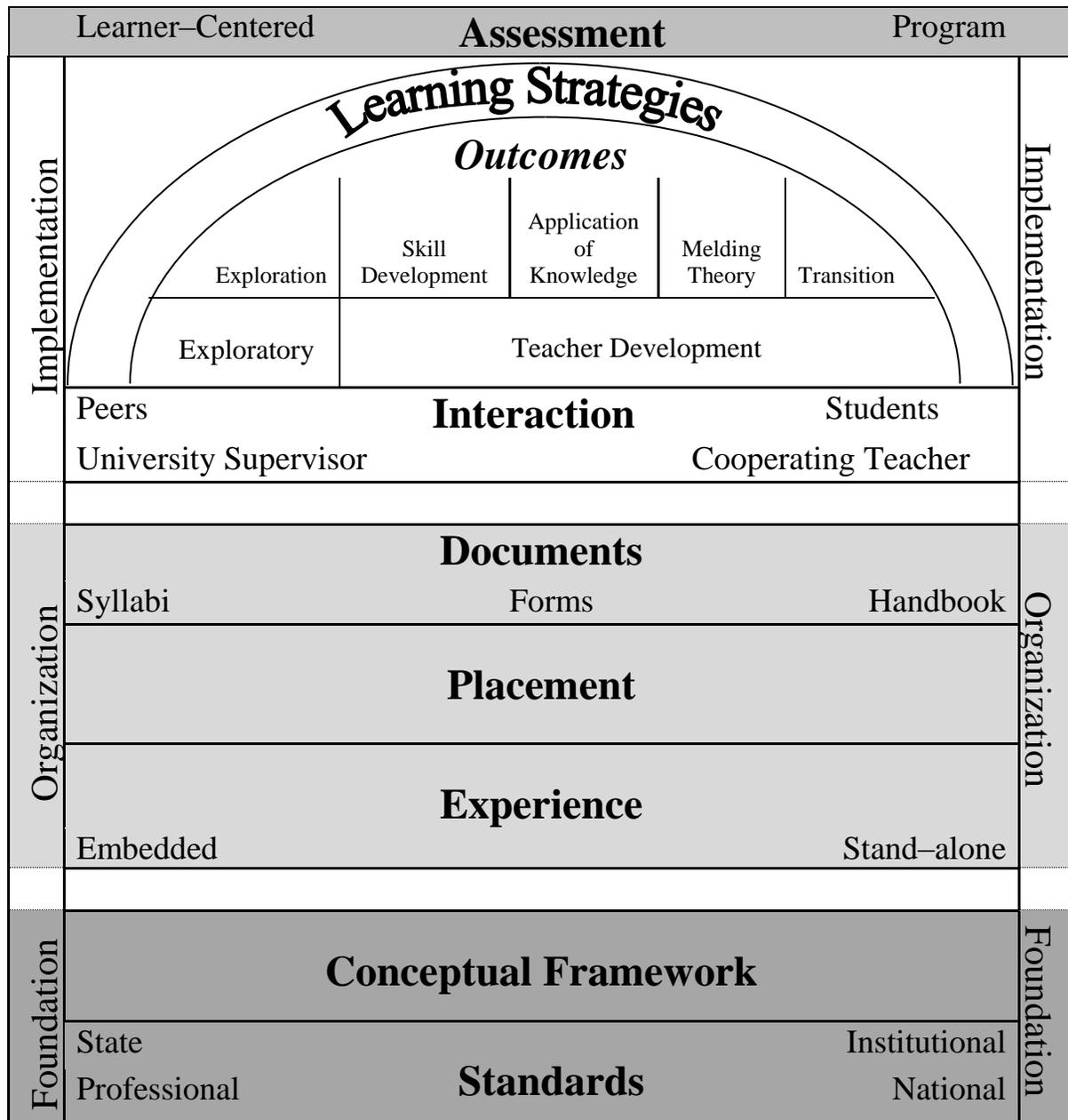


Figure 1. From “Teacher Preparation in Career and Technical Education: A model for Developing and Researching Early Field Experiences” by Retallick and Miller, 2010, *Journal of Career and Technical Education*, 25(1), 62–75. Reprinted with permission.

Smalley and Retallick (2010) enhanced the EFE model by asking a Delphi panel of experts in agricultural teacher education to identify appropriate types of interaction and activities. Those experts indicated that EFE should be documented via a combination of journaling and portfolio development (e.g., observation notes and reflective papers) and that this

documentation should be verified by the cooperating teacher and through university assessments (e.g., cooperating teacher signatures and reviews of students’ portfolios). Since the development of Retallick’s (2005) model and its refinement by Smalley and Retallick (2010), no research has been conducted to determine what practices are taking place in each component of

the EFE model, what elements of EFE are practiced, or extent to which the EFE model reflects practice in agricultural teacher education programs.

