

The Supply of School-Based Agricultural Educators: 2014-2016

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Abstract

There is a continued shortage of school-based agricultural educators in the United States. Since 1965, the American Association for Agricultural Education (AAAE) has contributed to better understanding this issue by providing reliable data for decision makers and stakeholders through the National Agricultural Education Supply and Demand Study. Currently, although the quantity of licensed program completers is not at historic highs, trends are positive. Notably, 1/3 of agricultural teacher licensure programs produced 2/3 (n=1452) of all school-based agricultural education program completers between 2014 to 2016. During that three-year timeframe, approximately 72% of program completers accepted a position in school-based agricultural education. Based on available demographic data, the typical program completer in agricultural education is a white female. To date, agricultural teacher education program completers are not demographically representative of the general population, school population, or membership in the National FFA Organization. Further research is needed to explore the growing gender, race and ethnic disparity that exists within agricultural education. Additionally, to increase the overall supply of school-based agricultural educators, research regarding the viability, accessibility, and sustainability of alternative pathways is needed.

Introduction and Conceptual Framework

There is a documented shortage of educators across the United States, impacting a number of content areas. Shortages are occurring for reasons ranging from a decrease in teachers entering the profession, an increase in student enrollment, and new positions and courses being added to better prepare students for life beyond graduation (Berry & Shields, 2017). The shortage is exacerbated by factors including public perception of the profession influenced by federal and state legislation, the teacher evaluation process (Goldhaber, 2015), and increased workload, paperwork, and the amount of classroom time lost to standardized testing (Thibodeaux, Labat, Lee, & Labat, 2015). As such, the need to explore policy interventions to address the desirability of the profession becomes acute.

Since the very beginning, there have been concerns about the professional capacity to prepare an adequate supply of school-based agricultural educators. According to Kruse (1915),

This sudden and rapid growth and the resulting demand for teachers has created a serious, if not the most serious problem in the training of teachers... Nobody knew what should be taught in secondary agriculture, much less what qualifications the agricultural teacher should have, and least of all, how to train them (p. 2).

Swanson (1942) continued, “The initiation of vocational agriculture under the vocational education acts created a problem of teacher supply” (p. 526). True (1929) acknowledged fluctuating demand was difficult for any state to estimate. He continued, “The ideal would be to have production well in advance of the probable annual need, perhaps 10 to 20 percent. This would provide for emergency years and in average years allow for culling” (True, 1929, p. 8).

Since 1965, the National Supply and Demand for Agricultural Education project has been supported by the American Association for Agricultural Education (AAAE) and utilized by its members. The study has historically provided a great deal of valuable information to those engaged in the agricultural education profession. Particularly, determining who is teaching school-based agricultural education and whether or not there is an appropriate supply to meet demand is important to agriculture teacher educators, school-based agriculture students, parents, school administrators, policy makers and other stakeholders in agricultural education. Kantrovich (2010) stated:

Leaders of the profession need current, accurate estimates of the numbers of and demand for teachers of Agricultural Education to provide for meaningful policy decisions at all levels. Teacher organizations and teacher educators need current, accurate supply and demand information to use in recruitment activities and in counseling potential teachers of Agricultural Education. Yet, detailed data of that nature, specific to Agricultural Education, are not available outside this study (p. 8).

Ongoing conversations have occurred regarding the supply of agricultural educators at regional and national AAAE meetings, and school-based agriculture stakeholder organization meetings. The profession has challenged individuals to tackle recruitment and retention issues head on within their respective states. This study directly addresses priorities in the AAAE research agenda (Roberts, Harder, & Brashears, 2016) with *Research Priority Area 3: Sufficient Scientific and Professional Workforce That Addresses the Challenges of the 21st Century* and *Research Priority Area 5: Efficient and Effective Agricultural Education Programs*. By describing the supply of agricultural educators, the profession will be better positioned to achieve systematic sustainability and growth in the coming years. It is the task of the leaders within agricultural education to identify contextually relevant and appropriate applications of this research.

