

Determining Collaboration Between University of Florida Institute of Food and Agricultural Sciences Extension Agents and Secondary School-Based Agricultural Educators

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Abstract

Successful and beneficial collaboration relies on the dedication of individuals to cooperate, the established culture of collaboration and cooperation and a desire and willingness to collaborate. Agricultural educators and Extension agents often find themselves in competition for members rather than cooperation to develop members. Working in conjunction with one another in a concerted effort allows the two groups to develop youth into more efficient and effective leaders and citizens. This study utilized the Theory of Planned Behavior (Ajzen, 1985). As applied to this study, this theory would hold that the variables of interest, personal and professional demographics within the two groups, to influence collaboration levels between agricultural educators and extension agents because these factors can shape and include attitudes, subjective norms, and perceived behavioral controls. This study found perceptions between school-based agricultural educators and Extension agents do hold positive views of cooperation. However, this cooperation does not happen very often outside of well-established instances. Upon examination of this study, we recommend further research be done to maintain an accurate reading of cooperation between these two entities and delve further into what motivates them.

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Introduction and Problem Statement

In a world with a growing, hungry population and an agriculture sector shrinking in population and acreage, both formal and informal educators of agriculture, natural resources, and applied sciences must remain as relevant as possible. School-based agricultural educators and University of Florida Extension agents essentially have the same goals but with varying target audiences. The role of a school-based agricultural educator is to develop students that are both lifelong learners and gain agricultural literacy, and to contribute to a skilled agriculture workforce (Roberts & Ball, 2009). Similarly, the role of an Extension agent is to take the research provided by the land-grant university system and disseminate that information to serve the citizens of a particular community by teaching and providing advice, guidance, and information on a variety of topics (Cooper & Graham, 2001). Murphrey et al. (2011) describe factors that lead to successful collaboration between the two groups, which include environmental factors and membership characteristics, but those factors are not always present. Mutually beneficial partnerships are possible when these factors are present, but participants in a study by Scherer et al. (2018) rarely mentioned any type of partnership. While both descriptions are similar and certainly overlap, the question remains: to what level do school-based agricultural educators and Extension agents collaborate to achieve these goals? Whether the two groups should collaborate or compete has been debated since each of their inceptions (Hillison, 1996). The recruitment, scholarship, and development of students in FFA and 4-H is a point of contention (Gage et al., 2004; Gates et al., 2020; Gill et al., 2010; Nowakowski et al., 2023; Russell, 2016). Too often we find there is a disconnect between school-based agricultural educators and Extension agents in relation to collaborating for academic purposes, with extension agents and school-based agricultural educators identifying a communication gap between groups (Seevers & Stair, 2015).

Theoretical and Conceptual Framework

This study utilizes the Theory of Planned Behavior. The theory of planned behavior stemmed from the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) which was designed to predict volitional behaviors and to help us understand their psychological determinants (Azjen, 1985). In general, this theory indicates that a person's behavior is affected by their intentions which is in turn affected by attitude, subjective norm, and perceived behavioral controls. In this study, the theory of planned behavior suggests that the variables of interest—personal and professional demographics within the two groups—affect collaboration levels between agricultural educators and Extension agents. This influence occurs because these factors shape attitudes, subjective norms, and perceived behavioral controls. The study was designed around this theory because if the perspectives and backgrounds of agricultural educators and Extension agents affect behavior, then differences in collaboration levels should be observable. Attitudes influencing collaboration encompass the individual's positive or negative feelings towards collaborative efforts. Subjective norms are shaped by the peers and professional community to which the extension agent or SBAE teacher belongs. Perceived behavioral control involves the availability of resources, necessary skills, and opportunities for collaboration.

Purpose

This survey study aimed to describe and determine collaboration levels between University of Florida Extension agents and school-based agricultural educators. A quantitative survey was used to determine how each group perceives the current levels of collaboration, the levels each group values collaboration, and if each group sees a potential for growth in collaboration. The objectives of this study include the following:

- 1. Describe the perception of school-based agricultural educators toward cooperation.
- 2. Describe the perception of extension agents toward cooperation.
- 3. Describe the level of school-based agricultural educator and extension agent collaboration.
- 4. Identify cooperative efforts between school-based agricultural educators and extension agents.

