

## **Obtaining Critical Mass for the 21st Century Agricultural Education Student: Perspectives of a Rural Secondary Minority Educator**

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### **Abstract**

*Obtaining critical mass within a larger population is instrumental for a diverse profession. The purpose of this individual case study was to investigate the experiences of a rural minority teacher of secondary agricultural education and interpret opportunities and limitations that exist for obtaining a critical mass. Five themes emerged during analysis: (a) teaching with passion results in modeling; (b) barriers limiting success; (c) embedded contextual frustrations; (d) willingness to obtain resources; and (e) active/non-active heterogeneity. Recommendations include critical examination of teacher certification exams, increasing ethnic minority representation on committees, showcasing ethnic minority teachers as models for recruitment, and increasing historical research about prominent minority agricultural educators.*

### **Introduction**

Preparing youth for a pluralistic world is critical for contemporary society. Several efforts have been made to improve educational equity over the last half century, including *Brown v. Board of Education*, the Equal Opportunity Act of 1964, and the No Child Left Behind of 2001. All were created to help the underrepresented succeed in the realm of education (Spring, 2007). Such legislative acts are to be applauded; however, Banks and Banks (2010) posit that the ability to understand cultural differences has greater impact toward improving schools, businesses, and society than acts of law. Outside the world of formal education, several Fortune 500 companies have changed their recruitment and management practices by including diverse methods of communication thus improving cultural understanding and change (Bartlett & Ghoshal, 1995). For example, PepsiCo changed the dynamics of corporate executives by expanding and hiring board of directors that reflect the cultural dynamic of their customer base; resulting in substantial growth in the corporation's stock and sales (Dallas, 2002). At the same time, their competitor, Coca-Cola, was unsuccessful in their diversity efforts, which reflected cultural trainings and professional sensitivity workshops for current employees. According to Bartlett and Ghoshal (1995), the key to PepsiCo's growth in sales stems from the hiring of a cultural mass that could relate and represent all stakeholders.

The need for cultural mass does not end with corporate industry. It infiltrates public education. More specifically, agricultural education has placed priority in the development of secondary and post-secondary programs, with a mission to serve all students. In fact, the American Association of Agricultural Educators professes student diversification as one of their primary goals. Within the organization's research agenda, it states, "[institute] highly effective educational programs that will meet the academic, career, and developmental needs of diverse learners in all settings and at all levels" (Doerfert, 2011, p 24). Questions may exist toward the significance or need for cultural understanding and diverse involvement within agricultural education, however, in truth, the cultural discrepancy between minority secondary students and their educators continues to widen. In fact, over the past five years, there has been a 50% decrease in the ethnic diversity of teachers entering the agriculture teacher profession (Kantrovich, 2007; Kantrovich, 2010).

This trend does not coincide with elementary and secondary education, where the number of minority teachers has doubled over the last decade (Ingersoll & May, 2011). Diminished interest in agricultural education among minority youth may serve as a sign that current methods of teacher training, recruitment, and cultural understanding at the secondary and post-secondary level are not working. In a study among secondary Texas agriculture teachers, LaVergne, Larke, Elbert, and Jones (2011) reported that White teachers supported serving diverse audiences, but lacked the understanding in doing so. Additionally, ethnic minorities did not enroll in agricultural education due to cultural misunderstandings (Dobbins, King, Fravel, Keels, & Covington, 2002; Vincent, Ball, Anderson, 2012). In each of the studies, it was determined that ethnic minorities were in need of agriculturalist who can serve as role models, specifically, those of the same ethnic origin. Ethnic minority role models currently exist in agricultural education; however, they were more prominent prior to the merger of New Farmers of America and the Future Farmers of America (Wakefield & Talbert, 2003). Since the merger, African American students enrolled in secondary agricultural education classes have substantially declined (Talbert & Larke, 1995; Wakefield & Talbert, 2003), more specifically, in the south (Bowen et al., 1991). Cultural role modeling can broaden the success of several agricultural education programs. In 2009, a team of scholars examined three, largely Hispanic, San Antonio high schools and found an increase in youth participation, academic enrollment, and parental participation when teachers exhibited high levels of cultural understanding (Roberts et al., 2009). Although the Robert's study was deemed successful, the population represented a small selected domain. These findings supports other studies that suggest recruitment of minority role models into a profession requires fewer resources than the overall development and retention of culturally competent teachers in a school of opposing cultures (Torres, Santos, Peck, & Cortes, 2004).

