

**The Impact of Middle School Agricultural Education Programs as Perceived By Georgia  
Middle School Principals**

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# **The Impact of Middle School Agricultural Education Programs as Perceived By Georgia Middle School Principals**

## **Abstract**

*The purpose of this study was to determine Georgia middle school principals' perception of agricultural education. The National Research Agenda for Agricultural Education and Communication set forth a goal to identify strategies that show promise in expanding enrollment in quality agricultural education programs (Osborne, 2007). This goal manifests itself in the state of Georgia by the creation of middle school agricultural education programs. The likelihood of having a quality agricultural education program is increased when administrative support is present (Kalme & Dyer, 2000). This quantitative study examined 33 Georgia middle school principals that have agricultural education programs at their schools. Results indicate that the principals perceive the agricultural education program as being an important part of the school and community; positively impacting a students' performance in both math and science; assisting students in goal setting, problem solving, and respecting others; and providing equal opportunities for all middle school students.*

## **Introduction/Theoretical Framework**

Middle grades agricultural education programs are important to the total agricultural education profession because they are often the initial point of contact for students who have an interest in the agricultural industry (Rayfield & Croom, 2010). Benefits of agricultural education, including increased agricultural literacy, responsibility, respect, and speaking ability have been documented (Rossetti, Padill, & McCaslin, 1992). Fritz and Moody (1997) found that respondents that did not have a middle school program implemented at their school would like to implement one. Rayfield and Croom (2007) cited the "10x15" proposal developed by the National Council for Agricultural Education to increase the number of quality agricultural education programs in the United States when they wrote,

According to the 10 x 15 Long-Range Goal for Agricultural Education, there will be 10,000 quality agricultural education programs that serve students through classroom instruction, supervised agricultural experience, and FFA programs by year 2015. One avenue of potential growth is to create more middle school agricultural education programs (p. 722).

Kantrovich (2007) warned that the National Council's 10 x 15 goal of having 10,000 quality programs by 2015 would be a complicated and difficult one to satisfy. Whether at the urging of the National Council for Agricultural Education or from states seeking to add middle school programs to improve student achievement and programmatic success, it is apparent that more middle school programs of agricultural education are needed. If additional programs are to be established, school administrators must have a positive perception of agricultural education.

Several studies (Hinkson & Kieth, 2000; Kalme & Dyer, 2000) have concluded that administrators generally have a positive attitude and perception toward agricultural education. However, Kalme and Dyer (2000) stated that programs will be limited unless principals continue

to have a positive image of agricultural education, and recommended that further research be conducted on these perceptions.

Like principals, guidance counselor's perceptions are also important to the growth, development, and success of middle school agricultural education programs. Georgia counselors' perceptions were studied by Woodard and Herren (1995) over 15 years ago. These researchers administered a list of statements to which the counselors responded according to their level of agreement with each statement. They concluded that, as a group, guidance counselors were positive about the benefits of agricultural education. While a guidance counselor will most likely not make decisions regarding the installation of an agricultural education program, their perception may be important to administrators who will make these decisions.

The movement to increase enrollment in agricultural education through building middle school and elementary agricultural education programs began in the late 1980's with research published by Jewell in 1989. Jewell found that increasing the number of introductory agricultural courses might be best accomplished by offering agricultural education programs in middle and elementary schools (1989). These recommendations are in line with what other researchers discovered to be barriers to building enrollment in agricultural education programs. Riesenber and Lierman (1990) analyzed the perception of administrators and teachers in agricultural education on a list of factors that could influence enrollment. Their results concluded that scheduling conflicts, changes in students' interests and attitudes toward agriculture, competition with other elective courses, and academically oriented students being guided away from secondary agriculture were the major factors that influence enrollment. It is reasonable to conclude from Jewell's (1989) research that offering agricultural education to younger students could provide access to agricultural education to more students in spite of the competing factors.

