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"Co-opetition?" Can It Exist between Extension and Agricultural Education?—A Study on Interdisciplinary Cooperation

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Abstract: Interdisciplinary cooperation was explored between agriculture teachers and Extension educators in a northeastern state. A researcher-designed questionnaire that focused on three factors—perceptions toward interdisciplinary cooperation, behavioral intentions, and individual cooperative experiences—was used to determine the current cooperative environment. Results indicated that even though agriculture teachers and Extension educators appeared to have similar ideas involving personal perceptions, motivations, and experiences regarding cooperation, much less cooperation is occurring than is ideal. Recommendations include joint preparation for teachers and educators, pre-service and in-service incorporation of various facets of cooperation, and assembling an integrated discussion group where future interdisciplinary associations could be discussed.

Introduction/Theoretical Framework

Cooperation can be defined as to act or work with another or others, and, even more salient for this discussion, to associate with others for mutual benefit. However, there must be a reason for this association. We are too busy and life is too complex to merely associate out of diplomacy. The need for cooperation is apparent across many arenas, and this is even more evident within the educational arena.

According to Fauske (2002), cooperation is necessary for attracting resources in education. In another study, researchers found that through the use of factors such as information sharing, team building, and assigned tasks, the amount of cooperation and resource sharing amongst agriculture and science teachers significantly increased (Whent, 1994). Even cooperative education partnerships between industries and universities are becoming increasingly common in response to fundamental challenges within both sectors (Breen & Hing, 2001). Clearly, engaging in cooperative relationships has its advantages, not the least of which is the ability for those involved to be more efficient and, therefore, effective. Unfortunately in some cases, cooperation

still appears to be the exception to the rule rather than the norm.

In the case of secondary agricultural science teachers and county Extension educators, there would seem to be a vast array of areas where cooperation would be possible and most assuredly beneficial. But how can we encourage cooperation when traditionally, the foundation of both 4-H and FFA is based upon competition? The answer is "co-opetition," or establishing mutually beneficial partnerships with other actors in the system.

"Co-opetition" comes to us from the business and management field, and is used to describe: "a business situation in which independent parties *co-operate* with one another and *co-ordinate* their activities, thereby *collaborating* to achieve mutual goals, but at the same time *compete* with each other as well as with other firms" (Zineldin, 2004, p. 780). Thus, co-opetition implies that organizations that traditionally interact in rivalry due to conflicting interests can at the same time co-operate due to common interests. Ultimately, the greater goal here is to create mutually advantageous exchanges and added value (Zineldin, 2004).

Thinking of competition and cooperation in this collective definition is considered by many researchers to be important for future viability (Breen & Hing, 2001; Gilbert, Jr., 1998; Hartwig, 1998; Kenworthy, 1996; Zineldin, 2004). In a time when all facets of education are feeling the need to "do more with less," the ability to engage other educators in strengthening our programs, regardless of their title (FFA teacher, FCS educator, 4-H agent, etc.) will be paramount in our own successes.

Purpose & Objectives

For those of us in the shared goal of developing tomorrow's leaders, it is time we used our resources and relationships more cooperatively. The purpose of the study reported here was to explore cooperation between secondary agriculture teachers and Extension educators in a northeastern state and characterize the cooperative environment between disciplines. To accomplish this purpose, the following objectives were established:

1. Describe the demographic characteristics of the respondents across each discipline;

2. Ascertain the perceptions of agriculture teachers and Extension educators toward general and interdisciplinary cooperation;

3. Determine behavioral intentions of agriculture teachers and Extension educators to cooperate; and

4. Establish individual cooperative experiences of agriculture teachers and Extension educators.

Methodology

The target populations for the study were secondary agriculture teachers and Extension educators across a northeastern state. Study participants were chosen through random sample from the state's Association of Agriculture Teachers directory and the university's personnel directory (with appropriate removal of those Extension educators without collaborative program assignments, such as EFNEP). Within each group, sample numbers were chosen according to the group's total population (Krejcie & Morgan, 1970). One-hundred and seventy (170) secondary agricultural educators and 163 Extension educators, for a total of 333 individuals, were selected for potential participation. The final response rate was 51%, where a

breakdown of the respondents included 83 (49%) agriculture teachers and 88 (51%) Extension educators. The statistical technique of comparing early to late respondents (Miller & Smith, 1983) was used to control for non-response error.