Methods

This study used an online survey that followed the Tailored Design Method by Dillman et al. (2014). Dillman et al. (2014) focused their Tailored Design Method around the notion that to create quality surveys, surveyors must limit coverage error, sampling error, nonresponse error, and measurement error.

The target population for this study was secondary school-based agricultural education educators in the state of Florida and University of Florida Extension County faculty, also known as Extension agents. According to the Florida Association of Educator's directory, in the year 2023, there were 517 individuals employed as school-based agricultural educators in Florida. This included teachers at both high school and middle school level programs. Currently, there are 357 individuals serving as University of Florida Extension agents in some capacity in Florida. These agents represent various specializations including agriculture and horticulture, individual and family development, community resources and economic development and 4H youth development. This study population included all agents regardless of their specialization or school-based agricultural educators based on grade level taught.

Using the Florida Association of Agriculture Educator's directory, all agriculture teachers were emailed for input on this survey. Using the University of Florida personnel directory, all Extension agents were emailed for participation in this survey as well. Both groups were emailed and encouraged to respond by completing the survey. A preemptive email was sent to advise the participants a survey was on the way. The surveys themselves were initially emailed to the agricultural educators and Extension agents, and a reminder to complete the survey was sent a week later. The final reminder was sent a week later. The last opportunity for agricultural educators and agents to submit their survey was two days later. Agricultural educators and agents could complete the survey at a time of their choosing and at their own pace. The survey allowed both populations to begin the survey and return to the survey if time did not allow completion in one sitting. In the end, the sample comprised of 60 school-based agricultural educators and 102 University of Florida Extension agents. In total, the survey was sent to 892 individual emails. Only 851 surveys made up the accessible sample, as two were duplicate, 29 bounced, and 10 failed. Thus, the response rate was 19%.

The survey itself was based on the instrument used by Ricketts and Place (2005) but amended by the researchers to gain an understanding of how each group perceived current levels of collaboration, the levels each group valued collaboration, and if each group saw a potential for growth in collaboration, while the instrument used in Ricketts' and Place's 2005 study focused on perceptions regarding cooperation, their cooperative behavioral intentions (what motivates them to collaborate), and individual experiences with collaboration. The instrument was reviewed by a panel of experts and pilot-tested by two small groups of the target populations.

This study used three main constructs to divide the items or questions asked. The first construct revolved around teachers' and agents' perceptions of collaboration. These items required the individuals being surveyed to respond using a five-point Likert-type scale (1 meaning the participant strongly disagrees with the item presented, 2 meaning the participant disagrees with the item presented, 3 meaning the participant is *neutral* with the item presented, 4 meaning the participant agrees with the item presented, and 5 meaning the participant strongly agrees with the item presented). The second construct revolved around how much teachers and Extension agents cooperate and collaborate. These items required the individuals being surveyed to respond using a four-point Likert-type scale (1 meaning the participant has never been involved with the item occurring, 2 meaning the participant is seldom involved with the item occurring, 3 meaning the participant is usually involved with the item occurring, and 4 meaning the item *always* occurs). The last construct revolved around identifying where teachers and Extension agents currently collaborate. This construct also used a four-point Likert-type scale (1 meaning the participant has never been involved with the item occurring, 2 meaning the participant is *seldom* involved with the item occurring, 3 meaning the participant is usually involved with the item occurring, and 4 meaning the item always occurs).

Completed questionnaires were grouped, entered, and analyzed through SPSS 27 and allowed the researcher to analyze the data easily and with confidence. Descriptive statistics were calculated to determine frequencies of each item and sorted by occupation. Figures were then rounded to the nearest tenth decimal place.

Findings

This survey study aimed to describe and determine collaboration levels between University of Florida Extension agents and school-based agricultural educators. A quantitative survey was used to determine how each group perceives the current levels of collaboration, the levels each group values collaboration, and if each group sees a potential for growth in collaboration.

Results concerning collaboration levels between University of Florida Extension agents and school-based agricultural educators are presented in the following sections.

Objective One: Determine the perception of school-based agricultural educators toward cooperation.

This survey aimed to gauge respondents' attitudes toward cooperation within the context of either school-based agricultural educators for grades 5th through 8th or school-based agricultural educators for grades 9th through 12th.

