

The Benefits and Barriers Toward Diversity Inclusion Regarding Agricultural Science Teachers in Texas Secondary Agricultural Education Programs

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This study analyzed Texas secondary agricultural education teachers' (n = 232) attitudes toward diversity inclusion in Texas secondary agricultural education programs. Using a web-based questionnaire, the researcher employed a nonproportional stratified random sampling technique. Researchers used descriptive statistics to report demographic and personal characteristics and mean scores to assess teachers' perceptions of the benefits of diversity inclusion, and perceptions of the barriers of diversity inclusion. Teachers agreed that: "educators, parents, and policymakers must develop strategies to address the different learning styles of all students;" "teachers should become familiar with students of color represented in their classrooms;" and "agricultural educators should increase recruitment efforts to promote diversity inclusion in secondary agricultural education programs."

Keywords: diversity; agricultural education; students with disabilities; inclusion; multicultural

Introduction

One goal outlined by *The National Strategic Plan and Action Agenda for Agricultural Education: Reinventing Agricultural Education for the Year 2020* is: "All students have access to seamless, lifelong instruction in agriculture, food, fiber and natural resource systems through a wide variety of delivery methods and educational settings" (National Council for Agricultural Education, 2000, p. 4). Although the profession has made conscious efforts to recruit and retain a diverse population within agricultural education, our ability to sustain a level advocated by other professions is mixed at best. From secondary school enrollments to faculty and staff positions at major colleges and universities, the agricultural education profession has failed to keep pace with the ever changing ethnic influx. Data on race/ethnicity

and gender show that 88% of all agricultural educators are White with almost 64% being White male and 24% being White female (Kantrovich, 2007). Although the demographics of agricultural educators have remained monochromatic, the push for diversity must continue.

Diversity has become progressively more reflective in public schools across the country. Across the United States, the population of students of color reached 30% in 1990, 39% in 2000, 44% in 2006 and will continue to increase throughout the 21st century (Hodgkinson, 1991, 2001; KewalRamani, Gilbertson, Fox, & Provasnik, 2007; National Center for Educational Statistics, 2008). Furthermore, Planty et al. (2009) found that roughly 24% of all public school students attended schools where the combined enrollment of students of

color was at least 75%, compared with 16% of public school students in 1990–91.

In a study concerning teacher perceptions involving inclusion in regular education classes, Finegan (2004) discovered that the majority of respondents favored additional training on working with students with disabilities. Wood (2007) noted teachers supported inclusion and preferred training sessions to assist them in developing positive strategies. Smith (2007) also found that teachers were open to the idea of receiving intensive training on teaching strategies used for students with disabilities.

Due to the dynamic shifts in education, the public school systems now are relying less on sorting students by specific labels and abilities. Because of this fact, agricultural educators are faced with an important task of providing effective instruction that will address every student in the classroom. This actuality leads us to the importance of diversity inclusion within secondary agricultural education programs.

Need for Diversity Inclusion

Diversity inclusion is an educational philosophy that welcomes all learners by engaging them actively in educational programs regardless of their race, ethnicity, or exceptionality. Diversity inclusion is also the act of acknowledging these differences and, in turn, fostering an atmosphere to teach every student in the classroom effectively. In a study of diversity inclusion of North Carolina secondary agricultural educators, Warren and Alston (2007) found that stakeholders, teachers, and students benefit from diversity inclusion in various ways. The researchers noted that diversity inclusion “broadens the perspectives of teachers and students, a characteristic that will be greatly needed...” (p. 76). Research exclusively on diversity has shown a positive impact on students' cognitive and personal development because diversity challenges stereotypes, broadens perspectives, and sharpens critical thinking skills (Banks, 2008). Diversity inclusion mirrors a practical, human development approach not only to the educational well-being but also social well-being that calls for more than removing the barriers or fears of a culturally responsive classroom. It requires dedication and action to bring about the conditions for diversity

inclusion, as other professions in our country have developed.