Middle school administrators may have a positive attitude of agricultural education only if they are aware of the benefits (Kalme & Dyer, 2000). Kalme and Dyer (2000) also stated,

If principals are interested in, knowledgeable about, have a positive image of, and are involved in agricultural education programs, they will likely support the program in both words and actions. Consequently, if beliefs are negative interest, knowledge, image and activities of support will likely also be limited (p.117).

Middle school principals that have never been exposed to agricultural education may not understand how an agricultural education program could benefit the students of their schools. Once principals realize the benefits, agricultural education can gain administrative support. Rayfield and Wilson (2008) stated,

Examining principals' views of career and technical education programs may give some indication as to the climate in which those programs are conducted. If we can understand what affects principals' perceptions we can better address those attitudes and work toward improving the principals' views which in turn can strengthen career and technical education (p. 2).

The theoretical framework for this study draws from Gregory's Perception Theory and Wertsch's Social Constructivist Theory. Gregory (1980) argued that perception is a constructive process which relies on top-down processing, meaning an individual perceives a situation or object to be what that individual most likely thinks the object should be. When looking at a situation or object, an individual will develop an idea of what that situation or object is; upon further investigation the idea is often confirmed to be correct, thus perpetuating this process of constructivist perception (Gregory, 1980). Middle school principals perceive middle school agricultural education to be what they think it is most likely to be. The results indicate that if middle school principals have a negative perception of agriculture or FFA, they will have a negative perception of middle school agricultural education.

Constructivist theory was greatly influenced by Jean Piaget (1950) who proposed individuals construct new knowledge through acquisition and assimilation of new information through experience. Social Constructivism recognizes the individual's unique needs and backgrounds and supports the idea that individuals assimilate new information through complex interactions with those they encounter, their previous experiences, and cultural backgrounds (Wertsch, 1997).

For the purpose of this study, Social Constructivism addresses how the middle school principals have or have not learned about middle school agricultural education programs, and Gregory's Perception Theory addresses middle school principals' perceptions of middle school agricultural education. In the absence of experiences on which to construct their knowledge of agricultural education, middle school principals' create a perception of middle school agricultural education that may not always be accurate.

Similar to the way John Locke (1632-1704) viewed learning as an individual writing knowledge on the blank slate of their mind, Social Constructivism explains middle school principals' perception of agricultural education. A lack of knowledge in middle school principals regarding agricultural education can be expected if they have not been exposed to the agricultural education experience; they have no knowledge to write on the blank slate of their mind. These theories directly address and apply to middle school principals who construct their view of middle school agricultural education programs based on their experiences and perceptions of what they hypothesize agricultural education to be.

While many benefits of agricultural education have been documented (Parr, Edwards, and Leising, 2006, Young, Edwards, and Leising, 2009, Rossetti, Padill, & McCaslin, 1992, Wang & King, 2009) and agricultural education has a positive perception among many school administrators (Hinkson & Kieth, 2000; Kalme & Dyer, 2000), very little research exists that reveals middle school principals' perception of middle school agricultural education. This study was conducted in Georgia to better determine middle school principals' perceptions of their agricultural education programs. With this knowledge, university faculty and Georgia Department of Education staff can address any negative perceptions that may exist and work to improve the overall image of middle school agricultural education in hopes of increasing the number of new programs.

## **Purpose and Objectives**

The purpose of this study was to determine how middle school principals perceive middle school agricultural education programs in the state of Georgia. The specific objective of this study was to elicit responses from individual middle school principals, that have active middle school agricultural education programs in their schools, concerning their familiarity with and perceived value of agricultural education. Further, the need to inform principals interested in starting an agricultural education program in their school about their peers' perceived benefits of middle school agricultural education makes this study important (Rayfield & Wilson, 2008).