The conceptual framework presented in Figure 1 guided this study. The framework identifies factors contributing to school-based agricultural educator supply and demand. Greater knowledge regarding the sources impacting supply and the factors influencing demand is necessary to reduce or eliminate the chronic teacher shortage issue within agricultural education.

Purpose and Objectives

The purpose of the study was to describe the supply of school-based agricultural educators prepared by agricultural teacher education programs across the United States. The following objectives provided guidance for data collected annually from 2014-2016:

5. Describe historical trends of agricultural teacher education program completers.
6. Describe the production of agricultural teacher education program completers by institution and state.
7. Describe intended employment plans of agricultural teacher education program completers.
8. Describe the demographic profile of agricultural teacher education program completers.

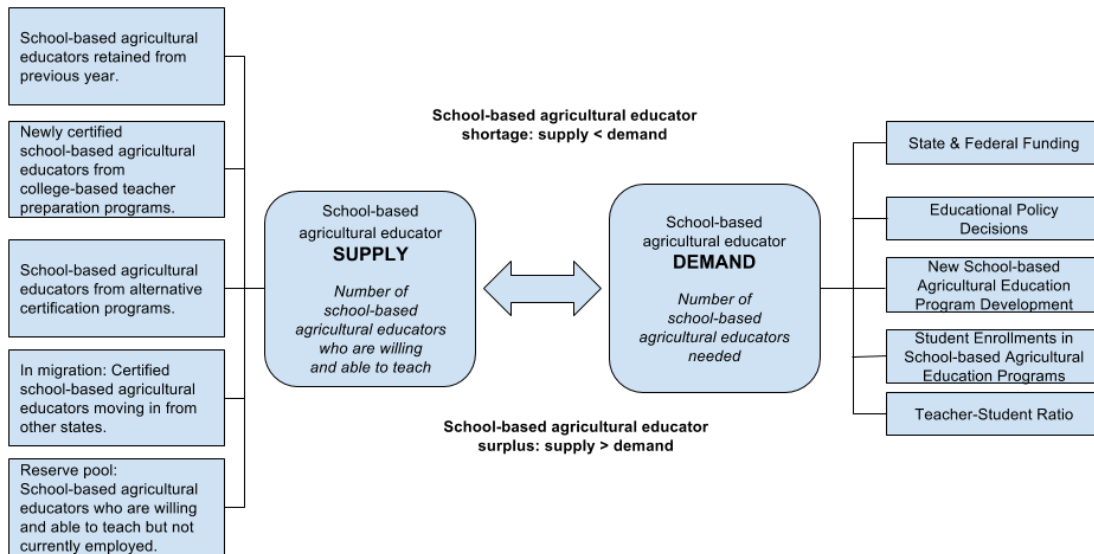


Figure 1. Conceptual framework of School-based Agricultural Education National Supply and Demand Study. Adapted from Lindsay et al. (2009).

Methods

This study built upon existing processes and protocols in place for the National Agricultural Education Supply and Demand research. The project team worked to strengthen and streamline data collection methods for both supply and demand aspects of the study. The parameters for the study (#4564) were approved by the Institutional Review Board for Human Subjects Research at the Pennsylvania State University. Specifically, this segment of the research highlights data collected related to supply. The population included agricultural teacher educators from each institution that offers a school-based agricultural education program leading to teacher licensure. The original frame was developed from membership in AAAE, with additions being made as a result of key stakeholder input. Each year, prior to the start of data collection, the frame of institutions and institutional contacts was scrutinized to ensure accurate and up-to-date information. To stay informed of changes to institutional contacts, the last question of the supply survey requested the name and contact information for individual who should be asked to provide the following year's data; this allowed for anticipated changes to be noted within the frame. To assist with trustworthiness of data collection, an informational email was sent prior to the start of data collection to each institutional contact. This email provided a state snapshot of data reported the previous year and indicated who would be contacted in the coming weeks.