Results indicate that a high percentage of both groups value cooperation. Specifically, 92.9% (n = 13) of educators for grades 5th through 8th and 89.1% (n = 41) of educators for grades 9th through 12th *agreed* or *strongly agreed* that cooperation allows for enhanced research sharing. Similarly, the majority of both groups (92.9%, n = 13 for grades 5th-8th and 100%, n = 46 for grades 9th-12th) believed in cooperating with committed and responsible individuals.

When it came to the importance of cooperation between agricultural educators and Extension agents, the responses were positive, with 85.7% (n = 12) of educators for grades 5th-8th and 80.4% (n = 37) for grades 9th-12th *agreeing* or *strongly agreeing*. Additionally, most respondents (78.6%, n = 11 for grades 5th-8th and 91.3%, n = 42 for grades 9th-12th) felt that full participation from all parties was necessary for cooperation.

Most educators (64.3%, n = 9) in grades 5th-8th believed that some personalities do not work well together, while 91.1% (n = 42) of educators for grades 9th-12th *disagreed* with this. Nonetheless, both groups recognized the importance of cooperation in making projects more effective, with 85.7% (n = 12) of grades 5th-8th and 95.6% (n = 44) of grades 9th-12th (n = 44) agreeing or strongly agreeing.

All educators saw personal relationships outside of work as enhancing cooperation, with 100% (n = 14) agreement among those for grades 5th-8th and 78.3% (n = 36) for grades 9th-12th. Additionally, the majority from both groups believed that the time invested in cooperation was well spent (85.7%, n = 12 for grades 5th-8th and 78.3%, n = 36 for grades 9th-12th) and that cooperation could lead to time savings after an initial investment (85.7%, n = 12 for grades 5th-8th and 87.0%, n = 40 for grades 9th-12th).

When considering cooperation, many respondents for grades 5th-8th (78.6%, n = 11) and grades 9th-12th (71.7, n = 33) indicated that the characteristics of other parties, such as personality, responsibility, and respect influences their decision. However, a noteworthy percentage (30.8%, n = 4 for grades 5th-8th and 38.7%, n = 17 for grades 9th-12th) felt *neutral* about whether they could communicate freely with agricultural educators/Extension agents in their county.

A majority of both groups (100%, n = 14 for grades 5th-8th and 76.1%, n = 35 for grades 9th-12th) considered a congenial relationship with colleagues important for successful operation. Regarding the belief that people should be able to work with anyone if they try hard enough, 64.3% (n = 9) of educators for grades 5th-8th *agreed*, while 63% (n = 29) of educators for grades 9th-12th *agreed*.

A notable portion of respondents (57.1%, n = 8 for grades 5th-8th) believed they could work best with those they had a history with, while 39.1% (n = 28) of educators for grades 9th-12th *agreed*. Interestingly, most educators for grades 5th-8th (57.1%, n = 8) *disagreed* with the idea that they had nothing to reciprocate to colleagues, whereas a larger percentage (69.6%, n = 32) of educators for grades 9th-12th disagreed. Concerning the perception of colleagues' busyness and its impact on cooperation, 57.1% (n = 8) of educators for grades 5th-8th *disagreed*, while 47.8% (n = 22) of educators for grades 9th-12th *disagreed*.

Most educators from both groups did not believe cooperative relationships consumed too much time (57.1%, n = 8 for grades 5th-8th and 67.4%, n = 31 for grades 9th-12th). Interestingly, 64.3% (n = 9) of educators for grades 5th-8th *disagreed* with making cooperation decisions based on what they heard from others in their field, while 60.9% (n = 28) of educators for grades 9th-12th disagreed. Regarding competition between FFA/4-H for participants, most respondents *disagreed* (57.1%, n = 8 for grades 5th-8th and 56.5%, n = 26 for grades 9th-12th). Interestingly, a substantial percentage (34.7%, n = 16) of educators for grades 9th-12th remained *neutral* on this topic.

Lastly, a significant majority of respondents from both groups rejected the idea that cooperation should only occur in certain situations (100%, n = 14 for grades 5th-8th and 71.7%, n = 33 for grades 9th-12th). Similarly, a large percentage (92.9%, n = 13 for grades 5th-8th and 89.1%, n = 41 for grades 9th-12th) *disagreed* with the notion that students should not be allowed to participate in both FFA and 4-H.