While students with disabilities and the special education curriculum continue to be the focal point of inclusion, in recent years, the term has been extended to include increased cultural/linguistic plurality, coupled with other dimensions along which people may differ (e.g., socioeconomic status, geographical influences, gender, religious sect, etc.) (Salend, 2008).

Conceptual Framework

Through a methodical review of literature, a conceptual model was developed (LaVergne, 2008) that postulates variables associated with culturally responsive teaching, diversity, and inclusion. This model incorporates Salend's (2008) principles of inclusion combined with Bank's (2008) dimensions of multicultural education. The last major component of this model centers around Gay's (2000) culturally responsive teaching which is the process by which educators use cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to foster more relevant and effective learning encounters. Through multicultural education, culturally responsive teaching is the medium by which diversity inclusion must take place. In order for agricultural educators to attain a diversity inclusive program, all three areas must be addressed.

The Diversity Inclusive Program Model (see Figure 1) is an illustration that supports the concept. Teachers and programs that exist within this area have positive perceptions about the benefits of diversity inclusion; they understand that, because of past perceptions, whether it be from students, teachers, or external factors (i.e., friends, co-workers, parents, etc.) pre-existing barriers may be the reasons why these particular students are underrepresented in agricultural education, and they have an awareness of possible solutions to increase underrepresented group participation in agricultural education. Teachers who are receptive to a diversity inclusive program have become allies to those who understand that the future success of agricultural education will be determined by how prepared agricultural educators are in teaching students of color and students with disabilities in our classrooms. The overarching

goal of the program model is to formulate an inclusive educational culture, classroom culture,

and all students being included in the program.

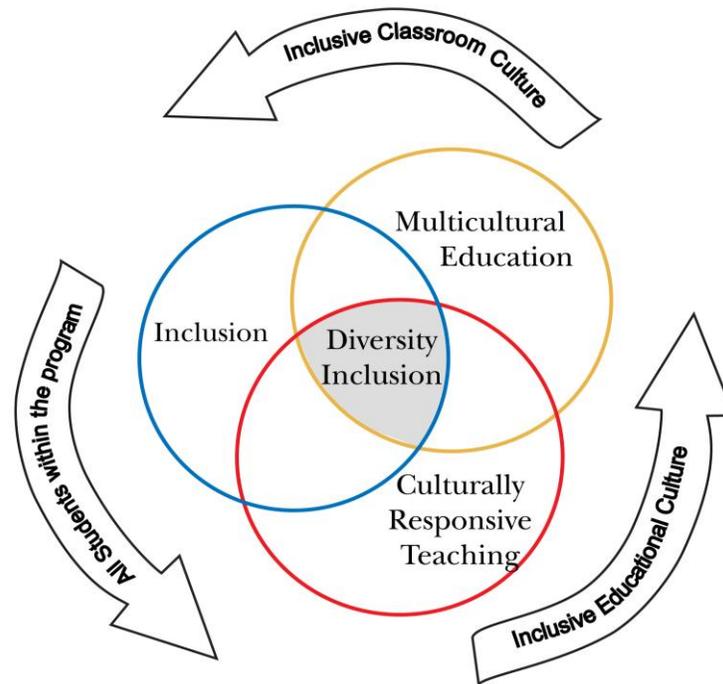


Figure 1. The Diversity Inclusive Program Model (LaVergne, 2008).

Purpose and Objectives

This study analyzed Texas secondary agricultural education teachers' perceptions toward diversity inclusion in Texas secondary agricultural education programs. The following objectives guided this study:

1. Describe Texas secondary agricultural education teachers' perceptions of the benefits of diversity inclusion in Texas secondary agricultural education programs;
2. Describe Texas secondary agricultural education teachers' perceptions of the barriers to diversity inclusion in Texas secondary agricultural education programs.