In regards to post-secondary student recruitment, agricultural education should be commended for their efforts examining best practices for recruiting ethnic minorities. In 2012, Vincent, Henry, and Anderson interviewed current pre-service agricultural education students who were Latino and African American. The researchers concluded that several factors would need to be addressed in order for participants to be attracted to a degree in agricultural education. These factors included altering minority youths' image of agriculture, validating parental support and providing the youth with culturally similar agricultural leaders. Vincent's et. al study confirms several findings over the last decade (Anderson & Kim, 2009; Esters & Bowen, 2004; Esters & Bowen, 2005; Jones & Larke, 2001). These perceived barriers provide great insight regarding the lack of diversity within the secondary teaching profession and the recommendation to address a new path in research. Recruitment efforts and strategies may be futile if there are larger explanations for the lack of practicing minority teachers. Are there culturally specific reasons for the decrease in minority educators? Should the profession be questioning why there has not been greater numbers of minority teachers from specific ethnic populations?

### ***Understanding and Obtaining Critical Mass***

A diminishing number of minority teachers entering the agricultural education profession over the last 50 years is evident. This phenomenon limits the availability of cultural role models for youth in the profession. Studies indicate that students benefit greatly with culturally similar role models, emphasizing the need for a greater number of teachers in from each ethnic population. The potential influence of a cultural mass of educators can best be explained through critical mass theory. Critical mass theory, an extension of the formal theory of collective action, was derived from the fields of sociology and economics. Social activist refer to critical mass as a designated threshold of participants who focus on a specific goal prior to implementing social movements. In social science, critical mass is defined as "a small segment of the population that chooses to make big contributions to the collective action, while the majority does little or nothing" (Oliver, Marwell, & Teixeira, 1985, p. 524). According to Oliver et al., (1985) critical mass plays different roles in producing different kinds of collective action.

Critical mass does not occur with an individual making an isolated, independent decision. For critical mass to occur, both dependent and independent variables are involved. Oliver et al. (1985) believed that critical mass predicts the probability, extent, and effectiveness of group action in pursuit of public good as collective action. The theory posits two independent variables that are important for the social process of collective action. The first variable is identified as a production function. The production function highlights the relationship between an individual's contributions and the achievement of common good (Markus, 1985). It is expressed in two forms decelerating and accelerating. In a decelerating production function, provided resources in the beginning have the biggest effect on achieving the public good, while the remaining provisional contributions are less effective.

In accelerating the production function, sequential resources generate large success, resulting in additional resources to follow (Oliver et al., 1985). Marwell, Oliver, and Pahl (1988) explain, in a mathematical method, how trends of clothing become fashionable through the accelerating production function. The impact of a clothing trend is more powerful with the increase of individuals participating. We identify the decelerating production function when discussion is impacted by one individual's discussion versus an abundance of different opinions.

The second independent variable is heterogeneity. Heterogeneity is a key to predicting the probability, extent, and effectiveness of critical mass. It is also expressed in two forms, the heterogeneity of resources and the heterogeneity of interest. The heterogeneity of resources and interest affect the level of action from a group to obtain critical mass (Oliver et al., 1985). The heterogeneity of interest is the values different individuals place on public good while the heterogeneity of resources are what individuals must contribute to achieve it (Markus, 1985). In a study that reviewed the impact three urban schools had following a resource sponsorship from a corporate donor, Roberts et al. (2009) discovered the impact was minimal until the interest and resources were obtained within the teachers and community. Hardin (1982) believed that political processes tend to produce goods that mainly benefit wealthier people, but if the resources were shifted, critical mass could be obtained among minority groups.

