

FACTORS INFLUENCING ENROLLMENT IN AN URBAN AGRICULTURAL EDUCATION PROGRAM

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ABSTRACT

The purpose of this study was to identify factors influencing students to enroll in an urban agricultural education program. Former students' in the study indicated parents and/or guardians as the individuals most influencing their decision to enroll in an urban agricultural education program. However, former students' indicated their mother or female guardian as having more influence than the father or male guardian. Former students also indicated events and experiences focused around several themes influencing their decision to enroll in an urban agricultural education program. However, recruitment activities, interest in animals, agricultural career aspirations, and parents accounted for more than 50% of the events and experiences. Thus, for the participants in this study, it was concluded that there were several factors influencing their decision to enroll in an urban agricultural education program.

INTRODUCTION

Agricultural education has a long history in American education (National Research Council, 1988; Talbert, Vaughn, & Croom, 2005), and although this type of education is firmly established in a number of public schools, the program needs further emphasis through expansion into urban and suburban settings (Martin, 1995; Phipps & Osborne, 1988). For example, demographic projections indicate that over the next 20 years, employers and the United States economy will largely rely on a workforce drawn from urban communities (Lytle, 1992). In addition, racial and ethnic minorities currently comprise 28% of the U.S. population (U.S. Bureau of the Census, 2000) and during the next 10 years, non-Hispanic whites are projected to constitute only 25% of the population growth (Esters & Bowen, 2003). As a result of these demographic changes, opportunities to maintain a pipeline of future agriculturalists will depend on the ability of secondary agricultural education programs to attract students from nontraditional backgrounds.

Urban secondary agricultural education programs are programs of study in which students receive formal instruction in a four-component (i.e., classroom, laboratory, FFA, SAE) agriculturally related curriculum located in an urban cluster or metro-urban area, as defined by the U.S. Census Bureau (Soloninka, 2003). Urban agricultural education is a concept that has been around for more than fifty years, most notably with the development of W.B Saul High School of Agricultural Sciences in Philadelphia, Pennsylvania, started in 1952. However, over the past 25 years, there has been an increasing interest among agricultural educators to establish urban agricultural education programs. One of the primary reasons for this interest comes as a result of more American cities expanding into once rural areas creating the need for schools to change their programs to reflect the changing community (Predmore, 2004). Sutphin (1990) noted that, “urban areas are viable opportunities for agricultural education career exploration, supervised agricultural experiences, and placement sites for program graduates and field trips” (p. 7). Bowen (2002) further suggested that the creation of urban agricultural education programs in inner cities reflects “proactive behavior”, especially in terms of increasing diversity in agricultural education.

Since 1980, there have been two national initiatives supporting the development of urban agricultural education at the secondary level. The first was initiated by the Office of Vocational and Adult Education of the Department of Education (OVAED) which was fueled by the changing demographic composition that was occurring in the United States. At the time, OVAED maintained that the “...development of urban human potential...” was the greatest challenge facing vocational education and that of all individuals needing to be served, the challenge was greatest among “urban youth” (Rice, 1980, p. 2). Subsequently, OVAED determined that a strategy to help alleviate urban economic and related employment problems occurring at the time would be to develop guidelines for implementing improved vocational agriculture/agribusiness programs in urban areas. Specifically, a handbook was designed to serve as a reference for teachers, supervisors and administrators to use in organizing and implementing vocational agriculture/agribusiness programs for high school students in urban areas. The handbook focused on processes and procedures found to be useful in planning and implementing programs in urban areas. Specifically, the handbook concentrated on eight primary areas based upon observations from various urban agricultural education programs throughout the United States including: 1) Planning and Program Initiation, 2) Administration, 3) Vocational Instruction, 4) Staffing, 5) Equipment and Facilities, 6) Outreach/Recruitment, 7) Student Placement, and 8) Community Involvement.

The second major initiative was the National Forum on Agricultural Education in Urban Schools which was started at Iowa State University in 1995. The purpose of the forum was to “generate enthusiasm and create an environment for developing more urban-centered agricultural education programs and assist professionals currently working in urban programs” (Martin, 1995, ¶ 1). The goals of the Forum included:

1. To provide the opportunity for leaders involved in education in agriculture located in non-traditional settings to share their program successes and challenges and develop a professional network.