Methodology

Following Dillman's (2007) *Tailored Designed Method* for survey implementation, the researchers implemented a questionnaire

using a series of e-mails while using SurveyMonkey.com as the host Web site. The questionnaire was based on previous work by Warren and Alston (2007) concerning diversity and inclusion perceptions of North Carolina agricultural teachers. Researchers acquired permission to use and modify the instrument. Part 1 (*Benefits*) consisted of 12 statements designed to gauge participants' perceptions of diversity inclusion in secondary agricultural education programs; Part 2 (*Barriers*) contained 12 statements designed to measure participants' perceptions of the perceived barriers to diversity inclusion in secondary agricultural education programs; and part three consisted of eight items designed to collect demographic information on the agricultural teachers. A statistical factor analysis was not conducted. Rather, the factors were determined conceptually by the research team, based on the borrowed instrument. Individual statements were identified conceptually as contributing to the construct.

Then, Cronbach's alpha coefficient was calculated and reported to describe the internal consistency of the summated scales. The reliability analysis coefficients for the two constructs were *Benefits* = .75, and *Barriers* = .73. A panel of experts with expertise in diversity and inclusion established content validity. Construct validity confirmed that the questionnaire's scores actually reflect the conceptual area that it intended to measure. Evidence of construct validity was collected from the responses and suggestions from the panel of experts and from a pilot test of 15 agricultural teachers not included in the final survey population. The two groups provided input regarding the content and direction of the statements, which added to the precision and correct construction of the questionnaire.

The target population consisted of all Texas secondary agricultural teachers as listed by the Texas Education Agency during the 2006–2007 school year. Because of the unavailability of personal information from the Texas Education Association, access to all 1,732 agricultural education teachers listed by Texas Education Association was not feasible. The accessible population of the study consisted of all Texas secondary agricultural teachers who had email addresses listed on the JudgingCard.com Website ($N = 1,500$). To ensure that all 1,500 teachers listed on the website were agricultural science teachers in Texas, cross referencing was used with the Vocational Agriculture Teachers Association of Texas membership roster to ensure validity ($N = 1,500$). Using a sampling formula from Bartlett, Kotrlik and Higgins (2001), researchers used a nonproportional stratified random sample to ensure that all 10 administrative areas as defined by the Texas FFA Association would be represented proportionately in the study. Within each administrative area, researchers randomly selected 32 teachers ($n = 320$).

Participants received a pre-notice/introductory letter outlining the purpose of the study and informing them that they would

receive an e-mail in one week with instructions on how to complete the questionnaire online. From the preliminary e-mail, 31 e-mail addresses were invalid. To obtain valid e-mail addresses, the researchers searched district websites and contacted school personnel. After this update, another e-mail was sent, and the e-mail addresses were deemed valid. For the remainder of the data collection phase, the researchers sent reminder e-mails every Monday until the study was concluded. In order to address nonresponse error, the researchers compared respondents' questionnaire return rate prior to the closing date ($n = 195$) with respondents' questionnaire return rate after the closing date ($n = 37$) (Lindner, Murphy, & Briers, 2001). Using the cutoff date as the independent variable and mean scores as the dependent variable, independent sample t-tests revealed that no statistically significant difference ($p < .05$) existed between respondents' mean scores on the two constructs; therefore, the responding sample was deemed a representative sample of the accessible population. The final return rate was 72.5%

Results

The demographic characteristics gathered from the questionnaire are shown in Table 1. Of the respondents, 170 were male, while 45 were female. The majority (91%) of the respondents indicated that they were White/European American. Regarding teaching experience, 84 (39.1%) indicated that they had between 5 and 15 years of teaching experience. Sixty-eight participants (31.6%) indicated that they received some form of diversity/multicultural training during their undergraduate matriculation while 147 (68.4%) indicated that they did not. One hundred participants (46.5%) indicated that they received some form of diversity/multicultural education outside of a college/university requirement, while 115 participants (53.5%) indicated that they did not.

