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Consideration of Agricultural Education as a Career: A Statewide Examination by High School Class Year of Predicting Factors

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Abstract

The shortage of teachers in Illinois is reflective of a recent trend where agricultural education graduates of in-state post-secondary institutions have not met the need for the number of available teaching positions. The retirement of the many teachers from the Baby Boomer generation is looming over the profession, making recruitment efforts essential (Illinois Board of Education Report, 2014). With secure funding sources of higher education dwindling, efficiency and effectiveness of recruitment efforts are critical if agricultural education is to continue to survive and thrive by facilitating a steady stream of highly qualified teacher candidates into the field. The purpose of this study was to examine factors influencing high school student consideration of agricultural education as a future career. We included students in grades 9 through 12 (n = 817) from 56 different agricultural education programs. Within the overall sample, parental support and a student's report of their agriculture teacher emerged as the most powerful predictors, while noteworthy differences arose across class years. These findings possess significant implications for the timing and focus of recruitment efforts.

Keywords: secondary agricultural education, career choice, college recruitment, teacher recruitment, FFA, youth development

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Introduction

The shortage of teachers in Illinois is reflective of a recent national trend where agricultural education graduates of in-state post-secondary institutions have not met the need for the number of available teaching positions. This shortage has resulted in multiple program closures when boards of education could not find suitable candidates to fill open positions. The number of annual retirees is forecast to increase as more baby boomers have indicated they plan to retire soon, with nearly one-fourth of all teachers in the state being over the age of 50 (Illinois Board of Education Report, 2015). A group gathered to address this problem, by discussing the implications and proposing possible solutions in 2014. This group included researchers in the current study, post-secondary institutions offering agriculture or agricultural education, secondary teachers, state agricultural education staff, state FFA staff, and agricultural industry professionals.

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This group determined the development of a robust pipeline for the profession to assure an adequate supply of agricultural educators was to be their primary effort; this decision was in response to the closure of two long-standing secondary programs in the state when no suitable candidates were found to fill the positions. The observation of pipeline, or supply, problems are found in the number individuals who do not have full licensure obtained through an accredited teacher certification program occupying agriculture teacher positions. In 2015, approximately one-fourth of the Illinois agricultural educators was provisionally certified (Illinois Board of Education Report, 2015). Industry professionals participating in the discussion indicated the problem in Illinois is larger than just agricultural education, through describing the difficulty in filling open positions due to a shortage of agriculture graduates from post-secondary institutions. Similarly, the USDA indicated that in 2013, graduates with degrees in the agricultural and natural resources sector number approximately half (53%) of those needed to fill the positions available in the industry (Goecker, Smith, Smith, & Goetz, 2010). Secondary agricultural education programs are essential to provide exposure to the broad array of career paths available in agriculture.

The group began to direct special effort to recruit agricultural educators at both the secondary level and from within the agricultural industry, an endeavor supported by recent agricultural education research (Dyer & Breja, 2003; Lawver & Torres, 2012). When the group initiated this effort, they determined it was essential to gather data that would help decide where efforts specifically should be directed to make the most efficient use of limited time and financial resources. To determine where funds could be allocated or reallocated best within the next academic year, it was necessary to identify the specific factors within the agricultural education system strongly associated with a student's consideration of agricultural education as a career (Lawver & Torres, 2012). A focus on current high school students who are in the midst of making decisions about their higher education to yield more accurate information when compared to interviews of current college students reflecting on their high school experiences.

Agricultural educator recruitment efforts currently exist and have steadily increased given the current shortage of certified teachers on both a state and national level. The challenge of recruitment for future agricultural educators is well-documented and longstanding (Kantrovich, 2007). The retirement of the many teachers from the Baby Boomer generation looms over the profession, making recruitment efforts essential (Illinois Board of Education Report, 2015). With secure funding sources of higher education dwindling, a critical need exists to increase the efficiency and effectiveness of recruitment efforts. Therefore, this study focuses on the factors that are associated most closely with a high school student's decision to consider agricultural teaching as a profession.

Review of Literature

Several factors contribute to individuals making a decision as significant as their career choice. Post-secondary education students who have been asked to identify their motivating factors to pursue a career in education and/or agricultural education primarily have considered: perception of the education field as an enjoyable career; the opportunity to help in youth development and work with youth; impact on and service to others; advancement opportunities; and a calling to teach (Elfers, Plecki, St. John, & Wedel, 2008; Harms & Knobloch, 2005; Kyriacou & Coulthard, 2000; Lawver & Torres, 2012; Thieman, Marx, & Kitchel, 2014). High rates of placement for graduates following completion of a degree program heavily depends on the student's right match with a degree program that will provide them the opportunity for academic success and an avenue to accomplish their professional career goals. High levels of career decision self-efficacy correlate with students' persistence in their chosen major (Nauta, 2007).