According to multicultural research, 30% is considered the critical mass needed to obtain minority representation (Abreu, Chung, & Atkinson, 2000). In this study, we explore areas for further research and practice that we hope will provide a framework for creating a critical mass of African American teachers. We realize there are cultural nuances for each cultural group; therefore, we began with African American teachers as they represent the largest minority representation over the past 50 years. However, even within the African American population a critical mass has never existed in agricultural education. In order to begin our exploration a single case study was utilized to explore the presence, or absence, of the dependent and independent variables of critical mass theory. Thus, this study seeks to investigate the experiences of a rural minority teacher of secondary agricultural education and interpret opportunities and limitations that exist for obtaining a critical mass of minority teachers. Although, this is a modern approach to qualitative research, Merriam (1997) and Schwandt (2007) posit that theory use in qualitative research does not always have a solid relationship. Denzin and Lincoln (2005) believed that research paradigms equate with theory and bear the researcher's methodological premises, which set the idea, framework, questions, and/or the data analysis.

### ***Methods and Procedures***

A qualitative case study was implemented in order to obtain detailed information regarding individual beliefs in creating a critical mass of minority representation within secondary agricultural education. Case studies evaluate the uniqueness or complexity of a certain event situation or phenomena (Yin, 2009). Typically, a qualitative study ranges between one and twenty students (Creswell, 1998). The researchers purposefully selected the participant due to his distinct situation; he is an African American male who teaches secondary agricultural education teacher in a poor, rural area of a southern state. In addition, the school had an enrollment that varied in ethnicity with the majority qualifying for free/reduced lunch. This purposeful selection technique is used in case study research (Creswell, 1998). Yin (2009) maintains that single case studies are relevant for critical cases in order to test theory, or to analyze cases that may be extreme, typical, revelatory or longitudinal. Permission for conducting the study was granted by IRB and participant.

### ***Participant Selection***

One participant was selected for this bound case study. Case study research is not sampling research; however, selecting a case must be done so to maximize what can be learned (Stake, 1995). An established criterion was developed by the researchers to purposefully select a qualified participant. Qualifications set by the researchers consisted of secondary agriculture teacher of 20+ years; teaching in school where a critical mass of minority enrollment existed; the place of employment was designated a rural area by the United States Department of Agriculture; identified as a highly qualified teacher; willing to participate for the entirety of the study; and serves as a model citizen in the rural community. The total number of school and community organizations determined the model citizen. The researchers utilized/contacted state teacher directories, state teaching staff, district administration, and school enrollment percentages to determine qualified participants. Only eleven qualified, ethnic minority teachers were discovered in eight states, but only two participants were willing to donate the time requested.

One of the two participants removed himself from the study because of a lack of participation support from the administration. The selected participant met each qualification and volunteered to participate in this descriptive, exploratory study. The participant was nearing retirement yet was the youngest African American agriculture teacher in his state. The participant was in a single teacher program and received a traditional certification to teach agriculture from an 1890 institution. The teacher had received recognition for his continued contribution to the agriculture community. Prior to the hiring of the participant, the school was questioning the option of program elimination, but he brought stability and growth. The participant provided students with the opportunity to excel in the agricultural mechanics and animal science disciplines. His work with the agriculture program and youth was recognized as a Teacher of the Year honor in the district. At the time of this study, the participant advised a youth organization that was recognized as one of the top five chapters in community service hours in the state. Because of his work as a classroom teacher, other schools were contacting him for employment.

### ***Procedures***

Researchers focused on obtaining professional and contextual information regarding the participant's historical and contemporary life to help explain possible opportunities in obtaining critical mass. As the researchers had no prior interaction with the participant, or conceptual understanding of life as an African American agricultural education teacher in the rural south, formal interview protocol was deemed inappropriate. Therefore, an informal conversational interview was conducted to allow for flexibility. Informal conversational interviews offer maximum flexibility when pursuing information pertaining to an individual's life (Patton, 2002). The questions utilized were semi-structured in order to meet the needs of the research objectives. During interviews, which by nature are open-ended, the subject's schedule must dictate the activity (Stake, 1995). The interview began at 8:00 AM and concluded at 11:00 PM, with a follow-up breakfast discussion the next morning; a total of 15 hours. The environment of the interview took place at the participant's school and home. The case must always have boundaries (Stake, 1995). One researcher moderated the question and interview session and visit, while the other researcher served as a reviewer, after the fact. Throughout the interview, the researcher noted comments made by nearby individuals; attitudes or reactions from the participant; personal reactions to comments; and the environments' surroundings. The participant's responses were digitally recorded and transcribed for analysis. In addition, the moderating researcher contacted additional individuals to support, confirm, or further expand upon the experiences/stories provided in this case.