Table 1
Demographic Characteristics of Participants (n = 232)

	N	Percent
Gender ^a		
Male	170	79.1
Female	45	20.9
Race/Ethnicity ^b		
Black/African American	2	0.9
Hispanic/Latino American	13	6.2
Native American	4	1.9
White European American	191	91
Teaching Experience ^a		
< 5 years	48	22.3
5–15 years	84	39.1
16–25 years	51	23.7
25+ years	32	14.9
Preservice Training ^a		
Yes	68	31.6
No	147	68.4
Inservice Training ^a		
Yes	100	46.5
No	115	53.5

^a17 participants did not to respond to question. ^b22 participants did not respond to question.

Table 2 depicts the means and standard deviations for the perceived benefits of diversity inclusion as they relate to students of color and students with disabilities in agricultural education. Responses relating to the benefits of diversity inclusion among the school community and other programs across the state were reported. To facilitate reporting of the results, the researchers established a scale to guide the interpretation of the responses to the individual items. This scale coincided with the response categories provided to the participants (1.00 to 1.49 = Strongly Disagree; 1.50 to 2.49 = Disagree; 2.50 to 3.49 = Agree; and 3.50 to 4.00 = Strongly Agree). Respondents agreed on all statements regarding the benefits of diversity inclusion in agricultural education programs. With the exception of one statement (“Diversity inclusion can improve social relationships between students with and without disabilities in agricultural education”), items involving students with disabilities received lower mean scores than those involving students of color. The items on which participants scored the

highest mean score involving students of color was, “Providing students of color with leadership development opportunities will have a positive impact on agricultural education programs” ($M = 3.45$, $SD = .60$). The statement on which participants scored the highest mean score involving students with disabilities was, “Diversity inclusion can improve social relationships between students with and without disabilities in agricultural education” ($M = 3.39$, $SD = .57$). In relationship to diversity inclusion among the school and community, respondents agreed that “Diversity inclusion in agricultural education could have a positive impact on other programs across the state” ($M = 3.29$, $SD = .59$) and “The inclusion of diverse populations in agricultural education is a benefit for the entire school community” ($M = 3.46$, $SD = .57$). To summarize the information further regarding the perceptions of the benefits toward diversity inclusion, the researchers computed an overall mean score from the 12 items in the scale. The overall mean of the total group was 3.36 ($SD = .48$).

Table 2
Perceptions of Benefits Toward Diversity Inclusion (n = 232)

Diversity Inclusion	Item	M	SD
<i>Students of Color</i>			
	There are benefits for the inclusion of students of color in agricultural education programs.	3.42	.62
	Providing students of color with leadership development opportunities will have a positive impact on agricultural education programs.	3.45	.60
	Providing students of color with career success opportunities will have a positive impact on agricultural education programs.	3.42	.57
	Diversity inclusion can improve social relationships between White students and students of color in agricultural education.	3.38	.60
	I believe diversity inclusion helps students of color improve academically.	3.26	.61
<i>Students with Disabilities</i>			
	There are benefits for the inclusion of students with disabilities in agricultural education programs.	3.30	.56
	Providing students with disabilities with leadership development opportunities will have a positive impact on agricultural education programs.	3.33	.58
	Providing students with disabilities with career success opportunities will have a positive impact on agricultural education programs.	3.38	.58
	Diversity inclusion can improve social relationships between students with and without disabilities in agricultural education.	3.39	.57
	I believe diversity inclusion helps students with disabilities improve academically.	3.24	.58
<i>Diversity Inclusion in School and Community</i>			
	Diversity inclusion in my agricultural education program can have a positive impact on other programs across the state.	3.29	.59
	The inclusion of diverse populations in agricultural education is a benefit for the entire school community.	3.46	.57

Note. Scale: 1.00 to 1.49 = Strongly Disagree, 1.50 to 2.49 = Disagree, 2.50 to 3.49 = Agree, 3.50 to 4.00 = Strongly Agree.