When college students at large were asked to identify important factors in their consideration of career options, job stability ranked first, listed as "Very Important" by 77% of the

610 respondents (Elfers et al., 2008). Interestingly, only 43% of these students described teaching as a career that "definitely offers job security." Historically, teaching has been considered a career option with high stability and job security, similar to other necessary public service fields such as nursing (Elfers et al., 2008). The second most important factor identified was the opportunity for intellectual challenge, listed as "Very Important" by 67% of the respondents. The perception of teaching as a career that "definitely offers intellectual challenge" dropped to 32%. Starting salary and earnings also were considered: over one-half of the participants indicated these factors as "Very Important," while less than 10% mentioned teaching as "definitely" offering these things (Elfers et al., 2008). These findings suggest that a majority of university students may already have negative attitudes about an education-related career, and implies a need to study student decision-making related to occupations before enrollment at a post-secondary institution.

High school students overwhelmingly indicate their parents, and specifically their mother, as among the most influential individuals as they make career decisions (Faulkner, Baggett, Bowen, & Bowen, 2009; Marx, Simonsen, & Kitchel, 2014; Rocca & Washburn, 2005; Wahl & Blackhurst, 2000). They additionally identify other family members and professionals in consideration of career paths. Gender and gender role expectations also have been found to play a role in career aspirations as early as the second grade, where evidence suggests girls identify a decreased range of occupational aspirations and lower goals for occupational attainment than boys (Wahl & Blackhurst, 2000). On the other hand, socioeconomic status may mediate the role of race and gender in the restriction of career aspirations (Valadez, 1998). Students of color identified knowledge of opportunities in agricultural education; financial stability; and support from family, community, and in professional domains as key components for the selection of a career in agricultural education (Vincent, Henry, & Anderson II, 2012). A recent study of 114 high school juniors and seniors in agricultural education found various components and activities within the agricultural education program possess a moderate influence on career decisions. These included: participation in career development events and leadership contests; state and National FFA Conventions and conferences; leadership workshops; and serving as an FFA officer (Marx et al., 2014).

When considering how individuals make decisions, the factors relevant to their decision-making are important to consider. This study focused on high school students enrolled in agriculture courses and the factors most strongly predictive of their openness to agricultural education as a career. The factors associated with their decision are critical to the agricultural teaching profession; increasing the number of students who consider agricultural education represents an initial step in resolving the national shortage of teachers. Identifying the individuals, events, and activities most predictive of students' active consideration of agricultural education as a career can lead to more informed decisions regarding where to invest recruitment resources.

Theoretical Framework

The theoretical framework applied to this study is the Eccles, Wigfield and colleagues expectancy-value model of achievement (Eccles, 1984; Eccles et al., 1983; Wigfield, 1994; Wigfield & Eccles, 1992, 2000). The model presents a comprehensive, context-based application to explain achievement-related choices, such as of a high school student selecting a future career. Consistent with how Kitchel and Ball (2014) describe the appropriate use of theoretical models for non-experimental designs, the Expectancy-Value Model of Achievement provides the rationale for the relationship between students' stated career decisions and the factors that support or detract from their choice. Expectancy-value theory models the consideration of individuals, events, and experiences that lead to increased consideration of agricultural education as a career.