Purpose and Objectives

The purpose of this national study was to describe agricultural teacher education EFE practices using the EFE model.

The study focused on three research questions:

1. What practices take place in each component of the EFE model (i.e., foundation, organization, implementation, and assessment)?
2. Are there elements of EFE that are not represented in the model?
3. To what extent does the EFE model reflect actual practice?

Methods

The population for this study was all agricultural education teacher programs ($N = 83$) listed in the *AAAE Directory of University Faculty in Agricultural Education* (American Association for Agricultural Education, 2010). The agricultural education teacher preparation coordinator at each institution served as the contact person for this study.

The researchers followed Dillman's (2007) tailored design method and principles for developing a survey instrument when developing data collection procedures as well as the survey itself. For this study, EFE was defined as all field experiences that occur prior to student teaching; the experiences could be offered within or outside of the agricultural education curriculum. This definition was provided in the cover letter and introduction to the survey.

The survey had five parts: implementation, assessment, foundation, organization, and demographics. Participants were asked to identify the purposes of EFE, which for this study were categorized as exploratory or teacher development. Exploratory was defined as providing the opportunity to investigate the profession and develop an understanding of what it means to be an educator. Teacher development was defined as the stage of

development after students explored and determined that teaching was the career for them. During this stage, preservice teachers begin to transition from student to teacher by developing and enhancing skills and knowledge prior to entering the teaching profession (Retallick, 2005).

The survey included both dichotomous, close-ended and open-ended questions to obtain specific information (Dillman, 2007). A panel of experts that consisted of agricultural education teacher educators and graduate students reviewed the survey for content validity, and their suggestions were integrated. The survey was pilot tested with teacher educators who were not part of the study population. Participants were asked to read the items carefully and indicate if any of the items were not suitable. Cronbach's alpha was computed using results of the pilot test to assess internal consistencies of the summated scales in the survey. The coefficients were .84 for types of interaction, .81 for activities, and .74 for assessments.

Data collection followed Dillman's (2007) electronic survey plan, which includes four contacts and a special contact. For this study, the special contact was a phone call to nonrespondents. Data collection began on June 1, 2010, and concluded on June 20, 2010. Fifty-three of the 83 surveys were returned for an initial response rate of 59%. The researchers attributed the lower-than-normal response rate to the timing of the data collection, which occurred during the summer when many teacher preparation coordinators and other faculty members were away from campus, and wanted to improve the response rate to better represent the profession. The data collection procedure was modified to contact nonrespondents after the start of the fall semester, and the Institutional Review Board approved this modification. An informational email was sent to nonrespondents on September 1, 2010, notifying them this would be the only contact from the institution and encouraging their participation in the study. A link to the survey was sent to nonrespondents on September 2, 2010. After the second phase of data collection, 66 of the 83 surveys had been returned for an overall usable response rate of 79.51%. To control for nonresponse error, the researchers compared early and late respondents

and found no significant differences. All data were analyzed using descriptive statistics.

Findings

The institutional makeup of this study consisted of 1862 land–grant (57.14%), 1890 land–grant (5.35%), regional/state (32.14%), and private institutions (5.35%). A majority of the programs offered a Bachelor of Science in agricultural teacher education (83.92%), 12.5% offered a Bachelor of Science plus one year, 44.64% offered a Master of Science in agricultural education, and 25% offered other

degrees in agricultural education besides the three already mentioned.

Foundation

The foundation component of the EFE model includes a conceptual framework and standards (state, institutional, professional, and national). When asked to identify which standards drive their institution's agricultural teacher education program, including the EFE component, participants reported that state (86.66%) and institutional standards (66.66%) were the most influential (Table 1).

Table 1

Standards that Drive Agricultural Teacher Education Programs, Including Early Field Experiences

Standard	%
State	86.66
Institutional	66.66
Professional	46.66
National	43.33
Other	5.00

The majority of programs (65.00%) were accredited by NCATE (Table 2). During the study, NCATE and the Teacher Education Accreditation Council voted to consolidate and

formed a new accrediting body called the Council for the Accreditation of Education Programs (NCATE, 2010).