Data Collection and Instrumentation

As this is a legacy study, the starting point for the supply instrument was the list of items asked in previous iterations of the National Agricultural Education Supply and Demand study. Items were added and revised based on literature and feedback from a panel of expert agricultural teacher educators who reviewed the instrument for face, content, and construct validity. Reliability was checked annually and found to be appropriate for a descriptive study.

Data was collected using Qualtrics, in accordance with Dillman's (2014) guiding principles for Internet and mixed-methods data collection. Following dissemination of individual survey links and

reminders by email, researchers followed up with individual phone calls to non-respondents. Individual links were resent or data was collected by phone.

Initial data collection occurred in 2014. This study reflects three years of data collection (2014, 2015, 2016). In 2014, initial contact was made in May, with data collection closing in August. In subsequent years, the timeline for data collection was altered so that initial contact occurred in August, with data collection closing in December. This adjustment was made in response to concerns expressed by teacher educators who were unable to provide accurate and complete data regarding program completers in the spring. All data were treated with confidentiality.

Handling potential survey error

There are four general sources of survey error: Sampling Error, Measurement Error, Coverage Error and Non-Response Error (Dillman et al, 2014). Below are the methods utilized to control for error. As a census of possible respondents was desired, sampling error was not applicable to this study. Measurement error was mitigated through the use of panel of experts to review and evaluate validity of the instrument. This included review for face, content, and construct validity. Similar to sampling error, a census approach controlled for coverage error. Recognizing that 17 institutions failed to respond to Kantrovich (2010), additional efforts were made to reduce non-response. Institutions who failed to respond were contacted in person via telephone. Due to familiarity with the population as well as the manageable frame size, researchers were aggressive in reaching out via multiple communication modes to obtain representative data. Table 1 reports the number of respondents, response rate and identifies non-respondent institutions. It should be noted that as of 2016, the following five states and territories do not have an agricultural teacher preparation program: Hawaii, Maine, Rhode Island, Vermont and the Virgin Islands.

Table 1
Supply Non-Respondents 2014-2016

	2014	2015	2016
Responding Institutions	91	96	101
Response Rate	88 %	97 %	100 %

Note. Non-Respondents in 2014: Univ. of Arkansas – Pine Bluff, Fort Hays State Univ., Univ. of Maryland – College Park, Univ. of Massachusetts, College of the Ozarks, Missouri State Univ., Univ. of New, Hampshire Delaware Valley College, Middle Tennessee State Univ., Angelo State Univ., Prairie View A&M & Univ. of Wisconsin – Platteville. Non-Respondents in 2015: Delaware State Univ., Univ. of Arkansas – Pine Bluff & Univ. of Georgia – Tifton

Data Analysis

Once data were collected, efforts were made to ensure the accuracy of data; the researcher team reviewed data reported for inconsistencies and errors. When issues were found, personal phone calls to institutional contacts were made to verify or correct the data. Data were analyzed primarily using excel database features for simple descriptive statistics. A longitudinal analysis of historical data was also conducted. Frequencies and percentages were used to describe historical trends. This included data analysis and utilization of historical research methods. Historical data prior to 2014 was obtained from previous National Agricultural Education Supply & Demand reports. Descriptive statistics including frequencies and percentages were used to describe numbers of agriculture teacher education program completers by institution and state, and intended employment plans for and demographic profile of program completers. Decisions regarding presentation of data were

made with consideration of preserving the integrity for longitudinal analysis, building from previous reports.

Limitations

Data can only be taken at face value, as reported by each respective institutional contact. In some cases, terminology used needed to be clarified. For example, the term “program completer” was operationally defined to include any individual reported to have fulfilled teacher licensure requirements; in some cases, this may imply program graduate, yet in others licensure requirements may be completed prior to degree completion. Each individual academic institution has disparate and unique data collection systems and processes. Ideally, increased fiscal resources would allow for human resources to verify data with state/federal data warehouses.

Findings

Objective 1: Describe historical trends of agricultural teacher education program completers.