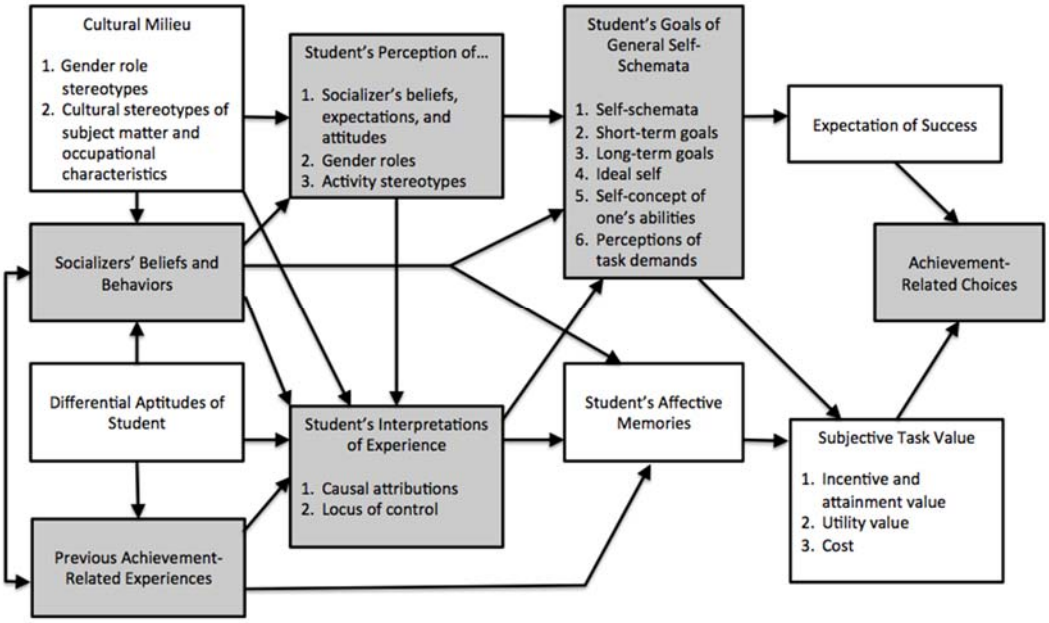

Figure 1. Eccles, Wigfield, and colleagues' expectancy-value model of achievement motivation (Wigfield & Eccles, 2000).

Figure 1 shows the Expectancy-value theory of achievement characterized by the influence of personal beliefs regarding expected success and value of activities and one's context on an individual's choice, persistence, and performance related to a particular decision (Eccles et al., 1983; Wigfield & Eccles, 2000). The current version of the model displays the direct impact that expectations and values have on an individual's achievement-related choices. The individual's perceptions of cultural influences and interpretations of previous experiences influence expectations of success and task value.

Factors studied in consideration of agricultural education as a career for the current study are highlighted in gray on the model in Figure 1. These included specific FFA activities, gender, a perception of the parental opinion of agricultural education as a career, and favorable perception of the agriculture teacher as a role model. The decision to consider agricultural education as a career option represents the achievement-related choice for this study. FFA activities in which the student participated corresponds to "Previous Achievement-Related Experiences" and served as precursors to "Student's Interpretations of Experience."

Parents and agricultural educators represent "Socializers" within the model for the current study. The actions and beliefs of these socializers affect a student's perception of their beliefs, expectations, and attitudes related to the career of agricultural education in addition to gender roles and activity stereotypes. These beliefs also influence the degree to which students begin to develop their schemata of an ideal self, possibly in the image of an agriculture teacher, and construct their self-concept of abilities unique to the role of agriculture teacher while setting short- and long-term goals consistent with this identity. Through an application of the expectancy-value model of achievement motivation (Wigfield & Eccles, 2000) in addressing the current shortage of qualified candidates for secondary agricultural educator positions, we define particular areas of study to examine the motivations of students in considering agricultural education as a career.

Purpose and Research Questions

Knowing exactly when, how, and where to invest recruitment dollars and efforts for agricultural educators is critical to the future of agricultural education and the broader field of

agriculture. As a first step to provide data to help Illinois determine where state-level investment in recruitment resources should occur, the purpose of this study was to examine the factors influencing high school student consideration of agricultural education as a future career. We developed two research questions for the current study to address this purpose:

1. What are the factors that significantly predict high school students' consideration of agricultural education as a potential career option?
2. How do factors which significantly predict consideration of agricultural education as a potential career option vary by high school grade level?

Methods

Instrumentation

The Illinois Agricultural Education administrating body commissioned the current study as part of a larger inquiry to address the current critical shortage of agricultural educators. This portion of the study sought to inform recruitment and retention practices and to establish and maintain a pipeline to develop agricultural educators. The primary goal of the study survey was to obtain data from high school students who could provide a framework and recommendations for future recruitment efforts and funding. A panel of experts (N = 8) comprised of university faculty and graduate students, high school agriculture teachers, and first-year agricultural education students who were FFA members examined the questionnaire for face and content validity. The instrument, administered electronically through Qualtrics, was developed specifically to identify both current and prospective events and structures within the state as avenues for recruitment. The anonymously completed instrument included demographic questions to establish gender, ethnicity, grade level, and high school. The questionnaire asked students if they ever had considered agricultural education as a career and provided a text box to add comments. They also were asked to document their specific career goals. Participants were asked to identify items related to how likely their parents were to support agricultural education as a career choice, using a Likert scale ranging from "highly likely" to "highly unlikely." Students were asked to complete a checklist of FFA Activities in which they had participated from a selected list. Data collected, but not included in the current study, included parental demographics on career and education level and Supervised Agricultural Experience project information.

