

Agricultural Education in an Urban Charter School: Perspectives and Challenges

Kesha A. Henry¹, Brian Allen Talbert², and Pamala V. Morris³

Abstract

Urban school districts are viable recruitment sources for higher education in agriculture and have the ability to play a significant role in efforts to increase agricultural education program numbers at the secondary level. Secondary school increases should lead to growth in agricultural college enrollments across the country. Increasing agricultural literacy and overall enrollment at the collegiate level provides opportunities to increase minority populations pursuing higher education and careers in agriculture. Social Cognitive Career Theory (SCCT) drove this study with qualitative methods used to explore instructional perspectives of three adults associated with the agricultural education program at an urban charter school. A phenomenological approach guided collection of qualitative data. Consensus was reported through participant belief that inclusion of agricultural education courses into curricula played a major role in breaking students' stereotypes regarding agricultural careers and higher education opportunities. Although participants believed agricultural education vital to instruction, challenges to teaching agricultural education in urban schools led them to focus on STEM related agricultural careers as opposed to agricultural production careers.

Keywords: agricultural literacy, agricultural education

The past two decades have shown increased interest from communities for programming in urban agricultural education. Although urban agricultural education program development is not a new concept nationwide, heightened interest has pulled it to the forefront of discussions among agricultural educators and stakeholders (Brown & Kelsey, 2013; Nelson, 2002; Russell & Trede, 1999). Expansion of high school agricultural education programs in urban areas, including non-traditional urban high schools, provides multiple benefits to students and the future of agriculture in general. Tarpley & Miller (2004) reported that one way to address a growing need to diversify collegiate student recruitment pools is through recruitment of students from urban schools. In turn, this expansion of agricultural education programs in urban schools can serve to promote agricultural literacy among entire urban populations (Warner, 2006). Agricultural literacy throughout communities is critical in today's society due to increasing demand for competent knowledgeable workers in agricultural, food and natural resources industries (Borck & Bell, 2010; Bowen, 2002; Warner & Washburn, 2007).

¹ Kesha A. Henry is currently an independent educational consultant. Email: kahenry06@gmail.com.

² Brian Allen Talbert is Professor, Department of Youth Development and Agricultural Education, Purdue University College of Agriculture, 615 W. State St., West Lafayette, Indiana 47907-2053 USA Phone: 765-494-7316, Email: btalbert@purdue.edu.

³ Pamala V. Morris is currently an Assistant Dean/Director of the Office of Multicultural Programs and an Associate Professor for the Department of Youth Development and Agricultural Education, in the College of Agriculture at Purdue University, 715 West State Street, David C. Pfindler Hall, Room 108 West Lafayette, IN 47907-2053 USA, (765) 494-8396, Email: pmorris@purdue.edu.

The National Council for Agricultural Education (NCAE) established a target goal of increasing agricultural education programs to 10,000 by the year 2015. By including agricultural education courses in non-traditional urban high schools' curricula (Warner & Washburn, 2007) the attainment of this goal could be advanced. Talbert et al. (1997) suggested higher education institutions, particularly colleges of agriculture, should aim to expand recruitment efforts to include underrepresented students. Urban school districts provide opportunities for an increased applicant pool with larger populations of students from diverse ethnic backgrounds. Expansion and development of urban secondary agricultural education programs would significantly increase agricultural awareness among urban students and in turn recruitment opportunities for higher education.

One non-traditional urban high school gaining in popularity is charter schools. Charter schools typically have more flexibility in curricula and structure, providing the possibility to contribute significantly to the NCAE's goal of increasing agricultural education programs. Charter schools are public schools independent of traditional school districts, given greater freedom to operate (National Charter Schools Resource Center, 2013). Charter schools are widespread, with 40 states and the District of Columbia having charter school laws with more than 5,000 charter schools operating as of 2011 (Keaton, 2012).

Previous research has examined issues relative to urban agricultural education however; more research at the secondary level is needed (Esters, 2007; Pense et al., 2006; Talbert, 1999). Multiple studies have highlighted socio-cultural factors such as influences from parents, peers and persons close to students that affect enrollment in secondary agricultural education programs (Hoover & Scanlon, 1991; Marshall, Herring, & Briers, 1992; Reis & Kahler, 1997; Sutphin & Newsom-Stewart, 1995; Talbert & Larke, 1995). Additionally, Borck and Bell (2010) identified marketing as a vital component for consideration when developing successful urban agricultural education programs. However, research is needed to explore what effect curriculum plays in enrollment and how the curriculum should be marketed to urban students. An added benefit of a successful agricultural science program is its ability to be utilized contextually for teaching in established core courses.

Purpose

The purpose of this study was to explore first hand perspectives of individuals directly involved in an agricultural education program established in an urban charter school. The following research questions guided this study. :

1. How do administrators and the agriculture teacher view the inclusion of agricultural science courses into an urban charter school curriculum?
2. What challenges did the agriculture teacher encounter when teaching agricultural education courses in an urban charter school?