2. To discuss educational and career opportunities and how to communicate these opportunities to students.
3. To design strategies to increase the number of educational programs in agriculture in urban settings.
4. To provide research that will assist schools in determining future curriculum choices.
5. To assist schools in developing marketing plans for their agricultural programs.
6. To plan the national leadership in assisting science class to receive science credits (Martin, 1995, ¶ 2)

The Forum is an annual event that continues to attract the interest of educators from all levels of education including principals, superintendents, school board members, state directors, university faculty, advisory committee members, and local and federal government agencies.

In 1988, the National Research Council in its publication “Understanding Agriculture: New Directions for Education” proposed establishing urban “magnet” schools for the agricultural sciences that combined the traditional vocational program model with new approaches and broadened curricula. These schools would serve to attract more urban, minority, and non-minority students into agricultural education (Talbert, 1996). Currently, urban agricultural education programs can be found in states such as Illinois, New York, Texas, Arizona, Louisiana, California, Missouri, and others. However, despite innovative approaches to expanding agricultural education into urban areas, enrollment is still a major concern for agricultural educators throughout the United States (Reis & Kahler, 1997). Decreased enrollments in agricultural education programs at the secondary level can have major impacts on the agricultural industry. For example, the lack of adequate high school agriculture enrollment can translate at the post-secondary level into fewer students with agricultural training entering colleges of agriculture (Dyer & Breja, 2003). Additionally, low enrollments can result in colleges that are unable to recruit and retain students with agricultural backgrounds which translate into the loss of millions of dollars for universities (Dyer, Lacey, & Osborne, 1997). Decreased enrollments at the secondary level can also affect the supply and demand for agriculture teachers as well as other areas of the agriculture industry. Consequently, this trend does not bode well for an industry that is expected to experience an increase in career opportunities in agriculture and related fields (Goecker, Whatley, & Gilmore, 1999).

Even with the opportunity for growth of urban agricultural education programs, limited research has been focused on factors that influence students to enroll in these programs. Previous literature regarding students enrolled in urban agricultural education programs has focused primarily on career choice (Esters, 2004a); factors influencing secondary enrollment (Esters & Bowen, 2004b); beliefs of agriculture (Thompson & Russell, 1993); agricultural education program development (Russell & Trede, 1999); perceptions of agricultural education stakeholders (Trede & Russell, 1999); attitudes toward agriculture (Talbert, 1996, 1997); perceptions of career opportunities (White, Stewart, & Linhardt, 1990); and successful program components (Soloninka, 2003). Although knowledge of

these areas provides valuable insight into the sustainability and effectiveness of urban agricultural education programs, additional research is needed to address issues related to student enrollment. Furthermore, a greater understanding of student enrollment issues may help to provide additional information in recruitment and retention efforts at the postsecondary level, especially due to the increased demand to attract students from urban and/or non-traditional backgrounds into colleges of agriculture.

Findings from a review of the literature regarding factors influencing students to enroll in secondary programs of agriculture have been conducted primarily with students from rural areas. Past studies have indicated numerous factors influencing student enrollment behaviors including parents, friends, and significant others (Luft & Geise, 1991; Marshall, Herring, & Briers, 1992; Reis & Kahler, 1997); circumstantial/disavowance reasons (Marshall, Herring, & Briers, 1992); interests (Connors, Moore, & Elliot, 1989; Marshall, Herring, & Briers, 1992); image, future value, and perceptions of agriculture (Hoover & Scanlon, 1991; Talbert & Larke, 1995); and career and educational preparation, developmental skills, academic enhancement, response to social pressure, and participation in activity enhanced learning (Sutphin & Newsom-Stewart, 1995). Although these studies have identified numerous factors influencing enrollment in secondary programs of agriculture, there has been limited research efforts focused on students enrolled in secondary agricultural programs within urban areas. As such, this research will expand the current literature base regarding factors influencing the enrollment behaviors of students enrolled specifically in urban agricultural education programs.