The FFA activities listed in the analysis were selected purposively based on high frequencies of student attendance and were designated by the state agricultural education staff as ones who served to recruit future agricultural educators. Activities considered include Chapter FFA Officer, State FFA Convention, National FFA Convention, Career Development Events/FFA Contests, 212 Conference, FFA Leadership Camp, and the STAR Conference. The STAR Conference is a statewide conference designed for high school Juniors and Seniors who have expressed an interest in becoming agricultural educators.

Data Collection

All agriculture education programs in Illinois were invited to participate in this research - researchers sent both an initial informational email and parental information forms providing the opportunity for parents to deny a student participation in the study to all agricultural educators. This email, sent the first week of May in 2014, notified teachers of the aims and goals of the study to improve recruitment for agricultural educators in high school students. Incentives also were described: each school which had at least ten students complete the questionnaire received an entry into a random drawing for one of four $120 gift cards to MyCAERT. One week following the informational email, teachers were emailed the anonymous Qualtrics survey link via a shortened URL to distribute to students who did not have a parent/guardian disallowing participation. Within

the following two weeks, all teachers were sent one reminder email each week, with the survey link closing three weeks following the invitation email.

Participants and Sampling

This statewide study included a sample of students in grades 9 through 12 (n = 817) from 56 different agricultural education programs from all FFA-designated regions of the state. Overall, 18% of agricultural education programs in the state had students complete a questionnaire. Researchers examined the responding sample of students for a diversity of sample including factors such as the size of the program, geographical location, and setting of the school (rural, suburban, urban). The responding sample was found to be representative of the state based on the previously mentioned characteristics. The majority of the programs had between one and ten students completing questionnaires (n = 33, 59%), followed by a range of 11 to 20 completed responses (n = 9, 16%) and a range of 21 to 40 responses (n = 8, 16%), and 11% of the programs having between 41 and 81 completed questionnaires. Within this sample, 54% of students (n = 454) identified as male. Approximately 29% (n =246) identified as freshmen; 28% (n = 235) as sophomores; 24% (n = 206) as juniors; and 15% (n = 130) as seniors. An additional 4% (n =30) also identified as being in junior high school and were not included in this research study. Many students (48%, n = 403) indicated participation in at least one Career Development Event, 22% (n = 183) reported being a Chapter FFA Officer; 24% (n = 206) as having attended at least one national FFA convention; 19% (n = 157) as having attended at least one statewide FFA convention; 12% (n = 100) as having attended FFA Leadership Camp; and 18% (n = 154) as having attended a 212 Conference.

We were interested in understanding the degree of parental support as it contributes to high school student career decision-making. When asked if parents and family would be supportive if the student chose to become a teacher in the field of agriculture, 36% (n = 304) reported "definitely yes," 43% (n = 367) responded "probably yes," 11% (n = 89) said "probably not," while 6% (n = 50) responded "definitely not." Approximately 36% (n = 304) "strongly agreed" that their agriculture teacher served as a role model, while 31% (n = 260) reported "agree;" 17% (n = 145) reported "neither agree nor disagree;" 5% (n = 39) reported "disagree;" and another 5% (n = 46) reported "strongly disagree."

To measure our central variable of interest, we asked participants if they had ever considered becoming a high school agriculture teacher, resulting in 26% (n = 220) responding "yes" and 69.5% (n = 589) responding "no," with 4.5% (n = 38) not responding. Students had the opportunity to indicate by open-ended text entry the career they intended to pursue following high school; researchers coded these responses into three categories. The majority (46%, n = 386) indicated they were planning to pursue a career in either agriculture or education, 35% (n = 295) reported a career path not within agriculture or education, and 5% (n = 40) planned to pursue a career in agricultural education.

Data Analysis

The goal of this research study was to examine the factors that significantly predict high school students' consideration of agricultural education as a potential career option. Therefore, we conducted a series of hierarchical logistic regression analyses. Our dependent variable was a dichotomous nominal variable coded as "Teacher Consideration," where students responded to the survey item, "Have you considered becoming an agriculture teacher/FFA advisor?" For each analysis, we created a three-step regression. We included only gender as a predictive variable within the first block. Within the second block of variables, we included the degree of parental support and FFA involvement items to determine each item's unique contribution to students' consideration and to examine the overall contribution of FFA involvement. Eliminated items included those that did not apply to the particular grade level analyzed. Lastly, to examine the

contribution of students' relationship with their agriculture teachers, our third block included the degree to which students considered their agricultural teacher a role model for themselves.