### ***Data Analysis***

Data, from the case study, were drawn from multiple sources: a personal interview with the moderating researcher; conversations with enrolled students of the participant's class; and images taken from the classroom, shop, cafeteria, and school hallways. In order to add texture, depth, and multiple insights to the analysis for the enhancement of validity and credibility to the results, triangulation occurred through multiple data points. This data consisted of observation of field notes from the time at the school, moderating researcher's reflections, and interview transcriptions. The participant granted the researchers permission to contact the school administrator in order to confirm some of the findings and stories. To establish inter-rater reliability, data were analyzed separately by both researchers. This process revealed thematic responses surrounding each code. The researchers then axial coded thematic responses to develop assertions (Denzin & Lincoln, 2005; Patton, 2002). In order to maintain the confidentiality of the participant, the alias, Mr. M was utilized throughout the findings.

### ***Trustworthiness***

The researchers' independently coded data then compared results to enhance inter-rater reliability, enhancing thematic credibility (Saldaña, 2009). Furthermore, researchers provided the participant with the findings and asked for a confirmation/approval of the results establishing data confirmability (Denzin & Lincoln, 2005). The interview was audio recorded and transcribed verbatim. Additionally, follow-up phone call was conducted for content verification. Lastly, findings and conclusions were sent to the participant for validation. Credibility of the data was established through the use of reference materials, peer debriefing, and member checking. Peer debriefing was established from an outside source throughout the data collection and researchers' coding process.

### ***Bracketing***

Identification of research bias assists in establishing data confirmability and objectivity (Denzin & Lincoln, 2005). The researchers were each secondary agriculture teachers and both are involved in teacher education.

One researcher taught secondary agriculture in the south and the other in the Midwest. Both taught in secondary agriculture programs with a high ethnic minority enrollment and each share a common interest in the recruitment and retention of quality minority teachers. The researchers made every attempt to minimize the influence that their secondary teaching experience played in the interaction, interviews, and observations by triangulating the data and noting personal biases. In addition to the participant interviewed, a reflective journal was maintained by the moderating researcher to describe personal interactions and bring research biases to light.

### **Findings**

Research question one sought to describe how the participant contribute to the common good. For this objective, the theme of passion for teaching and students emerged.

#### **Theme 1: Teaching with Conviction Results in Modeling**

Through a day of observations and interviewing, the participant modeled himself by displaying a passion for agriculture, community, and students. The moderating researcher noted in a reflective journal that on numerous occasions the interview was interrupted for students who sought personal and academic advice from Mr. M. Furthermore, while observing the participant, the moderating researcher was stopped by a student who was enrolled in an agricultural mechanics course, yet had a career interest in interior design. The student said, "I am in this class because Mr. M is the only teacher who I can relate to and will listen to me if I have a problem. He is for real." At one point, the moderating researcher wrote the succeeding while following Mr. M down the hallway to the lunchroom, "I am so impressed by how he [Mr. M] takes the time to say hello and take an interest in each of his students on the way to lunch. If he finishes his meal in the small allotment of time, it will be a miracle."

The passion for his students was evident. In class, the moderating researcher observed Mr. M work with students, individually, as they worked on their welding projects. At various times, he would examine the student's work, reflect on their progress, and would always end with a pat on the back. The modifying researcher even reflected, "The rapport Mr. M has with his students is amazing. I observed a young man come to him regarding his progression on the welding project. Mr. M gave him advice, joked about his mistakes, and then told him he was happy to see his growth. The young man smiled as he walked back to his welding booth. I was so shocked to see the relationship between Mr. M and the young man, who was wearing a hat and belt buckle that had the embroidering of the rebel flag of the confederacy. This did not seem to bother Mr. M and his work to help this student." On numerous occasions, Mr. M would explain the background of a particular student along with the community they resided in.