## **Methods**

This study was descriptive in nature utilizing survey research methodology. The target population for this study was all middle school principals in Georgia with active agricultural education programs. A list was compiled from the Georgia Agricultural Education website of all Georgia middle schools with agricultural education programs. The website revealed 74 middle schools from across the state of Georgia; this list of 74 middle schools was then confirmed by the Georgia Agricultural Education Department state staff. Once the list was secured, the researcher obtained mailing addresses of the principals of those schools, along with emails for the principals, and fax numbers for each school, from the Georgia Department of Education website. The researcher also obtained the email addresses for the agricultural education teachers at each school from the Georgia Agricultural Education website.

In order to ensure validity, the researcher utilized a panel of experts (university faculty and state Department of Education staff) to review the survey for face validity. Because an instrument that met the needs of this study did not exist, two separate instruments were combined to yield one reliable and valid instrument. The first instrument that was modified for use in this study was created by Hinkson and Kieth (2000) and measured attitudes and perceptions of high school administrators. The second instrument that was modified to develop this instrument was created by Dormody and Seevers (1994) and concentrated on leadership development through agricultural education.

Due to the age of the existing instruments that were modified to create the instrument used in this study, the same panel of experts that verified the validity of the instrument was employed to revise, update, and create a new instrument to better reflect middle school agricultural education in Georgia. In addition, a pilot study was conducted with the aid of high school principals of schools that have agricultural education programs. In order to ensure instrument reliability SPSS 16.0 was utilized to analyze the results of the pilot test and calculate the Cronbach's coefficient alpha for each construct of the instrument and the entire instrument. The alpha levels for construct I (familiarity), construct II (math and science), and construct III (leadership) were 0.97, 0.91, and 0.85 respectively. Additionally, the alpha level for the entire instrument was calculated to be .91.

Middle school principals were sent a letter of intent and electronic survey questionnaire via email. After five rounds of emails, the researcher sent hard-copy letters of intent and surveys to

the agricultural education teachers of the schools whose principals had not responded. Principals were given two additional weeks to respond. Following this two week period, the researcher then faxed the letter of intent and the survey to the principals that had not responded. The culmination of these steps yielded 33 surveys resulting in a 45% response rate. In order to control for non-respondents, early and late-responders were compared and no significant difference was found between these groups (Lindner, Murphy, & Briers, 2001).

SPSS 16.0 was used to complete the statistical analysis of the data collected. For the personal data portion of the instrument, frequencies were reported. On the familiarity section of the instrument, grades and test scores, and leadership section of the instrument the mean and standard deviation were used to reflect how the principals perceived each statement.

### Findings

The majority of principals, 23 out of 32 respondents, reported serving as a principal between one and eleven years, and 29 out of 32 responded that the number of years that they had been at their respective schools was between one and seven years (Table 1).

Table 1

*Years of service*

	Less than 1 year	1-3 years	4-7 years	8-11 years	12-15 years	15 years or greater
How long ...						
...have you served as a principal?	2	12	9	8	0	1
...have you served as principal at the school you are currently at?	3	16	10	2	1	0
...has the current Agricultural Education teacher served at your school?	2	17	9	3	1	0

Over 60% of the principals were male and over 90% surveyed were an assistant principal before they became a principal. Over half of the principals were raised in a rural area and approximately 55% were between the age of 40 and 49. Twenty-one (64%) of the principals reported working less than six years with an agricultural education teacher and 94% reported enjoying their job as principal.

Ninety-four percent of the principals did not hold a degree in agricultural education, 79% were never in FFA, and over 75% did not have children that were involved with FFA (Table 2). Over half of the principals had participated as a member or volunteer of an agriculturally-related program excluding FFA, and nearly half had children that had participated as a member or volunteer in an agriculturally-related program excluding FFA.

Table 2

*Personal data of Georgia middle school principals*

	Yes	No
Do you hold a degree in Agricultural Education or a closely related field?	1	31
Were you ever a member of FFA?	6	26
Have your children ever been members of the FFA?	7	25
Have you ever participated as a member or volunteer in an agriculturally related program excluding FFA, 4-H or Georgia Young Farmers?	17	15
Have your children ever participated as a member or volunteer in an agriculturally related program excluding FFA, such as 4-H or Georgia Young Farmers?	16	16

For familiarity and the scales that follow, data were treated as interval, therefore, means and standard deviations were calculated for items on the survey.