Theoretical Framework

A qualitative research approach enables a researcher to tell a story according to participants own voices (Creswell, 2007), without researcher bias as to what a particular phenomenon means to participants (Moran, 2000; Moustakas, 1994). Phenomenological inquiry provided the theoretical framework that guided this study to allow recognition of the subjective nature of experiences in order to explore participants' perspectives. Phenomenology provided the platform to explore lived experiences of two administrators and one agriculture teacher as they worked to include agricultural science courses into urban school curricular, and the challenges they faced. Bogdan and Biklen (1998) reported that phenomenological researchers aim to obtain in-depth explanations and understanding of interactions as well as events that are shared among ordinary people, and the essence of those events and interactions through the lens of these individuals. Therefore,

explanations and interpretations generated are presented through the lens of the administrators and agriculture teacher relative to personalized beliefs on how inclusion of agricultural science courses into urban school curricular could benefit students, the charter school, and ultimately the urban community in which they were situated.

Essentially, phenomenological inquiry aims to explain participants' conceptual world (Moustakas, 1994; Van Manen, 1990). This allows the researcher to obtain a deeper understanding of why the administrators/agriculture teacher thought it was important to include agricultural science courses into urban school curricula despite the challenges encountered on a daily basis. Additionally, the use of a phenomenological approach helped the researcher focus on what participants had in common as it relates to their shared views on developing urban agricultural education programs (Creswell, 2007; Moran, 2000; Moustakas, 1994).

The Social Cognitive Career Theory (SCCT) was utilized specifically to interpret and explain a major challenge of teaching agricultural science in an urban school. As previous research has presented the challenge regarding urban students' negative views of agriculturally related fields, SCCT was employed to gain insight into this stereotype. Urban students tend to hold negative views or undesirable outcome expectations relative to higher education and careers in agriculturally related fields, viewing these careers as less rewarding in comparison to other fields like medicine and engineering (Osborne & Dyer, 2000; Thompson & Russell, 1993). Lent et al. (2001) reported that SCCT offered explanations on relationships existing among individuals and contextual variables rooted in three stages of career formation and development. Stages include the development of one's academic or vocational interests; identification and quest for relevant career choices; and one's performance and perseverance relative to educational and occupational activities (Lent, Brown & Hackett, 1994).

Principles guiding SCCT are rooted in Bandura's (1986) Social Cognitive Theory emphasizing the key components of self-efficacy and outcome expectations (Lent et al., 1994). Bandura (1986) defined self-efficacy as an individual's evaluation of self relative to his or her ability to complete specific tasks and accomplish a certain degree of achievement (Stitt-Gohdes, 1997). In applying self-efficacy theory to agriculture and other vocational fields, SCCT claims the likelihood a person will pursue and succeed in a particular occupation or field increases when such person has a higher self-efficacy (Diegelman & Subich, 2001; Lent et al., 1994). Therefore, major principles of SCCT provided a theoretical context for the explanation and interpretation of the administrators and agriculture teacher's views as they strived to develop urban students who were aware of viable career options in agriculture and related fields.

Methodology

Previous research regarding agriculture in secondary schools focused on urban agricultural education programs in traditional high school settings. Therefore, the examination of an agricultural education program at a charter school was able to offer insights into the inclusion and development of agricultural education programs in urban non-traditional high schools. Data for this study were collected from a charter high school located in a large Midwestern U.S. city. Purposive sampling was utilized to ensure information-rich responses from a targeted and knowledgeable audience. Multiple forms of data collection allowed in-depth study of participants in order to accumulate data that included rich thick descriptions and explanations relative to the main purpose of the research (Geertz, 1973; Patton, 2002).

Data were collected at a charter school that enrolled students from grades 9-12. At the time of data collection, the student population consisted of 200 students with an ethnicity breakdown of: 60% African American, 35% White, and 5% other. Participants in this study, who were assigned pseudonyms to protect their identity, included the school principal (Mr. Brooks), the agricultural education teacher (Ms. James), and an active member of the school board (Mr. Brown). Data were collected over the course of one semester. At the time of data collection 90 of the 200 students

enrolled, or 45%, were participating in at least one of three offered agricultural education courses. Agricultural education courses included an introductory course titled Introduction to Agriculture, Food, and Natural Resources; an Advanced Life Science: Plants and Soils course; and a Horticulture course.

Guided by Mayan (2009) and Patton (2002), data collection included the qualitative techniques of semi-structured individual interviews with tape recordings, participant observations, field notes, and analysis of relevant school documents. During a four-month data collection period, the researcher immersed herself in the charter school environment two to three times per week. Full-day experiences included between class transitions, lunch in the cafeteria, and other day-to-day activities. The researcher took detailed field notes with dated journal entries. Twenty-six in-depth journal entries were used in data analysis. Additionally, the researcher collected artifacts from the school including agricultural education program guides and records; recruitment documents; curriculum guides; agricultural education course syllabi and other relevant materials. The researcher also collected data through interviewing seven students taking agricultural education courses at the charter school. These student interviews were analyzed separately and the results may be published in a later paper; however, they do provide another data source for this study. Through collection of multiple data sources triangulation was utilized which increased project reliability as well as internal and external validity (Bogdan & Biklen, 1998; Denzin & Lincoln, 2003; Hatch, 2002).