THEORETICAL FRAMEWORK

The theoretical framework for this study was based upon the Social Learning Approach to Career Decision Making. Specifically, the Social Learning Theory of Career Decision-Making (Krumboltz, Mitchell, & Jones 1976; Krumboltz, 1979; Mitchell & Krumboltz, 1990) provides insight into the career choice process as well as factors that theoretically influence career choice. Social learning theory explains how educational and occupational preferences and skills are acquired and how selection of courses, occupations, and fields of work are made. The theory identifies the interactions of genetic factors, environmental conditions, learning experiences and task skills. It is posited that each of these influencers plays a part in all career decisions that are made, but different combinations of interactions of the influencers produce a multitude of different career choices that individuals make (Mitchell & Krumboltz, 1990).

The four types of influencers and their interactions lead to three types of outcomes: self-observation generalizations (SOGs), task approach skills (TASs), and actions. Self-observation generalizations are overt or covert statements evaluating one's actual vicarious performance in relation to learned standards (Krumboltz et al., 1976; Herr & Cramer, 1996). Task approach skills are learned cognitive and performance abilities that are used in the process of career decision-making (Mitchell & Krumboltz, 1990). Finally, actions are entry behaviors that indicate overt steps in career progression.

In addition to the influencers and the outcomes of their interactions, social learning theory suggests three sets of testable propositions which include factors influencing (1)

preferences, (2) career decision-making skills, and (3) entry behaviors into educational or occupational alternatives. Given this research focused on the enrollment behaviors of individuals into a specific educational program (i.e., agricultural education), the social learning theory's third group of propositions provided the primary theoretical underpinning for the study. Factors of primary importance in this study fall within the social learning theory's category of influencers: 'Environmental Conditions and Events'. According to Sharf (2002), these factors are generally outside the control of the individual and include social, cultural, political, and economic conditions. Mitchell and Krumboltz (1996) describe several conditions and events, categorized as social, educational, and occupational, that affect an individual's decision-making. Such factors may be planned or unplanned, but they are usually beyond the control of the individual.

PURPOSE/OBJECTIVES

The purpose of this study was to identify factors influencing students to enroll in an urban agricultural education program. The objectives that guided this study were:

1. Determine the individuals influencing students to enroll in an urban agricultural education program.
2. Determine the events and/or experiences most influencing students to enroll in an urban agricultural education program.

METHODS/PROCEDURES

The population for this descriptive study included all students ($N=448$) who graduated from an urban agricultural high school in Pennsylvania between 1992 and 1995. In order to control frame error, efforts were made to obtain the current names and addresses of graduates with the assistance of the school's principal and agriculture coordinator.

A four-part survey instrument was developed to collect the data. Section one included items pertaining to the amount of education completed, individuals influencing secondary and postsecondary school choice, and events or experiences influencing former secondary students' school choice and decision to pursue a postsecondary education. Section two included items related to career choice, individuals influencing career choice, and events or experiences influencing former students' decision to choose or not choose a career in agriculture. Section three included items measuring self-esteem using the Rosenberg Self-Esteem Scale. Section four of the instrument included items that elicited demographic data. Level of influence variables were measured on a five-point scale ranging from 1= no influence to 5= very high influence. Because this study was part of a larger investigation, only items in section one were used to address the objectives.

The questionnaire was reviewed for content and face validity by a panel of experts consisting of five faculty members of the Department of Agricultural and Extension Education at The Pennsylvania State University and the agricultural coordinator from the participating high school. The instrument was also pilot-tested using 43 similar graduates of another urban agricultural high school. The majority of the pilot group was similar in age with the population of this study. The internal consistency of the Rosenberg Self-

Esteem Scale was found to be very high (Cronbach's $\alpha = .86$) based on responses from 22 former students.