The passion noted in theme one reflects an excitement to share with others about agriculture and exhibited pride in teaching agriculture. Throughout the coding process, the researchers identified elements where the participant defended agriculture among naysayers and would attempt to showcase the opportunities that students could receive by enrolling in an agriculture course. This excitement did not stop within the walls of the school. Among the community, Mr. M believed that he was respected among agriculturalist and was sought for agriculture advice. His passion was towards helping a community through agricultural education and if he felt this was accomplished, it would be time to extend his resources to a community in need. It was noted in conversations with Mr. M that this attempt to help a community was sought in other professional careers, only agricultural education provided that personal fulfillment. Prior to teaching, Mr. M was employed by the health department to assist and visit rural African American families with the necessary safety requirements for their homes. Although a passion for agriculture and the program was found, it should be noted that no evidence in promoting agricultural education as a career was identified on the walls, in conversation, nor in lecture. The moderating researcher asked the Mr. M if he had ever had a student go on to become an agriculture teacher. His response was, "I have had several go on and become teachers, and recognized me as their reason, but none who wanted to teach agriculture. But I think that would be different if our school was closer to a college that offered agricultural education." Mr. M's passion for agriculture was evident in the numerous local boards that he served on. During the moderating researcher's stay, he displayed the reminders he had for upcoming meetings – Extension board, small grain growers, Co-op, and the local fair board. To further expand Mr. M's passion, permission was granted to the moderating researcher to contact members of the advisory board. During an interview with a local business owner of an agricultural parts store, the manager said, "I never have to worry about the quality of employer that Mr. M sends me. They are diligent, they are hard working, and they know their stuff. That's all I ask for."

The owner of this parts store showcases Mr. M's passion for his students, but also his passion for helping the agriculture community. Due to the passion expressed by the participant, further evidence toward agriculture, the community, and his students were noted through student actions and responses (see Table 1). Although Mr. M's passion is reflected in teachers of all ethnicities, it displays that passion is necessary as a production function toward the common good, which in this case would be the obtainment of critical mass (Markus, 1985).

**Table 1: Identified Teaching with Conviction Results in Modeling Sub-themes**

Passion Sub-Themes	Quotations from Mr. M
Passion for Agriculture	<p>"I try to promote the program from within and then broadcast it out in the school announcement."</p> <p>"Often I have to defend my program and my profession to other teachers in the school. Many of the teachers who will question the existence of agricultural education will hear my staple response of my profession is Agriculture and I hold that as you (to teachers in the school) hold your profession of being an (selected content area) teacher."</p> <p>When asked how he recruits students into the program that does not have a background in agriculture - "I try to let them (students) know that if they are going to enroll in here, I am not going to enroll them as a farmer but as a student who is a part of the largest industry in the world."</p>
Passion for Community	<p>In response as to who in the agriculture community turns to him for advice in agriculture - "Smaller farmers like the ones that have cattle, hay, and row crops come into contact with me and respect what I do, and/or my opinion, on the product their growing or producing."</p> <p>"If I want to continue to teach and help through agriculture, I need to go to another school district that has a weaker program that needs to be built up, and I can do that."</p>
Passion for Students	<p>"When I see the kids, I try to encourage them to participate in this program and enroll in my courses and that the opportunities out there for them if they enroll. I know if I can help them, if they enroll."</p> <p>"I always wanted to teach and it wasn't particularly where I wanted to teach, I just wanted to teach kids – teach kids about agriculture and learn to respect the field."</p> <p>"When I have a battle, it is because something has been said that has offended me, my program, or my kids and I pick my battles accordingly." The comment was made prior to a series of stories where Mr. M defended his kids during a time of controversy.</p>

The second research question sought to describe the limitations that exist for a minority teacher, based upon Mr. M that may restrict the obtainment of critical mass. For this objective, two themes emerged resulting in the internal barriers and the embedded contextual frustrations.