A total of 746 agricultural education program completers were reported by 87 institutions in 2014. In 2015, there were 96 institutions which reported a total of 742 completers; 101 institutions reported 772 completers in 2016. Figure 2 depicts the context of agricultural education program completer production from a historical perspective beginning in 1920. Figure 3 highlights production of agricultural education program completers throughout the 21st century, from 2000-2016.

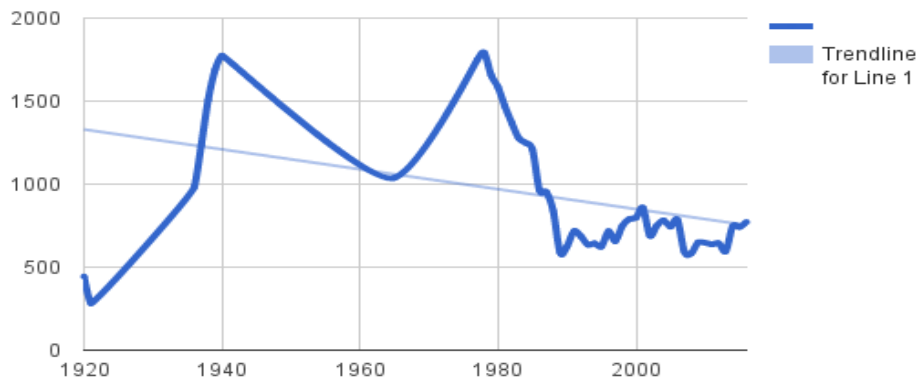


Figure 2. Historical perspectives of agricultural teacher education program completers, 1920-present. Note: No data found for 1922-1935; 1941-1965; 1966-1976; 2010.



Figure 3. Agricultural teacher education program completers, 2000-2016. Note: No data available for 2010.

Based on historical data available beginning in 1920, an overall average of 58.5% of program completers accept school-based agricultural education positions (data not available for 1941-1964; 1966-1976; 1996-1997, 1999-2000, 2002-2003, 2005, 2007-2008, 2010-2013). Table 2 presents both the total number of program completers and the number of program completers who accepted positions in school-based agricultural education (either in-state or out-of-state) as reported by teacher education institutions from 2014-2016.

Table 2

Yield of Program Completers Accepting Positions in School-Based Agricultural Education

Year	Total Program Completers	Program Completers Accepting SBAE Positions	Percentage Yield
2014	713	514.0	72.1 %
2015	724	512.5	70.2 %
2016	772	569.0	73.7 %
Total	2,209	1,595.5	72.2 %

Objective 2: Describe the production of agricultural teacher education program completers by institution and state.

Objective 2 allowed for deeper analysis of the 2,165 program completers reported as having successfully completed teacher licensure in agricultural education from 2014-2016. While Table 2 (above) reports the actual number of reported program completers from 2014-2016, Figure 4, reports the number of graduates each year from 2014-2016 by undergraduate bachelor's degree, post-baccalaureate degree, graduate degree, and licensure only program. Note, the total program completers by degree/licensure in 2013-2014 differs from the previously reported total number of program completers. This discrepancy led to the development of a system of checks and balances within Qualtrics to eliminate this during the 2014-2015 and 2015-2016 data collection.

Undergraduate teacher preparation is the most common form of agriculture teacher preparation (see Figure 4), and includes 80.9% (n=1,731) of all license eligible program completers from 2014-2016; 19% (n=408) are prepared post baccalaureate (n=159), graduate (n=185) and in licensure only (n=90) programs for a total of 2165 graduates.