The data collection was conducted in three stages. Questionnaires along with a cover letter and prepaid return envelope were mailed to the 448 graduates on July 6, 2003. Two weeks after the first mailing, 31 (8%) of the graduates had responded. On July 21, a second mailing was sent to all nonrespondents which resulted in 21 (6%) additional surveys. On August 7, a final mailing was sent to all remaining nonrespondents. By the end of the third mailing, 36 additional surveys were returned for a total response rate of 24% ($n=88$). Although the response rate for this study may be considered low, follow-up studies five years after high school graduation (Riesenberg & Stenberg, 1990, 1991, 1992) of agricultural education program completers (Helm & Straquadine, 1999), college of agriculture graduates (Heyboer & Suvedi, 1999; Jones, 1999; Jones & Larke, 2001, 2003), and 4-H youth completers (Van Horn, 2001) have yielded response rates between 25% and 59%.

To address the problem of nonresponse bias, a comparison was made between early and late respondents (Miller & Smith, 1983). A chi-square analysis procedure was used to compare early and late respondents. No statistically significant differences ($p > .05$) were found between early and late respondents. Although early and late respondents were found to be very similar on major variables included in the study, because of the low response rate, the researcher encourages readers not to generalize the findings beyond the 88 respondents.

Data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS version 11.5). Descriptive statistics including frequencies, percentages, means, and standard deviations, were used to analyze the data.

RESULTS/FINDINGS

Demographic Information

Sixty-eight percent ($n=59$) of the former students who responded were female. Slightly more than half (54%) were white, while 40% ($n=33$) were African American, 4% ($n=3$) Hispanic, and 2% ($n=2$) were classified as other.

Objective 1. Determine the individuals influencing students to enroll in an urban agricultural education program.

The former students were asked about the level of influence that selected individuals had on their decision to enroll in an urban agricultural education program (Table 1). Overall, former students indicated their mother or female guardian had a "high influence" ($M = 3.61$) on their decision to enroll in an urban agricultural education program. Their father or male guardian ($M = 2.97$) had a "low influence" while a friend ($M = 2.39$) had a "very low influence". The findings were similar for both males and females, although males ($M = 2.15$) indicated more than females ($M = 1.58$) that an agriculture teacher was more influential on their decision to enroll. Furthermore, males indicated that another teacher ($M = 2.77$) influenced their decision to enroll more than did the female students ($M = 2.00$). A Spearman's ρ coefficient of .81 revealed that males and females were in

agreement with their rankings of individuals who influenced their decision to enroll in an urban agricultural education program.

Table 1. *Individuals Level of Influence on Decision to Enroll in an Urban Agricultural Education Program (n = 80)*

Individual	Males (n= 27 ^a)			Females (N= 53 ^a)			Overall (n=80 ^b)		
	Rank	M	SD	Rank	M	SD	Rank	M	SD
Mother or female guardian	1	3.73	1.43	1	3.45	1.56	1	3.61	1.47
Father or male guardian	2	2.85	1.52	2	2.85	1.68	2	2.97	1.60
A friend	5	2.31	1.44	3	2.40	1.70	3	2.39	1.59
Guidance counselor	4	2.42	1.45	4	2.09	1.54	4	2.31	1.56
Another teacher	3	2.77	1.48	5	2.00	1.47	5	2.28	1.51
Another family member	7	2.01	1.50	5	2.00	1.43	6	2.25	1.48
An agriculture teacher(s)	6	2.15	1.35	6	1.58	1.18	7	1.75	1.25

Note. Scale: 1 = No Influence, 2 = Very Low Influence, 3 = Low Influence, 4 = High Influence, and 5 = Very High Influence.

^ar_s = .81. ^bTotal does not equal 88 due to missing data.

Objective 2. Determine the events and/or experiences most influencing students to enroll in an urban agricultural education program.

The former students were asked to list an event or experience most influencing their decision to enroll in an urban agricultural education program. Table 2 lists the events and experiences influencing their secondary school choices. Nineteen percent of the former students indicated that a recruitment activity (e.g., school tours, brochures, summer programs) was the event or experience most influencing their decision to enroll in an urban agricultural education program while 17% indicated an interest in animals was most influential.

Nine percent of former students indicated that parents and career aspirations most influenced their decision while 8% indicated the school environment influenced their decision to enroll in an urban agricultural education program.