To explore our first and overall research question, our initial analysis included the entire dataset. Our subsequent analyses included a hierarchical logistic regression that included the most relevant FFA-related involvement items using a class-year-specific sample for each grade level to examine the predictive variance across high school grade level.

Results

Factors That Significantly Predict High School Students' Consideration of Agricultural Education as A Potential Career Option

We conducted a hierarchical logistic regression to examine that extent to which gender, FFA involvement, and parent support predict students' consideration of agricultural education for a career. Overall results are displayed in Table 1. A student's gender, the only variable within the first block, predicted approximately 4% of the variance (Nagelkerke's R-square = .04) in students' consideration of being an agriculture teacher. Parent support for a student's decision to become an agriculture teacher and FFA involvement items entered within the second block of variables, independently predicted 24% of the variance in student choice, determined by subtracting the second block Nagelkerke statistic (.28) from the first block statistic. Within the third block, students' identification of their agriculture teacher as a role model to them independently predicted 4% of the variance in student choice. A Hosmer and Lemeshow Test resulted in a non-significant p-value (.92), indicating a good model fit for the analysis.

Within the model, perceived parental support to become an agriculture teacher, identification of one's agriculture teacher as a role model, participation in CDE activities, and a statewide Leadership Camp, or a 212 Conference all significantly predicted students' consideration to become an agriculture teacher themselves. Parent support and identification of one's teacher as a role model emerged as the most powerful predictors (i.e. largest Wald statistic) within the model that included all students regardless of grade level. For every single step increase in parental support (a 5-step range from strongly disagree to strongly agree), a student's odds they would consider a career in agricultural teaching increased 195%. For every step increase in identification of one's agriculture teacher as a role model (a five-step range from strongly disagree to strongly agree), a student's odds increased 154%. The most powerful FFA related predictor was participation in CDE activities. A student's report of such participation resulted in a 163% increase in their odds to consider teaching agriculture as a career. Participation in Leadership Camp resulted in a 189% increase; however, participation in such activities was not nearly as widespread within our sample, resulting in smaller Wald statistics.

Table 1

Hierarchical Logistic Regression for Overall Sample

	β	SE β	Wald's χ^2	df	p	e^{β}	Δ R^2
Block 1							.04
Gender	.32	.19	3.08	1	.08	1.39	
Block 2							.24
Parent Support	.67	.13	26.04	1	<.0001	1.95	
Chapter Officer	.24	.27	.79	1	.38	1.27	
State Convention	.41	.30	1.84	1	.17	1.50	
National Convention	.12	.28	.19	1	.66	1.13	
CDE Participation	.49	.21	5.65	1	.02	1.63	
212 Conference	.48	.24	3.73	1	.05	1.60	
Leadership Camp	.64	.30	4.70	1	.03	1.89	
[AGED] Conference	.19	.57	.11	1	.74	1.21	
Block 3							.04
Teacher Role Model	.43	.10	19.80	1	<.0001	1.54	

Variance of Predictive Factors by High School Grade Level

To examine the variance that occurs due to high school grade level, we conducted a series of hierarchical logistical regression analyses similar in structure to the overall analysis indicated above, one for each reported grade level. Each analysis resulted in non-significant Hosmer and Lemeshow tests (p values ranged from .46 to .90), which indicated a good model fit within each grade level.

Freshmen. The results from our freshmen analysis are found in Table 2. Our model was not as robust relative to the model for the collapsed sample; it predicted only 28% of the variance (Nagelkerke's R-squared) compared to 49%. The most significant variable within the model was the degree to which freshmen students identified their agriculture teacher as a role model, while the only other variables that emerged as significant within the model were participation in the 212 Conference and CDE activities. Participating in both activities increased the odds of the students' report of their consideration to become an agriculture teacher by 250% and 270%, respectively.

Table 2

Hierarchical Logistic Regression for Freshmen

	β	SE β	Wald's χ^2	df	p	e^{β}	Δ R^2
Block 1							.01
Gender	.07	.364	.04	1	.84	1.08	
Block 2							.22
Parent Support	.43	.24	3.26	1	.07	1.53	
Chapter Officer	-.57	.68	.69	1	.41	0.57	
State Convention	.08	.97	.01	1	.94	1.08	
National Convention	.74	.51	2.13	1	.14	2.10	
CDE Participation	.99	.35	7.86	1	.01	2.70	
212 Conference	.92	.45	4.13	1	.04	2.51	
Leadership Camp	1.12	.64	3.09	1	.08	3.05	
Block 3							.05
Teacher Role Model	.55	.19	8.05	1	<.0001	1.74	

Sophomores. The results from our sophomore analysis are in Table 3. The model predicted a student's decision to consider teaching agriculture slightly more powerfully, predicting 35% of the variance. Parental support was the most powerful predictor variable, closely followed by identification of a one's agriculture teacher as a role model, while service as a chapter officer was the only other significant variable within the model.