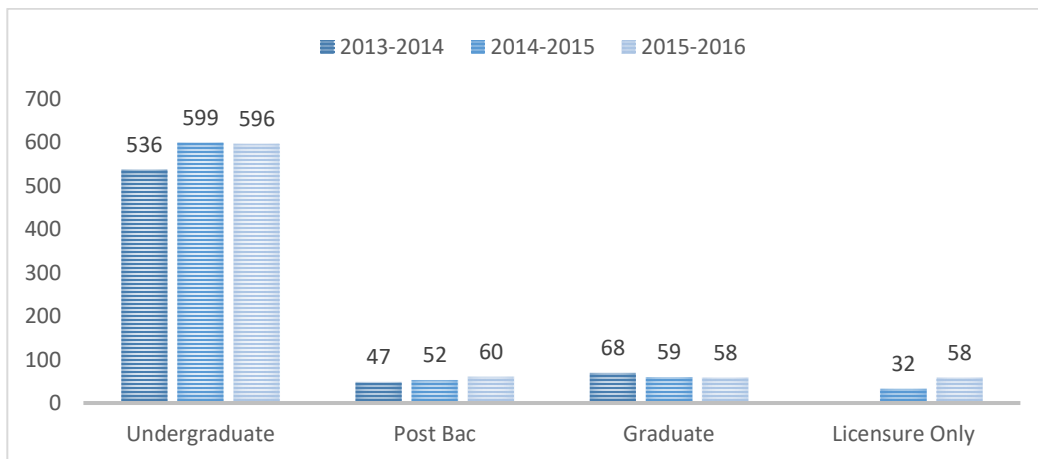


Figure 4. Licensed program completers by degree/license earned.

From 2014-2016, 101 institutions were contacted for supply data. A total of 92 institutions reported at least one program completer in the three-year period with a total of 2,209 from all institutions combined. The program completers certified by institutions from 2014-2016 ranged from 0 to 128. The average three-year total of program completers certified per institution was approximately 22, with an approximate annual average of 8 program completers per institution.

Table 3 presents agricultural education teacher preparation institutions categorized by the number of program completers reported from 2014-2016. Institutions are grouped into thirds, with institutions listed alphabetically in each category. Table 4 presents metrics related to the supply of school-based agricultural education program completers by state. For each of the top 25 producers of program completers from 2014-2016, the table highlights the number of program completers reported, the number of institutions represented, and the full-time teaching equivalent (FTE) devoted to teacher education. Additionally, the table provides ratios of program completers reported over the three-year period of time to FTE, to current agriculture teachers, and to school-based agricultural education programs in each state.

Table 3

Total Production of Program Completers (2014-2016) by Institution, Presented Alphabetically

Lower 33% producing institutions (0-9 completers in 3 years)	Middle 33% producing institutions (10-28 completers in 3 years)	Top 33% producing institutions (29-128 completers in 3 years)
1. Alcorn State Univ.	1. Angelo State Univ.	1. Auburn Univ.
2. Arkansas State Univ.	2. Arkansas Tech Univ.	2. California State Polytechnic Univ.-San Luis Obispo
3. California State Polytechnic Univ.-Pomona	3. Eastern Kentucky Univ.	3. California State Univ.-Chico
4. College of Ozarks	4. Louisiana State Univ.	4. California State Univ.-Fresno
5. Cornell Univ.	5. McNeese State Univ.	5. Clemson Univ.
6. Delaware State	6. Mississippi State Univ.	6. Colorado State Univ.
7. Delaware Valley	7. Missouri State Univ.	7. Iowa State Univ.
8. Dordt College	8. Montana State Univ.	8. Kansas State Univ.
9. Eastern New Mexico Univ.	9. Morehead State Univ.	9. New Mexico State Univ.
10. Ferrum College	10. Murray State Univ.	10. North Carolina A&T Univ.
11. Fitchburg State	11. North Dakota State Univ.	11. North Carolina State Univ.
12. Fort Hayes State Univ.	12. Northwest Missouri State Univ.	12. Oklahoma State Univ.
13. Fort Valley State Univ.	13. Northwestern Oklahoma State Univ.	13. Pennsylvania State Univ.
14. Illinois State Univ.	14. Oregon State Univ.	14. Purdue
15. Louisiana Tech Univ.	15. South Dakota State Univ.	15. Sam Houston State Univ.
16. Michigan State Univ.	16. Southern Arkansas Univ.	16. Tarleton State Univ.
17. Middle Tennessee State	17. Stephen F. Austin State Univ.	17. Texas A&M Univ.
18. Panhandle State Univ.	18. Texas A&M-Kingsville	18. Texas A&M Univ.-Commerce
19. Rutgers Univ.	19. Texas State Univ.	19. Texas Tech Univ.
20. Southeastern Missouri State Univ.	20. Univ. of Arizona	20. The Ohio State Univ.
21. Southern Illinois Univ.-Carbondale	21. Univ. of California-Davis	21. Univ. of Arkansas
22. Southwest Minnesota State Univ.	22. Univ. of Connecticut	22. Univ. of Florida
23. State Univ. of New York, Oswego	23. Univ. of Idaho	23. Univ. of Georgia-Athens & Tifton Campus
24. Sul Ross State Univ.	24. Univ. of Illinois-Urbana-Champaign	24. Univ. of Kentucky
25. Tennessee State Univ.	25. Univ. of Mount Olive	25. Univ. of Minnesota-Twin Cities
26. Tennessee Technological Univ.	26. Univ. of Nebraska Lincoln	26. Univ. of Missouri
27. Univ. of Alaska-Fairbanks	27. Univ. of Tennessee	27. Univ. of Puerto Rico
28. Univ. of Arkansas-Pine Bluff	28. Univ. of Wisconsin-Platteville	28. Univ. of Wisconsin-River Falls
29. Univ. of Maryland-College Park	29. Univ. of Wyoming	29. West Texas A&M Univ.
30. Univ. of Maryland-Eastern Shore	30. Univ. of Delaware	30. West Virginia Univ.
31. Univ. of Minnesota-Crookston	31. Utah State Univ.	
32. Univ. of Nevada-Reno	32. Virginia Tech	
33. Univ. of New Hampshire	33. Washington State Univ.	
34. Univ. of Tennessee-Martin	34. Western Illinois Univ.	
35. Virginia State Univ.		
36. Western Kentucky Univ.		
37. Wilmington College		

