Relationship between Enrollments in Land-Grant Agricultural Education Majors by Year and State Participation in the Teach Ag STAR Program

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Introduction/Need for Research

Agricultural education has suffered a shortage of teachers for decades (Eck & Edwards, 2019). In 1967, Woodlin stated, "The continuing shortage of vocational agriculture teachers may develop into a major crisis in the United States unless prompt, concentrated action is taken in each state" (p. 10). Nevertheless, the gap between supply and demand of agricultural educators continues to grow (Smith, Lawver, & Foster, 2019). In 2010, Kantrovich reported 7,775 school-based agricultural education programs employing 11,558 agricultural educators. In 2019, 8,504 programs employed 13,190 teachers (Foster, Lawver, & Smith, 2020). In less than a decade, 729 new programs emerged, requiring 1,632 new teachers. To recruit agriculture teachers, the National Council for Agricultural Education initiated the *Teach Ag* program in 2009. In 2014, with funding from the National FFA Foundation, the *State Teacher Ag Results (STAR)* program was started and provided states with funds for recruitment and retention of agriculture teachers. Which aligns directly with the national research agenda priority 3, Sufficient Scientific and Professional Workforce That Addresses the Challenges of the 21st Century.

Conceptual / Theoretical Framework

The Ag Ed FIT-Choice® model (Lawver, 2009; Richardson & Watt, 2006) explains the perspective and intent to pursue a career. It posits four constructs: task return, self-perception, intrinsic career value, and fallback career (Lawver, 2009). *Task return* includes extrinsic factors such as social status, perception of career demands on a person's time and effort, being in an expert career, and salary stability. *Self-perception* is perceived as ability and confidence in the career. *Intrinsic career value* includes personal utility value and social utility value. *Personal utility value* includes job security, transferability, time for family, and making a difference on future generations. *Social utility value* is based on the idea of least effort for maximum social gain. *Fallback career* is the idea that the person initially selected another career before pursuing agricultural education. Teach Ag STAR attempts to influence task return and intrinsic career value, focusing on personal utility value. The research purpose was to determine the Teach Ag STAR effectiveness on enrollments in agricultural education in colleges of agriculture (CoA).

Methodology

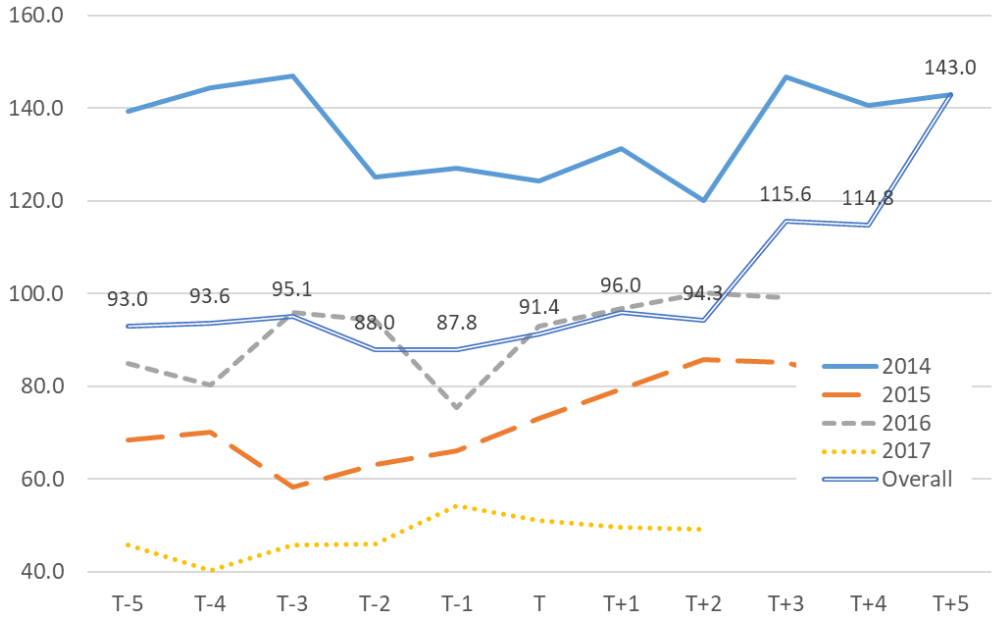
This census relational study was based on Teach Ag STAR state participation data and land-grant agricultural education enrollment data collected from the Food and Agricultural Education Information System (FAEIS) at Virginia Polytechnic State University (2021). Enrollment data were collected from CoA from 2002 through 2019 and from STAR states between 2014 and 2019. Enrollment and STAR data from four states were omitted from analyses because of FAEIS reporting irregularities; states included FL, IL, ND, and TX. Complete data were provided for 22 states. Data were based on enrollments from five years prior to participation in STAR compared with five years after the state began STAR or until 2019. Because of the census nature of the analysis, direct data are reported. Because of the nature of census data, no inferential statistics were calculated. Data are reported as average enrollments of the cohort of STAR states.

Results/Findings

Enrollments were evaluated for five years before STAR and five years after STAR or until 2019 if five years had not elapsed. Of the 22 states, 12 experienced their highest enrollment since 2002 *after* STAR. Seventeen states have increased enrollment since STAR began in their state. Analysis of the 2014 cohort of eight states, which had the full range of longitudinal data, showed a loss of 97 students (x = -14.9 students, -10.7%) in the five years prior to STAR and an increase of 149 students (x = 18.6 students, 15.0%) in the 5 years after STAR (see Figure 1).

Figure 1

Average Enrollment in Ag Ed, Standardized to 5 Years Prior to and 5 Years after STAR (N = 23)



Conclusions

In conclusion, there was an overall increase in enrollment of agricultural education students at land-grant universities following the implementation of STAR. Of the 22 programs analyzed in this research, 17 experienced growth following implementation of STAR. Based on these census data, there is a positive relationship between STAR student enrollments in agricultural education at land-grant universities. However, other factors may have also influenced enrollment increases. These conclusions do not take into account agricultural education enrollments at non-land-grant institutions who prepare and license agriculture teachers. Conclusions do not take into account numbers of lateral-entry teachers from industry, which may have been impacted by STAR.

Implications/Recommendations/Impact

Researchers should analyze STAR's plan of action of the states that have larger leaps in enrollment to determine what factors elicited positive enrollment increases. This can help to further the development of STAR and potentially encourage more states to push to become STAR states and therefore increase enrollment and help close the gap of agricultural educators needed nationwide. Research should be conducted about the impact of STAR on lateral-entry agriculture teachers.

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