### **Theme 2: Barriers that Limit Success**

Difficulties were discovered that limited the spread of success across the particular state that Mr. M resided in. Professional barriers have existed throughout the participant's teaching career. These barriers limit the participant's exposure among colleagues at the state level. Limitations to serve on committees and feelings of being ignored were described as reasons why no ethnic minorities were members of the state's agriculture teacher association. In addition, acts of poor communication skills from White colleagues discouraged opportunities for youth to participate in events through the FFA. To further support the feelings of limitations, the moderating researcher met with a White agriculture teacher north of the community Mr. M taught in and he provided the following statement. "Since I live and teach in this area of the state, I understand the dynamic of the kids and the limitations of our programs. I also, notice how our profession ignores the teachers in this district. Although, I am White, I too feel ignored, but I notice that the African American agriculture teachers are not even acknowledged. It is sad. As a result, I will forward them, and sometimes call, to let them know of votes, decisions, and dates that could effect their kids." Mr. M received his degree certification in agricultural education from an 1890 land grant institution, a university designed for advancement of southern minority students. However, that institution no longer provides a degree in agricultural education nor a service for agriculture teachers.

Further institutional barriers noted were the implementation of standardized assessments for obtaining professional certification to teach. Mr. M believed that these were written with scenarios that a poor, minority student would not be able to relate to, therefore limiting the opportunity to pass such exams.

As Mr. M began to explain the limitations, it was noted that he asked to take a break because of his disposition. See Table 2 for examples of barriers that limit success.

**Table 2: Identified Barriers that Limit Success Sub-themes**

Sub-themes	Quotations from Mr. M
Professional Barriers	<p>“I am not affiliated with a professional organization within Ag. Ed. for several reasons. When you are in an environment like that, my opinion and what I think how things should be done, is not accepted as a White male in that same organization.”</p> <p>“There is a distance of communication, fellowship and hanging out. You have five to ten blacks who are employed now and the Whites will be distant from you. They rarely hold a conversation with you.”</p> <p>“While at state convention, my female students were placed with another chapter for chaperone reasons and a female teacher made racial remarks to my students. The teacher made racial remarks, and then her students did. Now my students do not want to attend the convention.”</p>
Institutional Barriers	<p>“...they (the 1890 institution) have lost their Ag. Ed. program, but I do not know why or how. But I do not think I would have been brave enough at 18 to attend the University of [STATE] because of the lack of Black students.”</p> <p>After taking the teacher exam while in college - “Well I refused to do it (take the teacher certification examination) because I was naïve and did not understand, and guess in some aspects, afraid. I never liked standardized tests”</p> <p>After taking the teacher exam at a later age - “I think I took the teacher exam two times cause I did not pass the first one and did all this in twelve months. The exam is difficult for a youth who are poor and Black.”</p>

### Theme 3: Embedded Contextual Frustrations

Limitations existed in the embedded contextual areas of political and geographical. Political frustrations derive from federal, state, and local individuals who play a role in the overall progress of economic growth. Political movements limited Mr. M to showcase his students at a state and national level. It was noted in the researcher notes that the participant had pointed out that all of the competitive events within his youth organization were moved to a location on the opposite end of the state. The decision was voted on and approved by the officers of the [STATE]’s teachers association. Prior to the movement, half of the events were shared in two geographical regions of the state. One area was within an hour of Mr. M’s school as well as the majority of poor minority youth in the state. The cost of travel to the current location for state competitions was too much of an annual burden for the school district. Therefore, Mr. M could only bring students to the state competition on an every other year basis and had not attended the national convention since the vote. The financial burden was supported by the school administrator and was documented from the time of the state association’s decision. Later, the modifying researcher contacted the association president, from the time of the vote, regarding the intentions of the vote to move the competitions. His response was, “Well, the area where the competitions were being held, our students did not feel safe. Therefore, we voted to move the competitions to a location that was considered safer.” The competitions were held at an 1890 land-grant institution in the central part of the state and moved to the 1862 land-grant institution. When confronted with this information, Mr. M was upset - explaining that he would trust his daughter on the campus of the institution and was willing to compare the number of annual crimes committed at each institution. In addition to political movements, geography limited the participant’s opportunity to showcase the benefits of agriculture. As an African American teacher in the rural south, minority roles and economic opportunities are minimal, while racism toward the advancement of minorities was still high. These movements and the geography played a role in the struggles that the participant faced in order to provide students with agricultural opportunities. The modifying researcher reflected later that evening, “I will never forget the look on his face when his sons arrived home from their after school job. He told them dinner was in the fridge and asked if they had any homework. He followed them into their rooms to ask about their day. When he returned, he shook his head and told me that because he lived in the south, he knew his sons were limited to fast food jobs.