In summary, the survey revealed a generally positive attitude toward cooperation among agricultural educators, with a few variations in perception between those teaching different grade levels.

Objective Two: Determine the perception of Extension agents toward cooperation.

To the statement "cooperation allows for added research sharing," 94.1% (n = 96) of Extension agents either *agreed* or *strongly agreed*. Agents overwhelmingly *agreed* or *strongly agreed* with the statement "I am more likely to cooperate with someone who is committed and follows through on a project", with 86.3% (n = 88). Next, 91.1% (n = 93) of Extension agents *agreed* or *strongly agreed* with the statement "cooperation between agricultural educators and Extension agents is important to offer the best opportunities to youth. Further, 88.2% (n = 90) of agents *agreed* or *strongly agreed* with the statement "full participation by all parties is necessary for cooperation to occur." To the statement "some personalities do not work well together," 83.3% (n = 85) of agents *agreed* or *strongly agreed* while 12.7% (n = 13) were *neutral*.

Most Extension agents agreed with the statement "most projects need cooperation to be more effective" with 82.4% (*n* = 84) *agreeing* or *strongly agreeing*. To the statement "there are certain personalities with whom I work well," Extension agents *agreed* or *strongly agreed* with a

total of 93.1% (n = 95). The statement "personal relationships with potential cooperators outside of work enhance the possibility of cooperation at work" saw 68.6% (n = 70) of Extension agents *agree* or *strongly agree* while 23.8% (n = 24) answered as being *neutral*. As the to the statement "the time I devote to cooperation is well-invested," a total of 83.2% (n = 85) *agreed* or *strongly agreed* and 14.9% (n = 15) were *neutral*. A total of 78.4% (n = 80) *agreed* or *strongly agreed* with the statement "after initial time devoted, effective cooperation will result in greater time savings," while 18.6% (n = 19) answered as *neutral*.

To the statement "successful cooperation can only occur with people I respect," 30% (n = 31) of Extension agents *agreed*, 26% (n = 27) responded as *neutral*, and 36% (n = 37) *disagreed*. The majority of agents were *neutral* regarding the statement "I listen to the agricultural educator/Extension agent in my county more than they listen to me" with a total of 61% (n = 62). Agents *disagreeing* or *strongly disagreeing* with that statement totaled 30% (n = 31). The statement "If I want things done right, I'll do them myself" was met with various answers (30%, n = 31 of agents *agreed*, 32.6%, n = 33 responded as *neutral*, and 21%, n = 21 *disagreed*). The statement "I work best with whom I have a history" was *agreed* with by 27.3% (n = 23), responded to as *neutral* by 39.4% (n = 40), and *disagreed* with by 30% (n = 31).

Extension agents responded to the statement "I feel like I don't have anything to reciprocate to the agricultural educators/Extension agents in my county" with a total of 81% (n = 83) *disagreeing* or *strongly disagreeing*. The next statement received a variety of responses. 23% (n = 23) of agents *agreed*, 27% (n = 29) responded *neutrally*, and 36% (n = 37) *disagreed* with the statement, "I feel like the agricultural educators slash Extension agents in my county are too busy to cooperate with me." The majority (68.3%, n = 70) of Extension agents *disagreed* or *strongly disagreed* with the statement "I have previously tried to cooperate, and it is not worth the time required." Further, the statement "cooperative relationships consume too much time" saw 74.3% (n = 75) of agents *disagree* or *strongly disagree* and 19.8% (n = 20) responded as *neutral*. Around 60% (n = 61) of agents *disagree* or *strongly disagree* with the statement "My decision to cooperate is based on what I hear from others in my field," while 22.8% (n = 23) responded as *neutral* and 15.8% (n = 16) *agreed*.