Semi-structured individual interviews using open-ended questions were the foundation of data collection and interpretation. Participant interviews lasted approximately one hour. Multiple follow up informal discussion sessions and member checks were conducted with each participant. Individual interviews were supported with researcher observations and field notes (Hatch, 2002; Patton, 2002).

The researcher transcribed each interview verbatim. Analysis included inductive, deductive and abductive approaches as recommended by Bogdan and Biklen (1998); Charmaz (2006); Hatch (2002); and Lincoln and Guba (1985). Four copies of the transcription were used for open and axial coding and reduction to categories and subcategories. Inductive analysis allowed examination of large amounts of data, identifying patterns and relationships needed to construct an outline for phenomena being investigated (Bogdan & Biklen, 1998) grounding the findings in the data (Hatch, 2002). Deductive analysis then allowed discovery of patterns and relationships to form hypothetical categories. Finally, abductive analysis (Charmaz, 2006), a cognitive process including components of both inductive and deductive reasoning, allowed the researcher to examine and scrutinize data identifying all plausible explanations. Hypotheses were formed to confirm or refute such explanations until the most plausible interpretations and explanations were generated yielding the reported categories and subcategories.

Findings

All research participants had several years of experience teaching and working in rural as well as urban schools and were able to share personal experiences from working in both settings. Table 1 includes participant demographic descriptions. Mr. Brooks and Ms. James were employed at the school for less than one year while Mr. Brown was an active board member of the school for more than six years. It is noteworthy that Mr. Brown, a charter board member, was one of the founding members of the school.

Table 1

Description of Participants

| Pseudonym | Title | Gender | Ethnicity | Time at School | Experience as an educator / administrator |
|---------------|------------------------------|--------|------------------|----------------|---|
| 1. Mr. Brooks | Principal | Male | White | 5 months | > 10 years |
| 2. Ms. James | Agricultural Science Teacher | Female | White | 5 months | ~3 years |
| 3. Mr. Brown | Board Member | Male | African American | 6 years | >10 years |

Participants were asked to share perceptions about the inclusion of agricultural education courses into urban school curricula. Participants agreed including agricultural education courses in urban school curricula was important. Responses generated two main categories (different way of looking at science and enhancing school science focus) and two subcategories (breaking student agricultural stereotypes and increased state funding) (see Figure 1). Categories and subcategories are explained and supported by excerpts from interview transcripts following Figure 1.

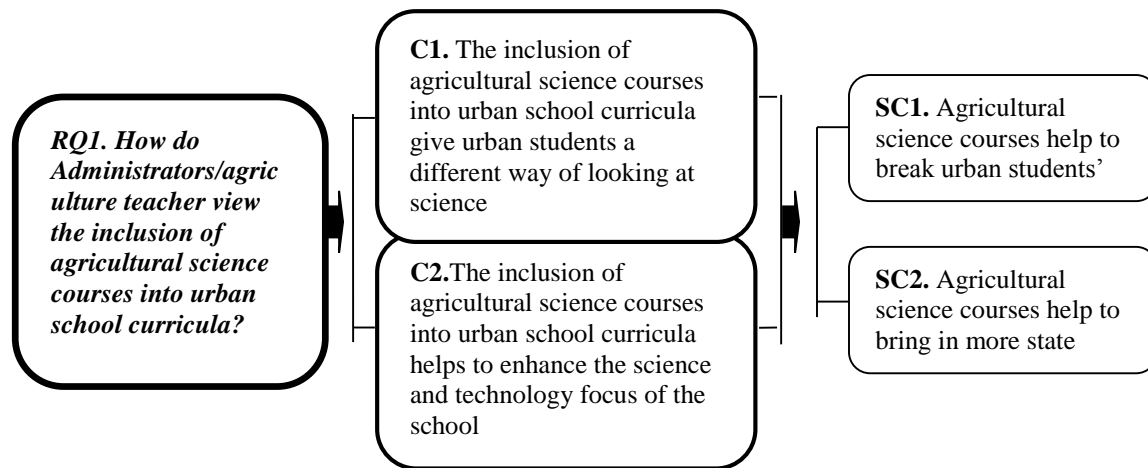


Figure 1. Main categories (C1, C2) and subcategories (SC1, SC2) that emerged from the data in response to research question one (RQ1).

C1: Participants stated school agricultural education courses enhanced students' knowledge and awareness of agriculture. Additionally, they reported these courses heightened student comprehension regarding higher education opportunities and careers in agriculturally related fields. Participants noted that agricultural education courses helped students understand practical applications of science and how science applied to their daily lives. Further, participants emphasized importance of agricultural education courses on the development of well-rounded students. Mr. Brown elaborated on the importance of agricultural education classes to urban school curricula.