The survey was a researcher-designed instrument. To address the different facets of the study theoretical frameworks, questions broken into four sections were developed for the survey: attitudes toward cooperation, behavioral intentions, personal experiences with cooperation, and demographics. The instrument was reviewed by an expert panel and pilot tested with two different groups to calculate an estimate of reliability for various items in the study. Cronbach's alphas ranged from .81 (Section 1) to .92 for Section 3. A review of the statistics revealed six items that needed to be eliminated to strengthen the study. After eliminating these items, the Cronbach's alphas were .80 for Section 1, .83 for Section 2, and .78 for Section 3, respectively. Survey design and implementation were done according to Dillman (2000), using the Tailored Design method. Returned questionnaires were grouped, entered and analyzed in SPSS.

Results

Participant Demographics

Study participants were predominantly male, at 108 (63%) individuals. When breaking down respondents according to profession, agriculture teachers were strongly male, with 78% or 65 individuals being male, while more female Extension educators responded, with 44 (51%) being female. Both groups were, as a majority, married (approx. 80%) and still had children living at home (ag = 70%; Ext. = 78%). Concerning crossover experience, neither group had a significant number with experience in the other profession. Taking into account respondents' ages, agriculture educators tended to fall in the middle groups, with 76% being between the ages of 26 to 55. Extension educators, on the other hand, had nearly half (46%) fall into the 46-55 years old category. Both groups also had noticeable experience within their profession; 39% of Extension educators and 48% of agriculture teachers studied had been in their job 15 years or more.

Perceptions Regarding Cooperation

When queried regarding the ideal degree of interdisciplinary cooperation, 99% of respondents agreed that a moderate degree of interdisciplinary cooperation should be occurring, with 62% expressing the need for high cooperation across disciplines. The actual picture is different, however, with 69% of Extension educators currently cooperating with agriculture teachers, while 83% of agriculture teachers claiming to cooperate across fields.

When addressing each discipline's perception regarding cooperation, while there was a lot of overlap among respondents, each discipline saw the need for cooperation differently. As illustrated in Table 1, agriculture teachers felt most strongly that projects need cooperation to be more effective ($\bar{X} = 4.30$), while Extension educators' strongest perception was that some personalities simply do not work well together, with a mean of 4.28. Both disciplines did agree on their second strongest perception, concurring that there are certain personalities with which each work well.

Table 1.
Comparison of Agriculture Educators' and Extension Educators' Perceptions Regarding Cooperation (n = 171)[a]

Item		

	Agriculture Educators		Extension Educators	
	M[b]	***SD***	**M[b]**	***SD***
Most projects need cooperation to be more effective.	4.30	.69	3.94	.78
There are certain personalities with whom I work well.	4.07	.58	4.09	.66
Some personalities do not work well together.	4.07	.64	4.28	.68
After initial time devoted, effective cooperation will result in greater time savings.	4.00	.54	4.02	.72
My decision to cooperate is dependent upon the other parties' characteristics such as responsibility, personality, and respect.	3.88	.71	3.98	.85
Full participation by all parties is necessary for cooperation to occur b/t agriculture teachers and Extension educators.	3.88	.93	3.90	.95
I work best with those with whom I have a history.	3.73	.95	3.75	.88
Personal relationships with potential cooperators outside of work enhance the possibility of cooperation at work.	3.47	.97	3.59	.95
I cooperate best with old acquaintances.	3.36	.92	2.95	.84
Successful cooperation can only occur with people I respect.	3.33	1.01	3.03	.92
Cooperation requires additional time.	3.30	.99	3.53	.93
Cooperation requires more effort than working alone.	3.22	1.04	3.38	.99
Co-workers' opinions affect my perceptions regarding cooperation.	3.07	.88	2.97	.88
If I want things done right, I do them myself.	2.93	1.05	2.54	.83
I listen to the Extension educator(s)/agriculture teacher(s) in my county more then they listen to me.	2.61	.78	2.74	.74
I support the Extension educator(s)/agriculture teacher(s) in my county more then they support me.	2.52	.77	2.81	.78
My decision to cooperate is based upon what I hear from others in my field.	2.46	.91	2.40	.80
I feel like I don't have anything to reciprocate to the Extension educator(s)/agriculture teacher(s) in my county.	2.41	.83	2.35	.87
I feel like the Extension educator(s)/agriculture teacher(s) in my county are too busy to cooperate with me.	2.36	.98	2.62	.87

I feel like I'm competing with 4-H/FFA for participants.	2.28	.95	2.40	1.04
Cooperative relationships consume too much time.	2.25	.71	2.08	.55
I have previously tried to cooperate; it is not worth the time required.	2.12	.79	2.15	.76
FFA and 4-H should cooperate only in certain situations.	1.69	.85	1.98	.91
Being organized and punctual are not important in a successful cooperative relationship.	1.69	.94	1.62	.81
Students should not be allowed to participate in 4-H & FFA.	1.42	.81	1.49	.79
In general, FFA and 4-H should not cooperate.	1.31	.58	1.39	.67
a: n = 171; 83 agriculture educators and 88 Extension educators. *Note.* Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree				

When discussing the statements with which both groups most strongly disagreed, there was strong accord between parties. Strongest opposition was to the sentiment that FFA and 4-H should not cooperate, with both agriculture teachers (= 1.31) and Extension educators (= 1.39) strongly disagreeing. It is important to note that study participants agreed that competition or a lack of cooperation among youth organizations is useless and irrelevant.