To the statement "I feel like I am competing with FFA/4-H for participants," 52% (n = 53) of Extension agents responded as *disagreeing* or *strongly disagreeing*, 21.8% (n = 22) as *neutral*, and 25.7% (n = 27) as *agreeing* or *strongly agreeing*. Most agents (89.1%, n = 91) *disagreed* or *strongly disagreed* with the statement "being organized and punctual are not important in a successful cooperative relationship." A total of 77% (n = 79) of agents *disagreed* or *strongly disagreed* with the statement "FFA and 4-H should cooperate only in certain situations" while 19% (n = 19) responded as *neutral*. Also, a large majority (91.9%, n = 94) of agents *disagree* or *strongly agree* with the statement "students should not be allowed to participate in both FFA and 4-H." Finally, 94% (n = 96) of Extension agents *disagree* or *strongly disagree* with the statement "FFA and 4H should not cooperate."

Objective Three: Determine the level of school-based agricultural educator and Extension agent collaboration.

These responses were categorized by the occupations of the participants, which included agricultural educators for grades 5th-8th, agricultural educators for grades 9th-12th, and Extension agents. Depending on the specific situation, respondents from these groups exhibited varying levels of cooperation with each other, as shown in Table 1.

Table 1

ltem:	Agricultural Educators (5-8 grades) (n = 14)				Agricultural Educators (9-12 grades) (n = 46)				Extension Agents (n = 102)			
	Never	Seldom	Usually	Always	Never	Seldom	Usually	Always	Never	Seldom	Usually	Always
State and county fairs	7.1%	21.4%	21.4%	35.7%	17.4%	10.8%	30.4%	41.3%	13.1%	32.3%	22.2%	32.3%
4-H and FFA judging contests	14.3%	21.4%	35.7%	28.6%	21.7%	26.1%	26.1%	26.1%	32.3%	17.2%	25.3%	34.3%
Sharing resources Seeking out resources for curriculum		21.4% 28.6%				20.5% 40%	40.9% 40%				39.6% 34.1%	
Cooperating with local 4-H clubs and FFA chapters for community service projects	15.4%	30.8%	30.8%	23.1%	20.4%	45.5%	25%	9.1%	22.7%	32%	36.1%	9.3%
Conducting educational programs	23.1%	15.4%	53.8%	7.7%	17.8%	44.4%	28.9%	8.9%	13.4%	22.7%	45.5%	18.6%
Sharing curriculum	23.1%	30.8%	38.5%	7.7%	13.6%	40.9%	34.1%	11.4%	16.5%	22.7%	40.2%	20.6%
Co-training various teams and leadership activities	53.8%	30.8%	15.4%	0%	37.8%	44.4%	13.3%	4.4%	31.3%	41.7%	19.8%	7.3%
Assisting in recruiting members	46.1%	38.5%	15.4%	0%	42.2%	31.1%	24.4%	2.2%	45.8%	31.3%	16.7%	6.3%
Conducting demonstrations/ presentations together	53.8%	30.8%	15.4%	0%	37.8%	46.7%	11.1%	4.4%	33.3%	37.5%	24%	5.2%
Conducting joint adult education programs	57.1%	35.7%	7.1%	0%	62.2%	28.9%	6.7%	2.2%	45.8%	32.2%	17.7%	4.2%

Levels and Instances in Which Agricultural Educators and Extension Agents Cooperate

Objective Four: Identify cooperative efforts between school-based agricultural educators and Extension agents.

The study revealed that cooperative efforts among these groups manifest in diverse ways. A strong majority (86%, n = 139) of the total participants expressed occasional to consistent cooperation with Extension agents and school-based agricultural educators at county and state fairs. Similarly, 81.7% (n = 132) reported their involvement in combined 4-H/FFA judging contests. A notable 90.3% (n = 146) shared resources within their county, while 88.5% (n = 143) sought out Extension agents and agricultural educators as valuable curriculum resources. Moreover, 78.6% (n = 127) engaged in cooperative ventures with local 4-H clubs and FFA chapters through community service projects. Additionally, 84.5% (n = 137) participated in joint educational programs with Extension agents and agricultural educators within their counties, and 83.8% (n = 136) collaborated in sharing curriculum materials locally. Furthermore, 64.9% (n = 105) engaged in co-training activities for various teams and leadership initiatives. Over half (55.2%, n = 89) extended assistance in recruiting members, and 63.6% (n = 103) jointly conducted demos and presentations. Lastly, 48.4% (n = 78) organized and participated in joint adult education programs within their respective counties.