Because it's their everyday life. They eat, they wear it, they talk it. They are engaged in computer science, they are engaged in other modern technologies, but we leave out the Ag science, which not only feeds them but feeds the world [and] comes up with medical solutions. And so it's nature and what we can do with it that makes the world go round....Let the young people of all diverse backgrounds, so all Americans, all [state residents] in particular let them know about the industry of agriculture, let them know about it early on and then let them know about [State] University and what it offers and then while we are promoting agriculture, or get in the midst we can go ahead and let them become the engineers and the nurses and the lawyers but we have done something, we have given them an appetite to continue to seek secondary education and it is, education is always the key....

Mr. Brooks explained strategies he used to help urban students gain appreciation for the importance of incorporating agricultural education courses into urban school curricula. One strategy in particular explains to students that agriculture is the application of science.

Yes, I talk to them about the importance of a well-rounded education and not to look at it as that agricultural class....They are not going to be out gardening during the day, they are going to be learning and using the practical application of biology and chemistry and understand how it is important to everyday life and most of them get it....They understand it once I explain it to them that way....

C2: Participants emphasized science and technology as a curriculum and school focus highlighting how agricultural science courses enhanced this focus. Participants saw agricultural science courses as integral to the students' understanding of science and technology along with awareness of higher education opportunities and careers in these fields. They also saw these efforts influencing how the broader community viewed agriculture. Mr. Brooks noted the relationship between agriculture and the school focus.

I would really like to see my students take biology, chemistry and both ALS [Advanced Life Science] courses through the rest of their years...I want them to have four years of science. I want them to have Project Lead the Way courses that have to do with bioengineering, biotechnology and those things and then that whole Ag pathway...from fundamentals down to the ALS courses...and agribusiness could be one of those courses as well... but I think that gives you well-rounded students. Are all of them going to be happy with that pathway in agriculture? Maybe not...but again that's the focus of our school...that's what drives what we do... so that's the framework that we are kinda following.

Mr. Brown noted the school's vision was to assist all students with success in science and technology, regardless of background. He noted the school had "a vision to give lower middle class students and students of diverse backgrounds an opportunity to succeed in the education arena, by assisting them with the sciences and technology, which is what diverse students are lacking." Mr. Brown further spoke about how agricultural education courses complement the technology focus providing possible solutions to manufacturing and social issues. He stated, "I suggest to you that we take agriculture and we put it right next to the computer and perhaps some of our job manufacturing issues will be resolved, it will resolve some of those social factors, but as everything does, it starts with the education." Mr. Brooks emphasized the importance for urban students to obtain a solid agricultural background, as residents of urban communities tend to lack awareness and knowledge regarding agricultural education and careers. He noted, "The east-side of Fern Grove and the urbanness [*sic*] of it all and to have that strong agricultural background. I want people to say wow they really are doing something in Cornwall County and especially on the east-side of Fern Grove."

After participants highlighted the critical role agricultural education courses play in enhancing the school's science and technology focus, they expressed interest in growing the program by increasing the number of agricultural education courses offered. Participants also

discussed robustness of the current science program and ways in which agricultural science courses contributed to their unique urban agricultural education program. Participants further expressed interest in developing students who seek colleges of agriculture to pursue careers in agriculture such as agricultural engineering or other related areas in the Science, Technology, Engineering and Mathematics (STEM) fields. Mr. Brooks noted how agriculture could lead to STEM-related careers.

But I want to stretch it even further, not only do the agribusiness but the agriscience aspect of it and eventually I want to get it into the agricultural engineering with some Project Lead the Way....[I want to] show them that there is a lot of work that can be done in using your biology, chemistry and computers to figure out how to take the product from farm and extend it to families worldwide.

In addition to complementing their science and technology focus participants also indicated agricultural science courses to be a great fit for charter school models. Mr. Brooks noted that the flexibility of charter school systems decreased challenges when including agricultural science courses into school curricula:

We are our own school district so even though we are only one school, what we decide to do, we get to do which makes it very easy to bring in our Ag program, and it made it very easy to do some of the changes that I wanted to do right off the bat...

SC1: Participants indicated urban students have a range of stereotypes relative to higher education in agriculture and careers in agriculture. However, participants believe the inclusion of agricultural education courses throughout high school can play a key role in breaking negative stereotypes. "I think it gets these urban kids a way to see what agriculture is and maybe what it isn't....I think they all picture a farmer in coveralls riding on a tractor but that's not what agriculture really is today" (Mr. Brooks). Participants noted urban students tended to view agriculture as just growing corn, not looking further to see career opportunities for themselves in agriculture. Ms. James noted her students' agricultural stereotypes and lack of agricultural knowledge could be impediments to instruction. However, she views these challenges as teaching opportunities.