Table 2

Accrediting Agencies of Agricultural Teacher Education Programs, Including Early Field Experiences

Agency/organization	%
National Council for Accreditation of Teacher Education (NCATE)	65.00
State accreditation	58.33
Teacher Education Accreditation Council (TEAC)	8.33
Other accreditation	5.00
Did not have program–affiliated accrediting agency	5.00
National Board of Professional Teaching Standards (NBPTS)	3.33

Organization

The organization component of the EFE model includes documents, placement, and experience.

Documents. Agricultural teacher education programs used a variety of documents, such as handbooks and lesson plans, to capture preservice teachers' preparation for, experiences in, and thoughts about EFE. More than half (69.09%) of the programs used a handbook or bulletin to communicate with preservice teachers, and 56.36% of programs expected

preservice teachers to plan a lesson (56.36%) as part of their EFE. Additionally, 52.00% of programs expected preservice teachers to teach a lesson. On average, preservice teachers were expected to teach 14 lessons during their EFE.

Placement. Because EFE has many purposes, such as helping students transition from student to teacher and allowing students to experience various aspects of teaching, it is designed to occur during many different stages of preservice teacher education. No single grade

level or combination of grade levels emerged from the data.

Placement is crucial to ensuring that preservice teachers have a quality EFE. Fifty-one percent of programs required preservice teachers to select an EFE site from an approved list, and 75% required preservice teachers to complete the EFE in a high school or middle school program. Half of the programs did not require an EFE for admission to the university's teacher education program. On average, preservice teachers were expected to complete a minimum of 76 hours of EFE for licensure (actual minimums ranged from 30 to 200 hours).

Most programs offered an EFE orientation for students (95.54%), but fewer programs offered orientations for college/university staff (52.72%) or cooperating teachers (57.40%). More than half of the programs (54.38%) had minimum qualifications for teachers to be eligible to serve as an EFE cooperating teacher. Fifty-two percent of programs did not require a minimum number of site visits by the preservice teacher as part of the EFE.

Experience. An EFE can be part of a course or a stand-alone experience, and a program may offer several forms of EFE. Of all EFE identified in this study, 85.00% were embedded

in a course, and 65.00% were considered stand-alone experiences. Programs also required preservice teachers to complete several unique EFE throughout their teacher education program. Ten programs reported that preservice teachers complete three (18.2%) to four (18.2%) EFE (36.4%).

Implementation

The implementation component of the EFE model involves interaction and activities. Forty-eight percent of programs reported that some collaboration occurs among the preservice teacher, cooperating teacher, and university supervisor during the required EFE; 8.00% reported no collaboration, 15.62% reported very little collaboration, and 28.12% reported much collaboration.

Participants were asked to identify the purposes of EFE using a list of 16 statements separated into two categories: exploratory and teacher development (Table 3). The most common purposes of an exploratory EFE were to identify the roles of professional educators (80.64%) and have a positive experience (80.32%). The most common purpose of a teacher development EFE was to recognize a successful teaching strategy (85.24%).

Table 3
Purposes of Early Field Experience, Categorized as Exploratory or Teacher Development

Type of interaction	%
Exploratory	
Identify the roles of a professional educator.	80.64
Have a positive experience.	80.32
Observe classroom instruction.	75.80
Define and describe characteristics of effective teacher.	73.77
Affirm the desire for becoming an agricultural educator.	72.58
Develop an understanding of what is involved in being an agricultural teacher.	67.21
Teacher development	
Recognize a successful teaching strategy.	85.24
Recognize a successful classroom and laboratory management strategy.	79.03
Educate preservice teacher about what it means to learn to teach as they reflect on why, whom and how they will teach.	75.00
Identify skill development (classroom instruction/management, program planning) of a teacher.	70.96
Identify cooperating teacher behaviors that influence student behavior.	70.49
Interact with community members, school staff, and administration.	69.49
Recognize awareness of student behavior.	67.74
Develop understanding of a complete agricultural education program (i.e., classroom/laboratory, FFA, Supervised Agricultural Experience)	67.21
Develop observational skills and techniques.	67.21
Recognize awareness of student engagement.	65.00

EFE activities are events that take place prior to student teaching. Table 4 shows EFE activities reported in this study. Nearly all programs (93.75%) conducted an orientation at which university faculty discussed the

expectations of EFE. Fewer programs provided student-led preservice teacher discussions (45.31%) and used on-campus case studies (32.81%).