Cooperative Behavioral Intentions

When considering cooperation and the prospect of it occurring, one must first look at the motivation of each party involved, which affects their behavioral intentions (Triandis, 1977). Both agriculture teachers and Extension educators responded similarly when asked about their most significant motivators when creating cooperative associations (Table 2).

Table 2.
Comparison of Agriculture Educators' and Extension Educators' Behavioral Intentions (n = 171)[a]

Item	**Agriculture Educators M[b]**	**Extension Educators *SD***	**M[b]**	***SD***
Organizational Factors				
Value to youth	3.78	.45	3.71	.50
Benefit to participating programs	3.40	.49	3.56	.50
Increased awareness of agriculture education/Extension	3.30	.64	3.31	.69

Agriculture teaching's/Extension's values	3.27	.63	3.15	.76
Agriculture education's/Extension's mission	3.25	.68	3.26	.67
Vision of agriculture education/Extension	3.19	.68	3.08	.70
Agricultural education's/Extension's philosophy	2.98	.61	2.98	.75
Individual Factors				
Increased value to youth	3.64	.51	3.65	.53
Enhancing subject area	3.37	.60	3.38	.61
Make activities more enjoyable	3.30	.58	3.20	.75
More effective time usage	3.21	.54	3.24	.57
Improved professional relationships	3.17	.63	3.28	.55
Greater ability to specialize in area(s) of interest	3.01	.63	2.95	.76
Personal satisfaction	2.98	.74	3.11	.62
Greater professional recognition	2.33	.79	2.35	.74
Satisfy my supervisor(s)	2.10	.84	2.30	.85
Receiving monetary rewards	1.84	.75	1.76	.83
a: n = 171; 83 agriculture educators and 88 Extension educators. *Note.* Scale: 1 = Never, 2 = Seldom, 3 = Usually, 4 = Always				

Under organizational factors, the top responses were identical for both disciplines, with the respective organization's value to youth being the top motivator to cooperate (Ag.: = 3.78; Ext.: = 3.71), followed closely by being motivated (to cooperate) for its benefit to participating programs (Ag: = 3.40; Ext.: = 3.56). With regard to individual factors, the trend seems to continue, with the groups continuing to share their top two motivators, with an increased value to youth being their top individual motivator (Ag: = 3.64; Ext.: = 3.65), and enhancing subject area being their second priority (Ag: = 3.37; Ext.: = 3.38). Overall, agriculture teachers and Extension educators have similar perceptions about what motivates them to attempt or refrain from cooperation.

Individual Experiences with Cooperation

Agriculture teachers and Extension educators shared similar opinions when addressing positive cooperative experiences. While each group responded in a slightly different order of emphasis, the venue with the strongest cooperative experiences was the same—the county fair. Both groups expressed there was usually a need to cooperate in the fair setting, with means of 3.39 and 3.12, respectively. On the opposite end of the spectrum, cooperating on aspects such as educational programming, joint adult programming, community service projects, and sharing curriculum was reported as happening rarely. In addition, a majority of the

venues where cooperation is occurring the least involves youth, particularly in 4-H and FFA (Refer to Table 3).

Table 3.
Comparison of Agriculture Educators' and Extension Educators' Cooperative Experiences (n = 171)[a]

Item	Agriculture Educators M[b]	Extension Educators *SD*	M[b]	*SD*
I cooperate with Extension educator(s) at the county/state fair.	3.39	.84	3.12	.97
I have experienced successful results when I have cooperated with Extension educator(s)/agriculture teacher(s).	3.28	.71	2.96	.81
My cooperative activities are successful.	3.14	.65	3.09	.61
I encounter examples of successful cooperative instances from my peers.	2.99	.56	2.70	.63
The organization encourages cooperation between 4-H and FFA.	2.95	.83	2.78	.84
I participate in combined 4-H/FFA judging contests.	2.72	1.07	2.52	1.08
I share resources with the Extension educator(s)/agriculture teacher(s) in my county.	2.58	.93	2.84	.94
I conduct educational programs with the Extension educator(s)/agriculture teacher(s) in my county.	2.54	.93	2.46	.89
I cooperate with local 4-H clubs/FFA chapters through community service projects.	2.19	.88	1.84	.88
I share curriculum with the Extension educator(s)/agriculture teacher(s) in my county.	2.10	.88	2.53	.89
The Extension educator(s)/agriculture teacher(s) in my county and I conduct joint adult education programs.	2.09	1.35	2.02	1.00
The Extension educator(s)/agriculture teacher(s) in my county and I assist each other in recruiting students/members.	1.94	.86	2.05	.90
The Extension educator(s)/agriculture teacher(s) in my county and I conduct	1.90	.91	1.91	.84