According to the findings, principals were “familiar” with agricultural education. All but one of the statements had a mean response of 3.00 or greater indicating that the principals perceive the agricultural education program as being an important component of the local educational system (Table 3).

Table 3

*Principals' familiarity with agricultural education*

As a principal, I believe...	<i>M</i>	<i>SD</i>
the agricultural education program is an important part of the school.	3.65	0.47
the agricultural education program is an important part of the community.	3.62	0.54
the middle school agricultural education program provides equal opportunities for all middle school students.	3.56	0.56
I know the duties of an agricultural education teacher.	3.50	0.50
I recognize those students in the agricultural education program and FFA for their achievements, honors, and awards.	3.50	0.50
the middle school agricultural education program places enough emphasis on actual classroom teaching.	3.46	0.56
there are a number of agricultural education events, other than FFA	3.38	0.71

activities, outside of the classroom and laboratory that are co-curricular, such as field trips.

my attendance is important at agricultural education program activities and FFA events.	3.31	0.52
I place as much interest on the agricultural education program as I do other programs.	3.28	0.58
I know the duties of a FFA advisor.	3.25	0.62
I know what a CDE (Career Development Event) is.	3.00	0.96
I know what a SAE (Supervised Agricultural Experience) is.	2.93	0.93

*Note.* 4=strongly agree; 3=agree; 2=disagree; and 1=strongly disagree

Principals were asked to share their perceived knowledge of how agricultural education curriculum impacts their students' performance in math and science. The principals felt that the agricultural education curriculum positively impacted students' performance on both math and science – locally and with the state mandated Criterion-Referenced Competency Test (CRCT) (Table 4).

Table 4

*Principals' perceptions of agricultural education curriculum impact on students' science and math scores*

As a principal, I believe that as a result of being enrolled in the agricultural education program at my school, students' ...	<i>M</i>	<i>SD</i>
scores on the science portion of the CRCT are...	3.12	0.32
grades in science courses are...	3.12	0.32
scores on the math portion of the CRCT are...	3.06	0.34
grades in math courses are...	3.06	0.34

*Note.* 4=strongly positively impacted, 3=positively impacted, 2=negatively impacted, and 1=strongly negatively impacted.

Principals perceive their schools' agricultural education program as having a positive impact on their students' leadership skills (Table 5). Most importantly, they viewed the agricultural education program as having a positive impact on students' ability to set goals ( $M=3.56$ ,  $SD=0.50$ ), to have a positive self-concept ( $M=3.53$ ,  $SD=.50$ ), and problem solve ( $M=3.50$ ,  $SD=.50$ ). Following is the scale used to present the data in Table 5: 4=strongly agree; 3=agree; 2=disagree; and 1=strongly disagree.



Table 5

*Principal perceptions of how agricultural education impacts student leadership at their school*

As a principal, I believe that as a result of being enrolled in the agricultural education program at my school, students...	<i>M</i>	<i>SD</i>
can set goals.	3.56	0.50
have a positive self-concept.	3.53	0.50
can use information to solve problems.	3.50	0.50
can solve problems.	3.46	0.50
consider input from all group members.	3.40	0.55
respect others.	3.40	0.55
get along with others.	3.40	0.49
can delegate responsibility.	3.37	0.54
can listen effectively.	3.37	0.54
can consider alternatives.	3.37	0.54
exhibit more leadership skills than students that are not enrolled in the agricultural education program.	3.34	0.60
use rational thinking.	3.33	0.54
are open to change.	3.32	0.62

*Note.* 4=strongly agree, 3=agree, 2=disagree, and 1=strongly disagree.