Table 4
Types of Early Field Experiences Used in Agricultural Teacher Education Programs

Activity	%
Orientation from university faculty on the expectations of EFE.	93.75
Observation of students' behavior by preservice teacher.	92.18
Develop reflection paper throughout experience (micro-reflections).	89.06
Note taking of observations while on EFE.	89.06
Preservice teacher observation of cooperating teacher.	89.06
Observation of student's learning by preservice teacher.	81.25
Preservice teacher teaching a lesson.	76.56
Observing the supervision of student FFA projects and activities.	75.00
Develop written portfolio documentation of experience.	75.00
Compile list of information regarding the EFE-program visit.	70.31
Interviewing middle/high school students, cooperating teacher, school counselor, principal, etc.	64.06
Observing the supervision of students' Supervised Agricultural Experience projects and activities.	64.06
Student-led discussion by preservice teacher.	45.31
Review case studies in a university setting.	32.81

Additional interactions reported in this study included supervising FFA and supervised occupational experiences, attending shows/fairs, coaching and judging students who planned to participate in career development events, visiting community partners (e.g., businesses and government agencies), and working with a cooperating teacher to plan and conduct a demonstration and reflect on the experience. Other reported engagement activities included developing a service learning plan to implement with a cooperating teacher, grading papers,

tutoring students, observing special needs instruction, and conducting a middle school lesson.

Assessment

The EFE model includes two types of assessment: program and student. As shown in Table 5, nearly all programs assessed EFE with document reviews by university supervisors (95.08%), cooperating teacher signatures (88.52%), reflective writing (83.60%), and student journaling (80.32%).

Table 5

Forms of Early Field Experience Assessment Used in Agricultural Teacher Education Programs

Form of assessment (<i>n</i> = 66)	%
University supervisor review of documents	95.08
Cooperating teacher verification/signature	88.52
Preservice teacher completing a reflective paper on experience	83.60
Journaling on EFE	80.32
Preservice teacher completing an observation of the visited agricultural education program (reviewing: teaching resources, curriculum, facilities, budget, etc.)	70.49
Collection of key resources and documents	63.93
Cooperating teacher evaluation	63.93
Development of a portfolio	60.65
Seminar for EFE students to discuss and compare experiences as a group	54.09

Additional forms of assessment reported in this study included online discussion posts, Twitter, contacting cooperating teacher regarding the level of participation of preservice teacher, and a clinical interview. Some programs also had preservice teachers develop a portfolio of lessons and review how lessons in the school they visited matched up with state standards.

Evaluation of an EFE program can be completed at various levels and is important to a program's continuing success. Seventy-eight percent of programs reported that their EFE program was evaluated (Table 6); an accreditation review (75.00%) was the most common type of review.

Table 6

Forms of Early Field Experience Evaluations Used in Agricultural Teacher Education Programs

Type/level of review	%
Accreditation	75.00
Departmental	72.91
University	56.25
State	47.91
Other	6.25

Conclusions/Recommendations/Implications

The triad of interaction with peers, cooperating teacher, and university supervisor is vital to a successful EFE (McIntyre et al., 1996).

This interaction seems to be standard practice in most agricultural teacher education programs; 76.55% of programs reported either some or much collaboration between the preservice

teacher, EFE cooperating teacher, and university supervisor during the required EFE.

Most programs also reported having specific EFE requirements and expectations, such as a minimum number of contact hours and lessons to be taught while in the field. These results are consistent with those of Retallick and Miller (2007). Furthermore, most programs offered an orientation prior to the EFE.

The most common forms of EFE assessment reported in this study were the university supervisor's review of documents, cooperating teacher signatures, reflective writing, and student journaling. This is consistent with and validates the findings of Smalley and Retallick's (2011) national Delphi study.

The findings from this study can be incorporated into the components of Retallick's (2005) EFE model: foundation, organization, implementation, and assessment. This study adds to the depth and substance of EFE research and Retallick's model by categorizing interactions as exploratory or teacher development and by identifying activities as well as methods of EFE assessment and documentation.

This study has implications for agricultural teacher education programs that are planning to

evaluate or revamp their EFE programs. Programs across the country can use these national results as comparisons or simply to learn what types of EFE interactions, activities, and assessments are currently used. Developing consistency across programs will provide a better experience for all preservice teachers involved in agricultural education EFE, and expanding EFE opportunities geared toward both exploration and teacher development will increase the number of real-world opportunities a preservice teacher has prior to student teaching. The opportunity to participate in a varied and comprehensive EFE could positively affect recruitment and retention of preservice agricultural education teachers. And this, in turn, could help fulfill the long-range goal for agricultural education: to have 10,000 quality agricultural education programs in operation by 2015 (the 10X15 goal; Team Ag Ed, 2010).

Further research needs to take place to determine if all teacher education programs associated with career and technical education are using the same or similar methods to assess or document EFE. Little is known about how EFE in career and technical education programs is reviewed and how recommendations are handled.