Table 4

Top 25 States Ranked by Total Production of Licensed Program Completers in Agricultural Education from 2014-2016

State	Number of Program Completers	Number of Institutions	FTEs in Ag Ed Teacher Education 2014	Program Completer to FTE Ratio	Program Completer to Agriculture Teachers Ratio	Program Completer to Agriculture Programs Ratio
1. Texas	485	11	26.5	18.3	0.22	0.5
2. Oklahoma	112	3	13	8.6	0.26	0.3
3. Missouri	107	5	4	26.8	0.21	0.3
4. North Carolina	107	3	13.75	7.8	0.22	0.3
5. California	105	5	15.5	6.8	0.12	0.3
6. Kentucky	79	5	4.5	17.6	0.30	0.5
7. Georgia	71	2	6.75	10.5	0.16	0.2
8. Arkansas	70	5	6.5	10.8	0.25	0.3
9. Iowa	58	2	4	14.5	0.23	0.3
10. Wisconsin	58	2	2	29.0	0.19	0.2
11. Illinois	50	4	10.95	4.6	0.13	0.2
12. Indiana	49	1	3.25	15.1	0.18	0.2
13. Pennsylvania	49	2	2.5	19.6	0.21	0.3
14. Tennessee	45	5	3.5	12.9	0.13	0.2
15. Kansas	43	2	3	14.3	0.19	0.2
16. Minnesota	42	3	1.75	24.0	0.17	0.2
17. Alabama	41	1	2	20.5	0.13	0.2
18. New Mexico	40	2	12	3.3	0.38	0.5
19. Florida	37	1	2.35	15.7	0.08	0.1
20. Ohio	37	2	5	7.4	0.08	0.1
21. Puerto Rico	37	1	2	18.5	-	-
22. West Virginia	33	1	4	8.3	0.31	0.4
23. South Carolina	32	1	6	5.3	0.25	0.3
24. Colorado	29	1	1.8	16.1	0.21	0.2
25. Louisiana	29	3	7	4.1	0.12	0.2
National ¹	101	2151	203.7	10.6	0.17	0.26

¹Note: National numbers are representative of all reported data (50 states, Puerto Rico & Virgin Islands).