He showed signs of anger when he explained that neither could receive a job at the local electric coop after applying year after year and watching their White friends receive the summer job that paid exponentially well. I feel helpless.”

**Table 3: Identified Embedded Contextual Frustrations Sub-themes**

Sub-themes	Quotations from Mr. M
Political	<p>“Our mayor said that as long as he was mayor, no one will be paid here over minimum wage in the town. I swear these words were said. So with that attitude, things probably will never change here.”</p> <p>“You’ve got access to the river, you’ve got access to the interstate, and you’ve got access to major roads but, I honestly believe that the reason why this area has not been as blessed, is because of the large amounts of minorities that lives here.”</p>
Geographical	<p>“Now this area has a high KKK activity. Matter of fact, they had a rally here three months ago downtown in front of the courthouse.”</p> <p>“In my situation, and I think that it is true for the majority of these people, first of all its family. This is where our family was born, raised, and stayed most their life. Some as far back as great grandparents, maybe even slavery, and then secondly the cost of relocating. These two things keep us in the South.”</p>

The final research question sought to describe a possible phenomenon for obtaining critical mass, as described by the participant. Two themes emerged from the research question: willingness to obtain resources and active/non-active heterogeneity.

#### **Theme 4: Willingness to Obtain Resources**

Throughout the interview and observations, Mr. M provided evidence of work ethic toward improving his program at the classroom, youth organization, and overall programmatic level. Evidence of the effort was noted in the participant’s volunteer service on community meetings and serving as a pilot to newly implemented programs in the school and state (see Table 4). During an observation, the participant showcased the students’ success in community service on a new record keeping system that was adopted by state staff for agricultural education students. Mr. M was proud of the new record keeping success and showed excitement as he demonstrated its use. The moderating researcher noted that because of the participant’s willingness to understand the computer software, the students enrolled in the program were currently 2<sup>nd</sup> in the state for community service hours. Mr. M knew that at one point his organization’s national affiliate offered a contest for students and teachers who were promoting diversity. After asking the moderating researcher if he could receive information and help in completing the award application, Mr. M showed disgust and disappointment, when it was relayed that the national affiliate had ended the event. “At that point in time, I wanted to contact the organization’s headquarters myself and say ‘Look at what you’re missing!’ Informing him that the contest did not exist was the most difficult comment I had to make today” – from the reflective journal of the moderating researcher.

**Table 4: Evidence of Theme 4: Willingness to Obtain Resources**

Quotations from Mr. M
<p>“I engage in activities that have been presented to me through workshops, such as brain compatible lesson plans, to engage in current activities or current events and current programs that you see on T.V. I do this to enhance my level of instruction to my students.”</p> <p>“There are other organizations such as the county agent and the farmer’s coop. We work together and serve on each other’s committees in order to incorporate things that will enhance this program.”</p> <p>“I currently serve on a panel of farmers that work on the professional growth of agriculture in the town. I believe there are only two of us on this committee and I do give my opinion on the topic, whether it is heard or not.”</p>

#### **Theme 5: Active/non-active heterogeneity**

On different occasions, the researcher noted where the participant received support from the dominant culture (active). However, situations were also observed where Mr. M would not seek support from the dominant culture (non-active). Active heterogeneity provides evidence of actions that support the career obtainment or the career growth of the participant; while non-active findings showcase areas where the dominant ethnic culture has yet to build rapport and trust.

The example provided, in Table 5, for non-active showcases that Mr. M has not gained trust among his colleagues, of the dominant race, in order to discuss, handle, or manage racial issues that may arise. In this situation, he yields back to his comfort zone or to allied organizations to seek further guidance.

**Table 5: Identified Heterogeneity Sub-themes**

Sub-themes	Quotations from Mr. M
Active	This is the thing that the superintendent at the time told me – Mr. M, from what you are telling me, the degree you have and your background, it seems like all you need is a teaching certificate. You need to find out what you need to do to get a teaching certificate. You need to get you a teaching certificate and come back to me and I'll give you a job.”
Non-active	“If an African American was talking about something that affects their race, I guess I would have to report that to the proper authorities whether it was NAACP, EEOC or may just give them advice if they want to talk to me about it.”