Table 3 depicts the means and standard deviations for the perceived barriers to diversity inclusion in secondary agricultural education programs. The highest mean score for participants involving students of color was on the statement which read "Parental attitudes about agricultural education play an important role in students' of color decisions to enroll in agricultural education" ($M = 3.24$, $SD = .63$). The highest mean score for participants involving students with disabilities was on the

statement which read "A lack of role models hinders the participation of students with disabilities in agricultural education" ($M = 2.77$, $SD = .69$). The statements with which the respondents disagreed included: "Negative stereotypes are a primary reason why students with disabilities do not enroll in agricultural classes" ($M = 2.44$, $SD = .73$) and "Improper classroom modifications are a barrier to diversity inclusion for students with disabilities in agricultural education" ($M = 2.48$, $SD = .67$).

In relation to program and FFA demographics, respondents agreed that “The student demographics of my agricultural program reflect the demographics of my school” ($M = 3.03, SD = .77$) and “The student demographics of my FFA organization reflect the demographics of my school” ($M = 2.88, SD = .83$). Overall,

participants agreed with 10 items and disagreed with two items. To summarize the information further regarding the perceptions of the barriers toward diversity inclusion, the researchers computed an overall mean score from the 12 items in the scale. The overall mean of the total group was 2.82 ($SD = .38$).

Table 3
Perceived Barriers Toward Diversity Inclusion ($n = 232$)

Diversity Inclusion	Item	M	SD
<i>Students of Color</i>			
	A lack of role models hinders the participation of students of color in agricultural education.	2.96	.72
	Negative stereotypes are a primary reason why students of color do not enroll in agricultural classes.	2.79	.79
	The perception of agriculture itself influences the participation of students of color in agricultural education.	2.86	.66
	Acceptance by peers is a barrier to diversity inclusion by students of color in agricultural education.	2.91	.67
	The lack of information about agricultural education has an impact on students’ of color perceptions of agricultural education.	3.02	.66
	Parental attitudes about agricultural education play an important role in students’ of color decisions to enroll in agricultural education.	3.24	.63
<i>Students with Disabilities</i>			
	A lack of role models hinders the participation of students with disabilities in agricultural education.	2.77	.69
	Negative stereotypes are a primary reason why students with disabilities do not enroll in agricultural classes.	2.44	.73
	The perception of agriculture itself influences the participation of students with disabilities in agricultural education.	2.68	.66
	Improper classroom modifications are a barrier to diversity inclusion for students with disabilities in agricultural education.	2.48	.67
<i>FFA and Demographics</i>			
	The student demographics of my agricultural program reflect the demographics of my school.	3.03	.77
	The student demographics of my FFA organization reflect the demographics of my school.	2.88	.83

Note. Scale: 1.00 to 1.49 = Strongly Disagree, 1.50 to 2.49 = Disagree, 2.50 to 3.49 = Agree, 3.50 to 4.00 = Strongly Agree.

Conclusions

Based on the data analysis, the researchers found that respondents held positive perceptions toward the statements regarding the benefits of diversity inclusion in agricultural education

programs. Given this finding, deliberate efforts should be dedicated toward researching techniques and strategies that can encourage and promote a diversity of students into agricultural education. Although the *Benefits* scale focused on the impact on the program, it would be

irrational to discount its impact regarding the potential effect it may have on future students in agricultural education. As with previous studies involving diversity and inclusion, the attitudes of teachers play an important role in the success of a diversity inclusive program (Roberts et al., 2009; Warren & Alston, 2007).

Respondents agreed that a lack of role models hindered the participation of students of color and students with disabilities in agricultural education. In a study involving the recruitment of Hispanic students in agricultural education and FFA, Roberts et al. (2009) reported that “change agents” (i.e., an individual who influences others) were very instrumental in the success of increased student enrollment. Given this information, efforts to recruit role models that would change the perceptions students have about agricultural education would benefit the profession.