You know there is a big stereotype with agriculture. So, the things I do in class I try to break those stereotypes and with me being excited about it and me having that agricultural background I can pull from those experiences and I have personal stories that they can relate to or try to get them to relate to even if they haven't seen....They just think it's farming and corn and that's about itWhen I ask them so what's the agriculture that we have around the school, you know there is a nursery just on the other side of the parking lot behind the school, and they didn't consider that as agriculture but landscaping is a huge industry in agriculture so I mean they are just unaware of what agriculture is....I even had a student who didn't even understand that an apple came from a tree so we went over that most of the foods that we eat come from agriculture. And, farmers don't just farm corn because that's what they see around the city here because there are small farm fields in the city here with corn and soybeans so they see that but they just don't understand that all the stuff that goes into it all the various industries that are wrapped up in agriculture....

Mr. Brooks provided additional rationale for teaching agriculture to increase student knowledge and refute agricultural stereotypes.

What kids know about food is...where do you get milk... from the grocery store ... they come here and they say well I don't want to take an agricultural class and I say yes you do...and here is why. This could be your future, and it's a great job and it's high paying and in high demand and it's important...not only is it important to people in the United States, it's important to people around the world.

Mr. Brown shared a story from another urban school with which he had experience. The story gives a poignant view on urban students' lack of awareness about agriculture, its roles in their lives, and food production.

We had a student who graduated from Central Village High School. He was a 4.0 student who said that chickens came from Walmart... and he was corrected by a young lady that graduated as the valedictorian who said no you are wrong. Chickens came from Kmart because everybody knows that Kmart has been around longer. ...And so I think my interest in agriculture was peaked because of the lack of involvement that clearly the African American community, but the diverse community, had with understanding that agriculture was more than just cows and chickens.

SC2: In addition to complementing the school's core curricula, participants were excited about the ability to access state funding to support Career and Technical Education (CTE) programs such as agricultural education. In [state] a school corporation receives several hundred dollars for each student enrolled in an agricultural education course. These funds are unrestricted, so can be used to pay the agriculture teacher's salary. Fern Grove's budget was based on 270 students, but school enrollment only reached 200. To meet budget, administrators released some teachers, but also looked at additional funding streams. Mr. Brooks explained the school's enrollment and funding problem. "So we are still trying to deal with the repercussions of not having the enrollment that we wanted to have.... looking at what we can do to bring in more income and how we could supplement the science and technology focus of the school...I wanted to bring in more of an agricultural focus...." Mr. Brooks was not only pleased with the additional state funding, but also the impact of the agriculture teacher on the school. "...so she is getting the FFA program started as well and you know she has really been good for the school."

RQ2: All participants had multiple years of experience working in urban and rural schools. Additionally, prior experience was in traditional public schools and non-traditional schools such as charter schools. This diversity of experiences allowed participants to provide views regarding the differences and similarities between instructing agricultural science classes in an urban charter school versus a rural traditional school. Three major categories, as well as one subcategory, emerged from the data (see Figure 2).

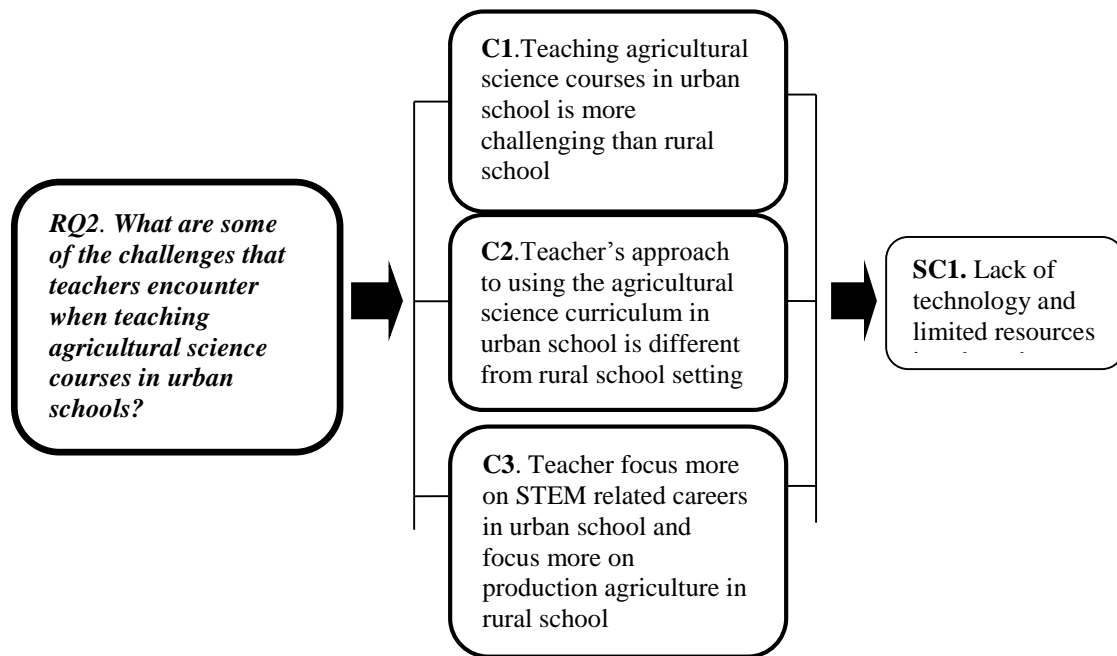


Figure 2. Main categories (C1, C2, C3) and subcategory (SC1) that emerged from the data in response to research question one (RQ2).