### ***Conclusions, Implications, & Recommendations***

Representation is necessary in order for a profession to obtain pluralism. This study is explorative in nature and limitations do exist, therefore, replication at a larger scale should be implemented in order to increase the validation beyond the scope of the single participant. Nevertheless, the findings from this study begins a discussion for future research and a potential new path for agricultural education to gain a critical mass of minority teachers to meet the cultural and ethnical needs of future youth (Talbert & Larke, 1995). Teaching with passion results in modeling was identified as a theme from the findings. Because of a passion for agriculture, community, and students, Mr. M had increased support and respect among community and school stakeholders. This line of passion could serve as a contributor toward meeting a critical mass. Research supports that passion from the minority, in regards to their career, is crucial in obtaining a critical mass (Cuny & Aspray, 2000), however, the passion must be expressed from the dominant culture as well. The passion exemplified is identified in the theory of critical mass as homogeneity of interest (Oliver, et al., 1985). It is recommended that Mr. M's utilize his passion toward promoting careers in agricultural education among his African American youth. In addition, minority teachers of agricultural education are encouraged to showcase their passion for teaching by promoting the profession to their minority students. Banks and Banks (2010) believed that minority teachers are one of the highest respected professionals in the African American and Hispanic communities. Although that may be the case, a study by Ogbu (1990) explains that minority teachers sometimes believe they are not a motivating force in the obtainment of critical mass. Therefore, it is recommended, that additional research seek to determine if minority agriculture teachers are encouraging minority students to teach agriculture. In addition, agriculture teacher educators are encouraged to utilize minority teachers as guest speakers among young student populations that enhance the opportunity to attract minority students into the profession.

The researchers understand that this is a single case study. Therefore, additional research should explore if this same style of passion is expressed among other minority secondary teachers that represent an ethnicity identified as a minority. The professional and institutional barriers discovered could limit the future obtainment of critical mass. Each barrier limited Mr. M's opportunity to extend his passion beyond the realm of the school and/or community. Institutional prejudice from leadership in teacher organizations and poor communication among multi-cultures was to attribute, according to the participant. Further exploration of similar barriers, among rural minority secondary agriculture teachers is recommended. The discouragement that Mr. M explained limited him and other minority teachers from taking leadership roles in their area and minimized the opportunity for youth to participate in events through the his youth organization. The lack of student exposure limits the effectiveness in obtaining critical mass. Additional research should explore if standardized assessments limits African American, as well as other ethnicities, from obtaining teacher certification. According to research, most minorities currently obtain certification through an emergency route (Peterson & Nadler, 2009). This study is limited to a single case study, but within it the researchers found that embedded contextual frustrations exist within the realm that was political and geographical. Political, bureaucratic, and structural factors are important deterrents of diversity (Fryar & Hawes, 2011). Therefore, it is recommended that teachers be more cognizant of the political biases that take place within their teacher association/unions.

In addition, these groups should increase their awareness of how institutional prejudice affects minority youth and school districts in regards to their location in the state (Phillips, 2011). Although the geography was described as a limitation for the participant, it serves as a recommendation for teacher educators to capitalize on youth who intend to live in similar environment as their hometown. Before critical mass can be obtained, the minority must have a desire, work ethic and vision to improve them, first. Evidence in the findings suggests that this participant puts-forth the effort to improve the classroom instruction and the future of a career and technical education program. When the effort is being provided through a willingness to obtain resources, it becomes the responsibility of the dominant group to provide the resources to reach critical mass (Oliver et al., 1985). Therefore, this single case study provides evidence that additional research is recommended to see if willingness to obtain resources is accurate among other minority teachers of agriculture. Action was made by the dominant ethnicity to provide resources toward the participant - a career opportunity (Esters & Bowen, 2004). This implies that active encouragement serves as a catalyst for the participant to complete the teaching certification. Previous research agrees that if an opportunity for career obtainment is foreseen, than a minority student is more likely to pursue the degree (Vincent, Ball, & Anderson, 2010). Future historical research in secondary education should include teaching leaders that represent ethnic minority groups. Such research would provide relevant ethnic role models and inspiring leaders towards the recruitment of future educators (Goldhaber & Hansen, 2010; Warren & Alston, 2007).

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