Respondents also believed that the lack of information about agricultural education has an impact on students of color perceptions of agricultural education. Considering this finding, agricultural educators should revisit their recruitment efforts and, in turn, develop strategies that would foster a greater opportunity for students of color to create a positive perception of agricultural education. This finding adds relevance to studies such as Warren and Alston (2007) and Roberts et al. (2009) which examine the link between teachers and students in relation to the recruitment of diverse populations in agricultural education. “Millions of students each year, from all ethnicities, are missing the numerous benefits provided through agricultural education and the FFA (Roberts et al., 2009, p. 70).

According to LaVergne (2008), because of the uniqueness of the profession, many agricultural teachers borrow and incorporate successful ideas gathered from their peers. If more agricultural teachers incorporate diversity initiatives, it’s a possibility that other agricultural education teachers will mimic their efforts.

Implications and Recommendations

Texas agricultural educators tended to have favorable attitudes toward diversity inclusion in secondary agricultural education programs. Based on these findings, efforts should be made

by agricultural teachers to ensure that students of color and students with disabilities are persuaded to enroll in agricultural education courses. As others have noted in previous studies (LaVergne, 2008; Talbert & Larke 1995), beginning agricultural courses such as *Introduction to Agricultural Science* (AGSC) 101 and 102 could provide excellent opportunities for students to be introduced to agricultural education. However, a review of research did not provide any indication that progress has been made in diversifying agricultural education courses or classrooms. On the other hand, research that focused on agricultural education program aspects such as the National FFA and total program recruitment (Gliem & Gliem, 2000; Roberts et al., 2009; Talbert & Balschweid, 2004) has yielded favorable research and program results. In order to understand fully the impact of agricultural education courses, research exclusively on their effects on student recruitment and retention is warranted. Research in a pretest–posttest research design (Gall, Gall, & Borg, 2007) possibly could determine the potential impact of these courses.

Additionally, recruitment efforts should be coordinated with school guidance counselors, principals, and other teachers to ensure that agricultural sciences courses are being promoted and offered to all students. Further research should be conducted to examine the effects of counselors’ perceptions of agricultural sciences courses at the secondary level as well as examining if the National FFA could utilize local chapters as recruitment tools for students of color and students with disabilities (Warren & Alston, 2007). If, as the findings of this study suggest, Texas secondary agricultural education teachers do favor diversity inclusion, then respondents should promote and encourage greater participation of diverse students into agricultural education programs.

The findings in this study reveal that most agricultural educators are not enrolling in diversity/multicultural courses in an undergraduate academic program. The high percentage of concurrence that diversity/multicultural training is not happening at the undergraduate level could indicate that many preservice teachers are not being prepared adequately to serve a diverse mixture of students in secondary agricultural programs. This finding

refutes the findings in a study by Talbert and Edwin (2008) that discovered many agricultural teacher education programs required diversity courses for their teacher education students. The discrepancy in findings may be caused by the large umbrella which the term “diversity” implies. However, the results of this study suggest that preservice teacher education programs need to incorporate a greater focus on the aspects of the courses that will provide preservice teachers with a holistic view of diversity/multicultural training at the undergraduate level. Data of demographic trends in public schools imply that this type of training is warranted. If agricultural educators are to stay abreast of the demographic shift occurring in public schools, diversity and multicultural education courses must be a vital part of the undergraduate curriculum. Future studies investigating the extent to which teacher preparation programs identify and address the

view of diversity and inclusion should be conducted.

The findings in this study reveal that Texas secondary agricultural education teachers agree that a lack of role models hindered the participation of students of color and students with disabilities in agricultural education. Given this fact and based upon previous research (Jones & Bowen, 1998; Osborne, 1994), agricultural educators should seek to identify diverse individuals from agricultural backgrounds to encourage underrepresented groups to enroll in agricultural education courses (Roberts et al., 2009). By demonstrating evidence of a collaborative, trusting, and respectful relationship with potential role models from underrepresented groups, Texas agricultural teachers may persuade students of color and students with disabilities to become engaged in secondary agricultural education programs.

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