C1: Participants recognized teaching agricultural education is different based on whether the program was in a rural or urban school. Mrs. James, the agriculture teacher, indicated encountering more challenges teaching agricultural education classes in an urban versus rural school. She noted agricultural education courses and activities were interesting for urban students, but they had difficulty relating to content and activities. In contrast, rural students typically have personal agricultural experience and generally have agricultural related activities in their communities providing needed familiarity to the subject matter. She noted:

In the urban setting it is more challenging because it's not a natural flow to the kids... at the rural school it's all around them, it was kind of second nature to them.... Most of the students were involved in farming either they had a farm at their family home or they work for a farmer during summer months, so it was more of an easy transition and an easy flow for them....But here at the urban school it's more of a challenge because agriculture is not all around them and they don't realize what it all entails so you have to go back to the basics and back all the way to square one so you have to break things down more for them....

The principal provided insight similar to Ms. James' observations. Mr. Brooks stated:

...rural kids typically have someone in their family who either owns a farm or works on a farm and these urban kids maybe not! [They] may have a granddad in the South that may have worked on a farm or had a farm but typically most of these kids have family members who work in a factory or in a service industry. So, this is totally foreign to them and we can't take for granted that just because they are in an Ag class or in FFA that they really understand what it is that they doing....

C2: Participated emphasized instructional methods and curriculum must fit the setting. Ms. James elaborated regarding differing techniques she utilized when teaching agricultural education courses in an urban school as opposed to rural schools. She believed topic selection was a key component for consideration when planning instructional units. She noted topics chosen in urban schools must be applicable to students relative to characteristics of urban communities.

You need to make sure that you get to know the dynamics of the students, their background and what the community is around them and then you have to take the curriculum and approach it to them in their way. So, in the rural school there...were a lot of horse farms and production crops as well so you could take that and apply it and talk to them about that because they understood it because they saw it every day....But, in an urban school you have to make sure that you take the agriculture that they see in the day....And, sometimes they don't realize that that's agriculture that they see in the day but then you have to make them realize that that is agriculture that they do see in the day and you have to approach the curriculum and tailor it to their needs because they are completely two different needs....

C3: One main component of agricultural education curriculum is career exploration. As a result, participants were asked to discuss experiences relative to career exploration when teaching urban students. Ms. James previously taught agricultural education in a rural school for three plus years. She noted career types focused on in the urban school were different from those she emphasized in rural school settings. She conceded that although Science, Technology, Engineering and Mathematics (STEM) type careers were taught in rural schools, she typically spent more time on STEM related careers in her urban agricultural education classroom. Further, she highlighted production agriculture careers were easier to explore in rural schools. She observed that urban students seem uninterested in careers that were production agriculture based. Ms. James elaborated:

The types of careers that I would focus on here at Fern Grove High School are different from the ones that I would focus on at the rural school....I try to do more of the STEM related science and technology type careers here at Fern Grove High School because I think that would grasp more of the students than some of the other students that I have had....

SC1: Participants emphasized resource deficiencies, especially technology as an additional challenge to teaching agricultural education courses in their urban setting. Participants believed limited access to technology and other resources negatively impacted classroom activities and agricultural program integration into lessons. Ms. James drew comparisons from her past rural teaching experience believing that rural schools presented fewer challenges accessing technology and other resources needed for classroom instructions. She noted:

One of the biggest things that would be useful for me is if I had the technology in the classroom. In my classroom I only have two computers that are hooked up to the internet...I think it would be a lot easier to get to these kids because nowadays kids are a lot more tech savvy and want that hands on...I like to use that in my teaching because at the rural high school I did have a one to one ratio of students to computers so each student had a computer in my classroom so it was a lot easier and I was able to use the internet and all the resources that are on it...Here I have to find it all, print it off, give it to them so instead of them having to have that thrill of finding it on their own. And then for the more science based assignments and things I would like to have a lot more science equipment more than what I have currently...I do have a sterile hood back there which is nice but I don't have a lot of supplies to use that with. I mean we lack a lot of chemicals and science supplies as well so I think technology and then the science supplies would be a big help and good resources...I have less of the resources here in the urban school...I had all the technology and all the high end science equipment at my finger tip there [at the rural school] but here I have the classroom but no technology or high end science equipment.

Conclusions and Discussion

This study was at a single urban charter high school; therefore, caution must be exercised when interpreting results to school settings different from the one in which the study took place. The results of this study provide significant insights for successful development of urban agricultural education programs. The establishment of urban agricultural education programs could play a critical role in increasing agricultural enrollment at both high school and university levels. In an effort to increase enrollment, agricultural educators must be knowledgeable about factors that motivate urban students to take agricultural science courses (Reis & Kahler, 1997). Although student enrollment was not a focus of this study, participants repeatedly emphasized that an intensive scientific concentration was needed to attract urban students to agricultural education courses. Participants indicated urban students held inaccurate stereotypes relating to careers and higher education opportunities in agriculture. Participants felt these stereotypes stem from urban communities being distanced in both geography and personal connections from the diversity of production agriculture as well as students' lack of awareness about the agricultural industry as a whole. Therefore, participants believed incorporation of agricultural education courses into urban school curricula could play a vital role in increasing students' knowledge and understanding related to agriculture then breaking stereotypes formed due to lack of knowledge.