Table 3

Hierarchical Logistic Regression for Sophomores

	β	SE β	Wald's χ^2	df	p	e^{β}	Δ R^2
Block 1							.03
Gender	-.07	.37	.03	1	.85	.93	
Block 2							.26
Parent Support	.91	.270	11.23	1	.001	2.47	
Chapter Officer	.99	.507	3.79	1	.05	2.69	
State Convention	.44	.563	.61	1	.43	1.55	
National Convention	.37	.502	.55	1	.46	1.45	
CDE Participation	-.12	.422	.08	1	.78	0.89	
212 Conference	.06	.500	.01	1	.90	1.06	
Leadership Camp	.37	.633	.35	1	.56	1.45	
Block 3							.06
Teacher Role Model	.64	.22	8.51	1	.004	1.89	

Juniors. The results from our junior class analysis are in Table 4. The model predicted 33% of the variance in students' decision to consider a career in agricultural teaching. Parental support remained the most powerful predictor of decision-making, while identification of one's agriculture teacher as a role model no longer emerged as a significant predictor. Student gender served as the only other significant predictor. As juniors, the odds of women choosing to become an agriculture teacher was 235% higher than men, while student gender independently predicted 9% of the variance within the model.

Table 4

Hierarchical Logistical Regression for Juniors

	β	SE β	Wald's χ^2	df	p	e^{β}	Δ R^2
Block 1							.09
Gender	.85	.37	5.39	1	.02	2.35	
Block 2							.23
Parent Support	.81	.25	10.08	1	.001	2.25	
Chapter Officer	.52	.46	1.29	1	.26	1.68	
State Convention	.73	.54	1.80	1	.18	2.07	
National Convention	-.29	.56	.28	1	.60	.75	
CDE Participation	-.06	.45	.02	1	.89	.94	
212 Conference	.72	.46	2.40	1	.12	2.05	
Leadership Camp	.09	.50	.03	1	.86	1.10	
Block 3							.01
Teacher Role Model	.20	.16	1.61	1	.20	1.23	

Seniors. The results from our senior class analysis are found in Table 5. The model predicted only 52% of the variance in a student's decision to consider a career in agriculture – the most of any of our models. Within the model, a student's gender and participation in Leadership Camp emerged as the two most significant predictor variables, while gender independently predicted 13% of the overall variance. Completing CDE activities, and the report of one's agriculture teacher as a role model also served as significantly predictive variables. Simply being female increased the odds to consider a teaching career by 706%. Attending Leadership Camp increased one's chances by fully 2,104%. Participation in CDE activities increased one's odds of considering agricultural education as a career by 459%. For every step increase in identification of one's agriculture teacher as a role model, a student's odds increased 187%. One's reported parental support did not emerge as a significant variable for senior-level students.

Table 5

Hierarchical Logistical Regression for Seniors

	β	SE β	Wald's χ^2	df	p	e^{β}	Δ R^2
Block 1							.13
Gender	1.95	.71	7.55	1	.006	7.06	
Block 2							.35
Parent Support	.41	.47	.72	1	.37	1.50	
Chapter Officer	-1.60	1.44	1.23	1	.26	.20	
State Convention	1.21	.93	1.70	1	.19	3.33	
National Convention	-1.06	1.34	.63	1	.43	.35	
CDE Participation	1.53	.80	3.69	1	.05	4.59	
212 Conference	.53	1.00	.29	1	.59	1.70	
Leadership Camp	3.04	1.10	7.74	1	.01	21.04	
Block 3							.04
Teacher Role Model	.93	.33	3.58	1	.05	1.87	

Discussion and Implications

Our research questions focused on the factors that were most strongly predictive of a high school students' consideration of agricultural education as their chosen profession. As expected and in support of numerous other studies, parental support of agricultural education as a career was a significant predictor for a student to consider said occupation (Faulkner et al., 2009; Marx et al., 2014; Rocca & Washburn, 2005; Vincent et al., 2012; Wahl & Blackhurst, 2000). These findings suggest a parental education campaign is critical to the recruitment of future high school teachers of agriculture: the student's perceptions of parental dispositions toward their career choice seem an integral component to change and encourage student orientations toward such a career. These findings highlight the potential need for parents' inclusion in the recruitment process, and that the sophomore year might be the critical time to involve parents in an informational campaign about agricultural education as a profession. In addition, future studies related to parental perceptions of agricultural education and factors parents use to determine how to counsel their student(s) in future careers could serve to further elucidate a model of student career choice.