Objective 3: Describe intended employment plans of agricultural teacher education program completers.

Table 5 highlights the intended employment plans for licensed program completers as reported within the 2014 - 2016 data collection period. While a total of 2209 program completers were reported in Table 2, employment plans were only provided for 2204. While the majority (72.4%; n=1595.5) of graduates choose a career in school-based agricultural education, 15.6% (n=344.5)

pursued career opportunities outside of school-based agricultural education. Agricultural education graduates who do not choose the formal classroom are still drawn to education as substitute teachers, community college instructors, university staff employees, trainers in industry, or other areas of education (not graduate school). Other career opportunities sought by agricultural education graduates included an assortment of domestic and international service such as student ministry, Habitat for Humanity, mission work, and the Peace Corp. Of graduates (n=1717) who chose careers in education, the majority (92.9%; n=1595.5) chose school-based agricultural education, 4.5% (n=76.5) pursued teaching another subject, or 2.6% (n=45) chose to enter extension. Further, a few choose careers not related to agriculture or education, including internships, speaking, technology, insurance, U.S. Congress, auto mechanic, and are self-employed or in other careers in industry. Finally, a small number of graduates reported wanting to stay-at-home with family.

Table 5
Employment Plans of Program Completers

	2013-2014	2014-2015	2015-2016	Total
SBAE in-state	469	446	508	1423
SBAE out-of-state	45	66.5	61	172.5
Graduate school	52	64	56	172
Agribusiness	58	64	47	169
Teaching another subject	16	31.5	29	76.5
Other	-	-	20	20
Unknown	41	12	16	69
Unemployed	-	12	11	23
Production agriculture	8	9	11	28
Extension	22	13	10	45
Military	2	1	3	6

Objective 4: Describe the demographic profile of agricultural teacher education program completers in the United States.

The study explored demographics of those completing licensure programs from 2014-2016. The typical program completer was a white female. In fact, 65.2% (n=1454) of the program completers were female, with 33.7% (n=751) male, and 1.1% (n=26) unknown. The majority of female license eligible program completers from 2014-2016 was 91.5% (n=1320) white. Of other ethnicities reported (n=123), most female program completers were Hispanic (57%; n=70), American Indian/Alaskan Native (15%; n=17), or African American (7%; n=9). Ethnicity of male program completers from 2014-2016 was 88.8% (n=677) white. Of non-white male program completers (n=85), the majority was Hispanic (55%; n=47) or African American (15%; n=13). A total of 14% (n=12) of all males reported unknown ethnicities.

The researchers were curious how ethnicity and gender of agricultural education program completers compared to other populations within school-based agricultural education. Table 6 highlights the 2015-2016 program completers' ethnicity as compared to total FFA membership. Table 7 compares the gender of program completers from 2014-2016 to gender of FFA members, as reported in 2016. While FFA membership numbers may not accurately represent the ethnicity and

gender of all students enrolled in school-based agricultural education, it does provide a snapshot of current membership in comparison to those preparing to teach.

Table 6

Comparison of Agricultural Education Program Completers and FFA Members by Ethnicity

	Program Completers 2015-2016	%	FFA Membership 2016*	%
African American	6	0.8	18663	0.05
American Indian/ Alaskan Native	5	0.7	30136	3.6
Asian	4	0.5	5183	0.62
Bi-Racial/Multi-Racial	0	0	42291	5.05
Hispanic	41	5.3	77369	9.24
Hawaiian/Pacific Islander	1	0	2277	0.27
White	691	90	390570	46.7
Other	3	0.4	7826	0.93
Unknown	16	2	262436	31.3
Total	767	100	836751	100

**Note: FFA membership is reported for school-based agricultural education programs and may include duplicated students (students are reported in grades 7-12 and/or 9-12).*

Table 7

Comparison of Agricultural Education Program Completers and FFA Membership by Gender

Gender	Program Completers 2014-2016	%	FFA Membership 2016*	%
Female	1,454	65.2	357,901	40.8
Male	751	33.7	472,697	53.9
Unknown	26	1.2	46,587	5.3
Total	2,231	100	877,185	100