Social Cognitive Career Theory underpinned this study (Lent, 2005). Results identified several behavioral, personal, and environmental barriers and drivers that influenced urban students' career development. For example, participants emphasized challenges faced when teaching agricultural education courses in an urban school as opposed to rural schools. They commented specifically about challenges faced in breaking urban students' stereotypes regarding higher education and careers in agriculturally related fields. Additionally, participants noted that due to lack of agricultural awareness and the absence of easily recognizable local agricultural industries, it is often challenging to help urban students make the connection between what they are learning in the agricultural classroom and a practical application to urban communities.

Participant responses exhibited awareness of media, community, and environmental factors influencing student behaviors and formation of career interests. Additionally, the researcher observed positive reinforcements of higher education and careers in agriculture through posters, pictures, literature and materials on display in the agricultural education department. Multiple observations allowed the researcher to witness the agricultural education teacher guiding students through agriculturally related careers on the FFA website. Student assignments consisted of career journal projects aimed to increase knowledge regarding viable careers in agriculture. These examples demonstrate that the teacher believed these to be ways to increase student desirable outcome expectations during the students' career formation and development stages. As this was not a longitudinal study, we do not know whether the desired impact was achieved; however, SCCT (Lent, Brown & Hackett, 1994) would support that the classroom and school environment can reinforce positive outcome expectations of urban students by exposing them to the wide array of viable career options in agriculture.

The results of this study support previous research (Osborne & Dyer, 2000; Talbert & Larke, 1995; Thompson & Russell, 1993) that students associate agricultural education with basic farming practices negatively impacting their interest in pursuing higher education as well as careers in agriculture and related fields. In fact, offering optional agricultural education courses may not be enough to interest students in taking the courses. Instead, administrators and agriculture teachers should emphasize the science aspects of agriculture and develop teaching and learning strategies to help students make the connection between agricultural education and other science courses such as biology and chemistry.

Flexible structures of non-traditional high schools such as charter schools provide multiple opportunities to develop rigorous agricultural education programs in urban communities. The authors did not find other studies conducted on agricultural education in charter schools in the literature; therefore, this is an area for further research. It would be advantageous for agricultural educators and higher education institutions to collaborate with charter schools to create and market agricultural education programs. Ultimately, this could lead to agriculturally knowledgeable students who may seek out and succeed in higher education institutions.

In [state] funding is available for Career and Technical Education programs to support agricultural education programs in urban high schools; however, not all states may have this funding stream. Alternative sources of funding should be continually explored and assessed to provide consistent sustainable funding for non-traditional high schools interested in developing urban agricultural education programs. Future development of sustainable funding sources for agricultural education programs has the opportunity to play a major role in increasing the number of urban agricultural opportunities. Funding for these programs is particularly important in non-traditional high schools such as charter schools where difficulties financing alternative educational programs are common.

References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods*. (3rd ed.). Boston: Allyn and Bacon.
- Borck, H. A., & Bell, L. C. (2010). Nebraska urban environmental and agricultural systems education program: An evaluation for development. *Proceedings of the American Association for Agricultural Education North Central Research Conference*, Manhattan, KS, 104-118. Retrieved from http://aaaeonline.org/uploads/allconferences/10-7-2010_326_NC_Proceedings_Oct_2010.pdf

- Bowen, B. E. (2002). Advancing agricultural education within the context of an increasingly diverse society. *Journal of Agricultural Education*, 43(1), 1-11. doi: 10.5032/jae.2002.01001
- Brown, N. R., & Kelsey, K. D. (2013). Sidewalks and city streets: A model for vibrant agricultural education in urban American communities. *Journal of Agricultural Education*, 54(2), 57-69. doi: 10.5032/jae.2013.02057
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2003). *Strategies of qualitative inquiry* (2nd ed.). Thousand Oaks, CA: Sage.
- Diegelman, N. M., & Subich, L. M. (2001). Academic and vocational interests as a function of outcome expectancies in social cognitive career theory. *Journal of Vocational Behavior*, 59(3), 394-405. doi:10.1006/jvbe.2001.1802
- Esters, L.T. (2007). Factors influencing postsecondary education enrollment behaviors of urban agricultural education students. *Career and Technical Education Research*, 32(2), 79-98. Retrieved from <http://www.akademik.unsri.ac.id/download/journal/files/scholar/esters.pdf>
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York: Basic Books.
- Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany, NY: State University of New York Press.
- Hoover, T. S., & Scanlon, D.C. (1991). Enrollment issues in agricultural education programs and FFA membership. *Journal of Agricultural Education*, 32(4), 3-10. doi: 10.5032/jae.1991.04002
- Keaton, P. (2012). *Numbers and Types of Public Elementary and Secondary Schools From the Common Core of Data: School Year 2010-11* (NCES 2012-325rev). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved July 29, 2013 from <http://nces.ed.gov/pubsearch>
- Lent, R. W., Brown, S. D., Brenner, B., Chopra, S. B., Davis, T., Telleyrand, R., & Suthakaran, V. (2001). The role of contextual supports and barriers in the choice of math/science educational options: A test of social cognitive hypotheses. *Journal of Counseling Psychology*, 48(4), 474-483. doi: 10.1037/0022-0167.48.4.474
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45(1), 79-122. doi: 10.1006/jvbe.1994.1027
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.