Students' perception of their agricultural teacher as a role model also served as a powerful predictor, supporting previous literature findings that the agriculture teacher influences a student's choice of agricultural education as a college major (Hillison, Camp, & Burke, 1986; Marx et al., 2014). Such perceptions outweighed all FFA-related activities within the aggregated student population in predicting openness to teaching agriculture as a profession. This finding further emphasizes the need for teacher education programs and for those in charge of educator professional development to provide skill building in the interpersonal and affective domains of teaching agriculture. Agricultural educators must build positive, impactful relationships with students which can be the catalyst for a student to follow in their agriculture teacher's footsteps (Wigfield & Eccles, 2000).

Participation in specialized leadership conferences emerged as a significant predictor for students to consider agricultural education careers, also per previous findings (Marx et al., 2014). Expectancy-value theory posits that these past experiences are essential in how a student develops positive affect toward a career as they consider their options (Wigfield & Eccles, 2000). The FFA experiences most significant to a student's consideration of a career in agricultural education included attending the 212 Conference, Leadership Camp, and the [AGED] Conference. The review of where to allocate more resources and time should examine these specific events to determine if they can be made more robust and potentially allow more students to participate, as all three conferences have had waiting lists for several years. This review is especially noteworthy, as our results suggest these experiences may be most predictive for freshmen and sophomores. Further investigation of these events could help determine the factors that contribute to effectiveness to ensure those components remain in the programming.

The agricultural experience within our model that served as the most powerful predictor was participation in career development events, which was previously identified as a powerful influence on career decision-making (Marx et al., 2014). Given these findings, agriculture teachers should be encouraged to structure their career development event selection system in a manner that can include as many students as possible, rather than as closed systems wherein only a small number of students participate. State staff and teacher educators can play a role in this process, providing programming on best practices for inclusion and recruitment of students for career development event participation.

It may be important to note that parental support did not emerge as a significant predictor in freshmen and seniors. This finding has not been reflected in other studies, although those failed to disaggregate data by grade level. It may be possible that parents of freshmen have not begun to discuss career options with their children explicitly. Moreover, seniors already may have solidified their career choices, reducing the influence of parents in predicting such choices. The findings from this study suggest that the provision of parental education during the freshmen year could be beneficial, particularly in keeping students open to the consideration of a career in teaching agriculture.

A final significant finding was that gender served as a much more powerful predictor of a student's decision to consider instruction in agriculture for juniors and seniors than it was for freshmen and sophomores. The older the students were, the less likely boys considered it as a career option. By the time students reached their senior year, many more girls remain open to teaching agriculture than boys, even controlling for variation in parental support, perceptions of their current agriculture teacher, and participation level within a variety of co-curricular experiences related to the agriculture classroom. These results suggest that recruitment efforts that fail to focus on boys prior to their senior year may not maximize their potential effectiveness. While boys represent over half of the sample within this study; only a small minority of senior boys remain open to agricultural education as a career.

Overall, the findings suggest that the foundation for decision-making of agricultural teaching as a career begins when students are freshmen, and can be influenced by their involvement level in co-curricular experiences related to the agriculture classroom. Students' decision-making influences evolve by their sophomore year through the development of their relationship with their agriculture teachers, and by junior year, their openness to consider teaching has mostly ended. By their senior year, students' gender, for example, is roughly twice as powerful a predictor as their relationship with their agriculture teacher.

Limitations and Future Research

Limitations of the study are the inclusion of only one state in the study - expanding this study would be prudent, as every state and region is a unique context. In addition, a more purposeful sampling technique with stratification for a variety of variables could contribute to a more generalizable data set; our data collection methods, which stemmed from a canvas of all registered programs within a single state, could have included a response bias to our data and therefore our results. Moreover, our use of perceived parental support as our criterion variable might have affected the validity of our results – our investigation was not longitudinal in nature, and therefore we did not collect empirical data investigating real decisions to pursue teaching agriculture. Finally, the study did not examine the ways in which race and socioeconomic status may affect the choice to pursue a career in agricultural education. Socioeconomic status may influence the level of support that parents give to their student when pursuing a career that is considered "high paying" over a choice based purely on interest. The additional focus of race could provide and intersectional examination of how parents and families of color choose to support the pursuit of a career that lacks racial diversity while problematizing the historical role that race plays in land ownership and agricultural in general. The findings of this study could be beneficial to agricultural education programming in other states; however, it is recommended a similar study be undertaken in other states to determine if observation of similar trends occur. With the centralized nature of the National FFA Organization and TeachAG campaign, having data from a national sample would be a definite asset in the identification of the most important factors for recruitment of future agricultural educators. In light of the significance of parental support in the current study, the inclusion of parents of secondary agricultural education students in future studies could provide vital information.