References

- Aiken, I. P., & Day, B. D. (1999). Early field experiences in preservice teacher education: Research and student perspectives. *Action in Teacher Education, 21*(3), 7–12.
- American Association for Agricultural Education. (2010). Directory Retrieved from aaeonline.org/directory.php
- Guyton, E., & Byrd, D. (Eds.). (2000). *Standards for field experience in teacher education*. Reston, VA: Association of Teacher Educators.
- Hudson, L., Bergin, D., & Chayst, C. (1993). Enhancing culturally responsive pedagogy: Problems and possibilities. *Teacher Education Quarterly, 20*(3), 5–17.
- Kolb, D. A. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall.
- Little, M. E., & Robinson, S. M. (1997). Renovating and refurbishing the field experience structures for novice teachers. *Journal of Learning Disabilities, 30*(4), 433–441.
- McIntyre, D. J., Byrd, D. M., & Foxx, S. M., (1996). Field and laboratory experiences. In J. Sikula (Ed.), *Handbook of research on teacher education* (pp. 171–193). New York, NY: Simon & Schuster Macmillan.

- McLean, R. C., & Camp, W. G., (1998). Exemplary agricultural teacher education programs in the United States. *Proceedings of the annual conference of the Southern Association of Agricultural Scientists*.
- Mentkowski, M., & Associates. (2000). *Learning that lasts: Integration learning, development, and performance in college and beyond*. San Francisco, CA: Jossey-Bass.
- Myers, B. E., & Dyer, J. E. (2004). Agricultural teacher education programs: A synthesis of the literature. *Journal of Agricultural Education*, 45(3), 44–52. doi: [10.5032/jae.2004.03044](https://doi.org/10.5032/jae.2004.03044)
- National Council for Accreditation of Teacher Education. (2008). *Professional standards for the accreditation of schools, college, and departments of education*. Washington, DC: Author.
- National Council for Accreditation of Teacher Education. (2010, October 25). *NCATE & TEAC Form New Accrediting Body; The Council for the Accreditation of Educator Preparation (CAEP)* [Press release]. Retrieved from <http://www.ncate.org/Public/Newsroom/NCATENewsPressReleases/tabid/669/EntryId/121/NCATE-and-TEAC-Form-New-Accrediting-Body-The-Council-for-the-Accreditation-of-Educator-Preparation-CAEP.aspx>
- Phipps, L. J., & Osborne, E. W. (1988). *Handbook on agricultural education in public schools*. Subsequent Edition. Danville, IL: Interstate.
- Pierce, D. R. (1996). Early field experience and teacher preparation: Authentic learning. *The Teacher Educator*, 31(Winter), 217–225.
- Retallick, M. S. (2005). Early field experience in agricultural education. *Dissertation Abstracts International*, 66, 1249.
- Retallick, M. S., & Miller, G. (2010) Teacher Preparation in Career and Technical Education: A model for Developing and Researching Early Field Experiences. *Journal of Career and Technical Education*, 25(1), 62–75.
- Retallick, M. S., & Miller, G. (2006). A model for implementing early field experiences in teacher education. *Proceedings of the American Association for Agricultural Education*, 367–379. Retrieved from <http://aaae.okstate.edu/proceedings/2006/Research%20Papers/Paper%20H-1.pdf>
- Retallick, M. S., & Miller, G. (2007). Early field experience in agricultural education: A national descriptive study. *Journal of Agricultural Education*, 48(1), 127–138. doi: [10.5032/jae.2007.01127](https://doi.org/10.5032/jae.2007.01127)
- Rogers, C. R. (1969). *Freedom to learn*. Columbus, OH: Charles E. Merrill.
- Smalley, S. W., & Retallick, M. S. (2011). Purposes, activities, and documentation of early field experience in agricultural teacher education: A national Delphi study. *Journal of Agricultural Education*, 52(3), 100–109. doi: [10.5032/jae.2011.03100](https://doi.org/10.5032/jae.2011.03100)
- Swortzel, K. A. (1995). Current status of pre-service teacher education programs in agriculture. *Proceedings of the 1997 national agricultural education research meeting: Creating the future through research*, 24, 55–64.
- Team Ag Ed. (2010). *The long range goal for agricultural education*. Retrieved from <http://www.teamaged10x15.org/>

SCOTT W. SMALLEY is a graduate student in the Department of Agricultural Education and Studies at Iowa State University, smalle16@iastate.edu

MICHAEL S. RETALLICK is an Assistant Professor in the Department of Agricultural Education and Studies at Iowa State University, 206 Curtiss Hall, Ames, IA 50011. msr@iastate.edu