- Marshall, T., Herring, D., & Briers, G. (1992). Factors associated with enrollment in agricultural science and membership in the FFA in Texas. *Journal of Agricultural Education* 33(4): 17-23. doi: 10.5032/jae.1992.04017
- Mayan, M. J. (2009). *Essentials of qualitative inquiry*. Walnut Creek, CA: Left Coast Press, Inc.
- Moran, D. (2000). *Introduction to phenomenology*. London: Routledge.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- National Charter Schools Resource Center. (2013). *Understanding charter schools* (online). Retrieved from <http://www.charterschoolcenter.org/>
- Nelson, R. K. (2002). *A description of agricultural education programs in selected urban areas of the United States* (Unpublished master's thesis). University of Minnesota-Twin Cities.
- Osborne, E. W., & Dyer, J. E. (2000). Attitudes of Illinois agriscience students and their parents toward agriculture and agricultural education programs. *Journal of Agricultural Education* 41(2), 50-59. doi: 10.5032/jae.2000.03050
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Pense, S. L., Beebe, J. D., Leising, J. G., Wakefield, D. B., & Steffen, R. W. (2006). The agricultural literacy of urban/suburban and rural twelfth grade students in five Illinois high schools: An ex post facto study. *Journal of Southern Agricultural Education Research*, 56(1), 5-17. Retrieved from <http://www.jsaer.org/pdf/vol56Whole.pdf>
- Russell, D., & Trede, L. (1999). Developing an urban agricultural education program: A proposed model. *Proceeding of the 26th Annual Agricultural Education Research conference*, Orlando, FL, 26, 253-264. Retrieved from http://aaaeonline.org/allconferences1.php?show_what=National
- Reis, R., & Kahler, A. A. (1997). Factors influencing enrollment in agricultural education programs as expressed by Iowa secondary agricultural education students. *Journal of Agricultural Education*, 38(3), 38-48. doi: 10.5032/jae.1997.02038
- Stitt-Gohdes, W. L. (1997). *Career Development: Issues of Gender, Race, and Class*. Retrieved from ERIC database. (ED 413 533)
- Sutphin, H. D., & Newsom-Stewart, M. (1995). Student's rationale for selection of agriculturally related courses in high school by gender and ethnicity. *Journal of Agricultural Education*, 36(2), 54-62. doi: 10.5032/jae.1995.02054
- Talbert, B. A. (1999, February). Attitudes of STAR Academy agricultural science and business students towards agriculture. In J. Lucas, & D. Krueger (Eds.), *Gateway to the future*. Proceedings of the 53rd Annual American Association for Agricultural Education Central Region Research Conference & Seminar in Agricultural Education, St Louis, MO.

- Talbert, B. A., & Larke, A. (1995). Factors influencing minority and non-minority students to enroll in an introductory agriscience course in Texas. *Journal of Agricultural Education* 36(1), 38-45. doi: 10.5032/jae.1995.01038
- Talbert, B. A., Larke, A., Jr., Jones, W. A., & Moore, R. O. (1997). Recruitment and retention of underrepresented groups: A model for success. *National Association of Colleges and Teachers of Agriculture Journal*, 41(1), 51-56. Retrieved from <http://nacta.fp.expressacademic.net/article.php?autoID=372&issueID=98>
- Tarpley, R. S., & Miller, R. L. (2004). Factors associated with the choice of college major in Utah. *National Association of Colleges and Teachers of Agriculture Journal*, 48(2), 13-16. Retrieved from http://findarticles.com/p/articles/mi_qa4062/is_200406/ai_n9451847/
- Thompson, J. C., & Russell, E. B. (1993). Beliefs and intentions of counselors, parents, and students regarding agriculture as a career choice. *Journal of Agricultural Education* (34)4, 55-63. doi: 10.5032/jae.1993.04055
- Van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York: State University of New York Press.
- Warner, W. J. (2006). *Career experiences of novice urban agriculture teachers* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3228858)
- Warner, W. J., & Washburn, S. G. (2007, May). Novice teachers' decisions to teach agricultural education in urban schools. *Proceedings of the 2007 American Association for Agricultural Education Research Conference*, Minneapolis, MN, 34, 585-598. Retrieved from http://aaaeonline.org/allconferences1.php?show_what=National&sorter_conf=National&sorter_year=2007