Conclusions, Discussion, and Recommendations

The study reveals several key areas for improvement in school-based agricultural education and extension services. Firstly, there is a need to work together to recruit students to either and/or both youth development programs as each have opportunities for different age groups and interests.

Secondly, the importance of collaboration is highlighted, especially in training groups like judging teams, to optimize resources and support community involvement. There is a need for open communication between Extension agents and school-based agricultural educators, especially from the prospective of 9th through 12th grade SBAE as 26% (n = 12) disagree or strongly disagree and 8% (n = 4) were neutral with the statement "I feel like I can communicate freely with Extension agents in my county."

Furthermore, there is an urgent need to foster mutual respect and active listening between SBAEs and extension agents, as 39% (n = 23) of school-based agricultural education teachers feel undervalued and ignored. Lastly, a prevalent self-sufficiency attitude among both groups suggests a barrier to cooperative efforts, indicating a shift towards more collaborative and interdependent approaches is necessary for enhancing the effectiveness of educational and extension programs.

This study highlights a gap between the favorable perception of collaboration and its actual implementation among Extension agents and SBAE teachers. Despite recognizing the value of working together, actual cooperative efforts are infrequent, pointing to underlying challenges such as communication barriers, cultural differences, and resource limitations. The findings highlight the necessity of transforming this idea of collaboration into practical, actionable

strategies. By encouraging open dialogue, aligning mutual objectives, and creating structured opportunities for collaboration, both groups can bridge the existing gap, leading to enhanced program effectiveness and better community service. The study not only identifies these discrepancies but also encourages a shift towards more integrated and effective collaborative practices.

SBAE teachers and extension agents believe in the benefits of collaboration and feel that their professional communities value cooperation, yet reported collaboration was not frequent. Causes of this discrepancy could result from a lack of perceived behavioral control. Many extension agents and SBAE teachers could feel as though they lack the time to commit to collaboration and cooperation with one another. Another possible cause of the lack of collaboration could simply be a result of communication gaps. Whether it is a result of insufficient communication, where opportunities to collaborate are overlooked, or a lack of sharing information, the communication gap could explain the gap between behavioral intention and practice.

Based on this study, we recommend several actions to strengthen partnerships between university extension agents and school-based agricultural educators, focusing on enhancing collaboration for community and youth programs.

First, university extension agents should maintain a positive outlook on cooperation and seek innovative ways to engage students in their communities (Murphrey et al., 2011). Universities could support this by incorporating the importance of collaboration into the curriculum for future educators and extension agents (Seevers & Stair, 2015).

A task force could be established by professional organizations from both sectors to research and identify new collaborative opportunities. These organizations could also model effective cooperation at organizational and administrative levels. Additionally, planning crossprofessional workshops and training sessions that focus on cooperative skills is essential. Professional development opportunities could specifically highlight strategies for effective collaboration in youth development programs.

Administrators are encouraged to advocate for policies that emphasize collaboration benefits, and professional organizations should recognize and celebrate successful partnerships. Implementing these recommendations can significantly enhance the educational outcomes and community impact of these collaborations.

To refine our understanding of the cooperation between school-based agricultural educators and university extension agents, future research should adopt the following strategic approaches:

• Initially, frequent replication of the study with the same instruments should be conducted to monitor shifts in policy and cultural attitudes among professionals. Conducting these studies across different states can reveal how regions influence professional practices and cooperation.

- Comparative analysis across study replications can identify trends in perceptions, motivations, and factors for collaboration between the two groups (Murphrey et al., 2011). This analysis is critical for understanding evolving relationships and pinpointing areas needing intervention. Incorporating qualitative methods will provide deeper insights into the nature of cooperation and collaboration, adding richness to the quantitative data collected.
- Additional data gathering could include analyzing event calendars for overlap and timing, as well as examining the impact of geographical factors like county size on collaboration efforts. Qualitative data could be collected to provide a richer understanding of why certain behaviors regarding collaboration are exhibited. The study should ensure inclusivity by defining "collaboration" clearly at the outset and including diverse demographic options such as "Hispanic" and others in ethnicity survey questions. These approaches will enable stakeholders to gain clearer insights into the dynamics of community education and foster more effective collaborations.

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