References

Dyer, J. E., & Breja, L. M. (2003). Problems in recruiting students into agricultural education programs: A delphi study of agriculture teacher perceptions. Journal of Agricultural Education, 44(2), 75-85. doi:10.5032/jae.2003.02075

Eccles, J. S. (1984). Sex differences in achievement patterns. In T. Sonderegger (Ed.), Nebraska Symposium on Motivation (Vol. 32, pp. 97-132). Lincoln, NE: University of Nebraska Press.

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), Achievement and achievement motivation (pp. 75-146). San Francisco, CA: W.H. Freeman.

Elfers, A. M., Plecki, M. L., St. John, E., & Wedel, R. (2008). Undergraduates' views of K-12 teaching as a career choie. Retrieved from Seattle, WA:

Faulkner, P. E., Baggett, C. D., Bowen, C. F., & Bowen, B. E. (2009). Attitudes, educational, and career choices of food and agricultural sciences insititute participants. Journal of Agricultural Education, 50(1), 45-56. doi:10.5032/jae.2009.01045

Goecker, A. D., Smith, P. G., Smith, E., & Goetz, R. (2010). Employment opportunities for college graduates in food, renewable energy, and the environment: United States, 2010-2015 (Vol. 2015). Retrieved from United States Department of Agriculture, National Institute of Food and Agriculture website: http://www3.ag.purdue.edu/USDA/employment/pages/default.aspx.

Harms, B. M., & Knobloch, N. A. (2005). Preservice teachers' motivation and leadership behaviors related to career choice. Career and Technical Education Research, 30(2), 101-124. doi:10.5328/cter30.2.101

Hillison, J., Camp, W. G., & Burke, S. R. (1986). Why undergraduates choose agricultural educaiton as a major: 1980 vs 1985. Journal of Agricultural Education, 28(2), 8-17. doi:10.5032/jaatea.1987.02008

Kantrovich, A. J. (2007). A national study of the supply and demand for teachers of agricultural education from 2004-2006. Retrieved from Morehead, KY:

Kitchel, T., & Ball, A. L. (2014). Quantitative Theoretical and Conceptual Framework Use in Agricultural Education Research. Journal of Agricultural Education, 55(1), 186-199. doi:10.5032/jae.2014.01186

Kyriacou, C., & Coulthard, M. (2000). Undergraduates' views of teaching as a career choice. Journal of Education for Teaching, 26(2), 117-126. doi:10.1080/02607470050127036

Lawver, R. G., & Torres, R. M. (2012). An analysis of post-secondary agricultrual education students' choce to teach. Journal of Agricultural Education, 53(2), 28-42. doi:10.5032/jae.2012.02028

Marx, A. A., Simonsen, J. C., & Kitchel, T. (2014). Secondary agricultural education program and human influences on career decision self-efficacy. Journal of Agricultural Education, 55(2), 214-229. doi:10.5032/jae.2014.02214

Nauta, M. M. (2007). Assessing college students' satisfaction with their academic majors. Journal of Career Assessment, 15(4), 446-462. doi:10.1177/1069072707305762

Rocca, J. S., & Washburn, S. G. (2005). Factors influencing college choice of high school and transfer matriculants into a college of agriculture. NACTA Journal, 49(1), 32-38.

Thieman, E. B., Marx, A. A., & Kitchel, T. (2014). "You've always got challenges": Resilience and the preservice teacher. Journal of Agricultural Education, 55(4), 12-23. doi:10.5032/jae.2014.04012

Valadez, J. R. (1998). Applying to college: Race, class, and gender differences. Professional School Counseling, 1(5), 14-20.

Vincent, S. K., Henry, A. L., & Anderson II, J. C. (2012). College major choice for students of color: Toward a model of recruitment for the agricultural education profession. Journal of Agricultural Education, 53(4), 187-200. doi:10.5032/jae.2012.04187

Wahl, K. H., & Blackhurst, A. (2000). Factors affecting the occupational and education aspirations of children and adolescents. Professional School Counseling, 3(5), 364-374.

Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. Educational Psychology Review, 6, 49-78.

Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A theoretical analysis. Developmental Review, 12, 265-310.

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. Contemporary Educational Psychology, 25, 68-81. doi:10.1006/ceps.1999.1015