demos/presentations together.				
The Extension educator(s)/agriculture teacher(s) in my county and I co-train various teams and/or other leadership activities.	1.71	.69	1.88	.83

a: n = 171; 83 agriculture educators and 88 Extension educators.
Note. Scale: 1 = Never, 2 = Seldom, 3 = Usually, 4 = Always

Conclusions & Implications

Results revealed that agriculture teachers and Extension educators appear to have very similar ideas involving personal perceptions, motivations, and experiences regarding cooperation. Unfortunately, while respondents considered cooperation important in their personal perceptions, this consideration was not carried over into individual experiences. It is important to illustrate and discuss the current cooperative environment between these disciplines in order to improve and encourage future teamwork.

Significantly, neither group had a considerable number of individuals with experience in the other profession. This may contribute to a lack of knowledge of necessary aspects of the profession—timelines, job requirements, diversity of tasks, etc. When asked, educators revealed that a primary reason for a lack of cooperation is a lack of similarity or commonalities in their professions. Having different work schedules, serving different constituents, and divergent visions across organizations were all reasons cited in contributing towards indifference toward cultivating cooperative associations. Nonetheless, often the issue isn't a lack of convergence, but a lack of education. One of the most direct ways to address this issue would be to encourage cooperative college courses focusing on both professions. These courses could provide valuable cross-field information for future educators, and also serve to encourage developing friends and networks for future cooperative associations.

When discussing perceptions about cooperation, agriculture teachers and Extension educators both have very positive attitudes about the need for cooperation. It appears that a majority of people realize the need for effective interdisciplinary cooperation. However, while individuals recognize the importance of cooperation, it isn't occurring as much as it could be. In addition, there seem to be certain gaps in basic cooperation knowledge. Effectiveness of cooperation, initial time devoted versus overall time needed and other advantages of cooperation appear to be unfamiliar to many respondents, indicating a gap of knowledge. This continues to encourage the need for development and participation in cooperatively focused seminars, in-services, etc., that could also serve to develop relationships and networks needed to initiate cooperation.

Studying the cooperative motivations of potential members also provides a piece to the overall picture. Again, both groups appeared to be on the same page. Increased value to youth, organization's value to youth, enhancing subject area, and benefit to respective discipline were all agreed on as the most important motivators to both groups. Respondents appear to realize the value of cooperation. Specific to the leadership within each field, there is a need to continue to encourage interdisciplinary cooperation and remove barriers. Failing to value or encourage cooperation within the work environment would be a detriment to the field.

Addressing positive cooperative experiences, there were again many similarities. Cooperation is occurring—but there should be more. Both in 4-H and FFA, dividing up presentations, sharing recruiting opportunities, and cooperating on community service projects were found within both professions to be the least likely venue for cooperation. Yet these are some of the best opportunities for working together and can

provide the opportunity to build a strong relationship. Developing and demonstrating a good interdisciplinary relationship has benefits for all involved that reach far beyond the advantages to the immediate individuals.

Furthermore, the changing landscape of both traditional and non-traditional education should be treated as an opportunity and not a disadvantage by both education and Extension fields. Cooperation can occur across many fronts: family and consumer science (FCS) teachers with FCS educators, agriculture or horticulture educators with science teachers, even 4-H educators with other leadership organizations in junior high and high school. The idea is not to be limited by "thinking inside the box." More often than not, whenever cooperative relationships are developed, both sides reap the rewards. Applying this to the financial front, in today's times of limited funding, many granting organizations are encouraging and seeking out cooperative relationships as part of the granting process. And this is only one example of the benefits and rewards that can be realized through forming cooperative associations.

In conclusion, the interdisciplinary cooperative field between agriculture teachers and Extension educators seems to be in a very positive place. However, there is room for improvements. Joint preparation for teachers and educators, pre-service and in-service incorporation of various facets of cooperation, and assembling an integrated discussion group where future interdisciplinary associations could be discussed are all opportunities for growth. Because of a continual lack of time and resources, implementing and encouraging cooperative gestures is absolutely essential for survival.

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