When each construct of principal's perceptions of agricultural education is compared against each other, principals rated leadership development and general program familiarity higher than the impact of the program on academic areas such as math and science (Table 6).

Table 6

*Principals' familiarity with agricultural education, agricultural education's impact on student achievement in math and science, and student leadership attributes.*

Construct	<i>M</i>	<i>SD</i>
Familiarity	3.37	0.62
Math and Science	3.17	0.37
Leadership	3.40	0.54

### **Conclusions/Recommendations/Implications**

The results from this study are limited in terms of generalizability as this study is limited to only the state of Georgia and the respondents represent 45% of the total population of middle school principals in Georgia with agricultural education programs. Readers should take caution when interpreting the results of this study.

The majority of principals, 23 out of 32 respondents, reported serving as a principal between one and eleven years, and 29 out of 32 responded that the number of years that they had been at their respective schools was between one and seven years. Twenty-one (64%) of the principals reported working less than six years with an agricultural education teacher. Ninety-four percent of the principals did not hold a degree in agricultural education, 79% were never in FFA, and over 75% did not have children that were involved with FFA. Participants had very little experience with agricultural education (degrees, FFA, SAE), yet they were seemingly “familiar” with the program. With a constructivist theory base supporting the study, it was unexpected that the participants (with very little experience in agricultural education) would agree with nearly all of the familiarity statements. Perhaps administrators were hesitant to show ignorance of the program or maybe they felt it was their duty to report only positive statements in regards to the programs of which they are responsible. Researchers recommend future principal perception studies comparing perceptions of the agricultural education program to perceptions of other formal and non-formal activities. This would provide a better measure of what principals really know, understand, and appreciate about the program.

The theory base for this study (Gregory, 1980) stated that perception is reality. Overall, and without a comparison situation as described above, the principals perceived the agricultural education program as a positive component of their local school systems. Kalme and Dyer (2000) found similar results. The principals felt that the agricultural education program provides equal opportunities for all middle school students, assists students in building a cadre of leadership attributes, and places enough emphasis on actual classroom teaching. Interestingly, principals were least familiar with some of the most important program activities. Although principals reported agreement with understanding the duties of an FFA advisor, what a CDE is, and what an SAE is, these three important activities were rated the lowest. In addition to including comparison groups, perhaps future studies should interview principals to reach an even deeper understanding of their level of understanding of the program.

This research resulted in findings that were consistent with earlier studies (Hinkson & Kieth, 2000; Kalme & Dyer, 2000) that found administrators to have generally positive perceptions concerning agricultural education. Similarly, principals agreed that agricultural education

curriculum positively impacts a students' performance on both math and science, both locally and at the state level with the Criterion-Referenced Competency Test (CRCT). This finding is consistent with empirical results that have shown the benefits for students associated with contextualized instruction in mathematics through agricultural education (Parr, 2004; Parr, Edwards, and Leising, 2006; Young, Edwards, and Leising, 2009). However, the impact of math and science construct was the lowest. Furthermore, hovering around a mean of three out of a scale topping out at four hardly seems like a strong enough case for claiming that middle school principals have much respect for the impact of the agricultural education program on standardized tests. It is recommended that future studies identifying perceptions regarding the academic impact of the program employ a scale with greater opportunity for variance.

In addition to the aforementioned recommendations, replication of this perception study in Georgia and in other states should be conducted to improve the generalizability of the findings. Research should also be conducted to compare how Georgia middle school principals with and without agricultural education programs at their school perceive agricultural education.

Middle school principals also agreed that leadership development was taking place through the program. But again, comparison groups and interviews should be employed to determine a more accurate appraisal from administrators.

In terms of action steps to follow, an effort should be made to educate Georgia middle school principals with agricultural education programs at their school on the duties of a FFA advisor and the integral parts of agricultural education. An effort should also be made to further educate Georgia middle school principals with agricultural education programs at their school about the benefits of agricultural education.

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