**Note: FFA membership is reported for school-based agricultural education programs and may include duplicated students (students are reported in grades 7-12 and/or 9-12).*

Conclusions/Recommendations/Implications

The supply of license-eligible program completers in agricultural teacher education has increased throughout the three-year segment of time (2014-2016) reflected by this study. Not surprisingly, the vast majority of said program completers completed an undergraduate teacher licensure program. Interestingly, a relatively small number of agricultural teacher education programs produced the vast majority of all program completers from 2014-2016. In fact, only one-third of agricultural teacher education programs produced two-thirds (n-1452) of all program completers. Not only does this potentially create programmatic challenges with regard to institutional capacity, it also may contribute to uneven availability of program completers across the nation. A majority of agricultural

teacher education program completers who chose to teach accept a teaching position in their home state, or that of their degree-granting institution. Given that, what could be done to increase the overall number of program completers at all institutions, more evenly distribute program completers, or encourage greater geographic mobility of program completers?

For 30 years, there has been a consistent increase in the total number of agricultural education teacher licensure program completers acquiring school-based agricultural education positions. This is certainly a positive sign, suggesting that program completers are highly likely to accept a position in school-based agricultural education. Perhaps this is an indication that post-secondary agricultural education teacher preparation programs are appropriately preparing program completers for the realities and rigors of the profession and that program completers feel capable of successfully entering the profession upon completion of student teaching. Additionally, this increase could be a reflection of the positive perception program completers have of the teaching profession, in response to heightened promotional efforts through NAAE and the National Teach Ag Campaign.

Agricultural teacher education program completers, as reported from 2014-2016, are disproportionately white, non-Hispanic, females. Approximately 90% of program completers during this time frame were White, 1% African American, 5% Hispanic, and 3% other. From related research, we know that current school-based agricultural educators reflect little racial diversity as well, with 69% of all agricultural education teachers identify as white. Almost 47% of current school-based agricultural educators are white males and about 21% white females. These numbers may in fact be much higher as race/ethnicity was reported as unknown for 28% of school-based agricultural education teachers. Kantrovich (2010) also reported that Caucasian was most commonly reported among newly qualified school-based agriculture teachers, with only 4% of newly qualified teachers being non-Caucasian.

Current school-based agricultural education teachers are disproportionately white, non-Hispanic males, although both racial and gender percentages vary by state and region. Some progress has been made in this area, particularly with regard to gender. Even in 2010, Kantrovich stated that the tide seemed to be slowly turning with regard gender equity. At that time, approximately 53% of newly qualified teachers from 2006-2009 were female. Presently, the tides have turned within teacher preparation, with 65.2% of program completers reported as female and 33.7% male (1.1% unknown). This continued trend may in fact lead to gender inequality with males the minority within the profession. Consideration should be given to why this shift has occurred and what may be done to more consistently attract both males and females to the profession of school-based agricultural education. Perhaps focused recruitment efforts are necessary to depict agricultural education as a viable, rewarding career for young men.

Beyond the issue of gender, significant efforts are needed to recruit and retain a more diverse workforce within school-based agricultural education. Ethnic minorities are badly under-represented within school-based agricultural education; major, strategic, intentional efforts should be made to recruit, prepare, and retain minority teachers within the profession. Not only would these efforts help ensure demographics of school-based agricultural education teachers more closely reflect demographics of students served by school-based agricultural education, it may also encourage other under-represented minorities to consider the profession. To make changes in this area, it would be beneficial to collaborate with other educational and agricultural organizations and businesses to learn more about best practices for meeting the needs of a more diverse workforce.

Students in the school-based agricultural education classes deserve to be taught by variety of teachers, as school is meant to be a reflection of the world in general. All professions need a gender-balanced workforce and this includes teaching. As the face of the American population continues to change, post-secondary agricultural education teacher preparation programs should also work diligently to attract qualified minority faculty; this may prove invaluable in the recruitment and retention of under-represented students in school-based agricultural education.

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