CONCLUSIONS

Findings from this study revealed that former students' parents or guardians were the individuals most influencing their decision to enroll in an urban agricultural education program. However, former students' indicated their mother or female guardian as having more influence than the father or male guardian. Thus, for the former students in this study, it can be concluded that parents or guardians were the primary individuals influencing their decision to enroll in an urban agricultural education program, although, the mother or female guardian was the most influential individual.

Former students also indicated several events or experiences most influencing their decision to enroll in an urban agricultural education program. The events and experiences reported by former students focused around several areas. However, recruitment events, interest in animals, agricultural career aspirations, and parents accounted for more than 50% of the events and experiences influencing their decision to enroll in an urban agricultural education program. All of these events and experiences fall within the classification of environmental conditions and events as outlined in the social learning framework. Thus, for the former students in this study, it was concluded that there were several social, educational, and occupational factors influencing their decision to enroll in an urban agricultural education program. This conclusion supports the Social Learning Theory of Career Decision-Making assertion that a variety of factors influence the decision-making process.

Table 2. *Events and Experiences Most Influencing Former Students to Enroll in an Urban Agricultural Education Program (n = 88)*

Event/Experience	f	%
Recruitment	16	18.8
Interest in animals	14	16.5
Career aspirations	8	9.4
Parents	8	9.1
School environment	7	8.2
Not interested in local high school	6	7.1
Other	5	5.9
Family	4	4.7
Good school	4	4.7
Enjoyed outdoor activities	4	4.7
Curriculum	3	3.6
Friends	2	2.4
Teacher	2	2.4
Neighborhood school	2	2.4

RECOMMENDATIONS

Based on the findings and conclusions of this study, the following recommendations were made:

1. Although parents and guardians as a unit are often targeted in the recruitment process, this study indicates that perhaps administrators of urban agricultural education programs should focus more on utilizing the mother or female guardian as a major influencer throughout the planning, design, and development of the student recruitment process.
2. Administrators of urban agricultural education programs should also utilize a variety of relevant learning and work experiences and career awareness activities to attract students into their programs.

DISCUSSION AND IMPLICATIONS

While the participants in this study were graduates of an urban agricultural education program, it is important to note how the results compare to previous studies regarding factors influencing enrollment in traditional agricultural education programs. Similar to findings from previous studies (Reis & Kahler, 1997; Luft & Geise, 1991), this investigation identified parents to be the most influential individuals on a students' decision to enroll in an urban agricultural education program, however, friends and significant others were considered to be less of an influence. This study also identified an interest in animals to be an influential factor for student enrollment behaviors supporting the findings of Reis and Kahler (1997), Marshall, Herring, and Briers (1992), and Luft and Geise (1991), although, these studies defined interests more broadly.

Despite previous studies identifying the influence of factors such as circumstantial/disavowance reasons, and career and educational preparation, on students' enrollment behaviors; former students in this study cited factors contrary to these findings. As such, the results of this study raise the following questions: Are there factors that differentiate students who enroll in urban agricultural education programs from students who enroll in traditional agricultural education programs? Furthermore, historically, the image, future value, and perceptions of agriculture have been identified as factors influencing enrollment; however, none of these factors were cited by students in this study. As such, are urban agricultural education programs doing a better job of influencing students' perceptions as well as improving the image and perceived future value of agriculture? Future research regarding factors influencing student enrollment behaviors in urban agricultural education programs may benefit by addressing these questions.

Although the findings of this study are unique to one school, these findings have several implications for urban agricultural education programs. The findings of this study identified several factors influencing students' decisions to enroll in an urban agricultural education program. If administrators and teachers of urban agricultural education programs are interested in recruiting students into their programs, emphasis should be placed on involving the mother or female guardian in the recruitment process. Recruitment events such as an open house could arrange for former students who have pursued postsecondary degrees and careers in agriculture to talk with current and future students and their parents, specifically the mother or female guardian, about opportunities available in the agricultural sciences.

RECOMMENDATIONS FOR FUTURE RESEARCH

1. Future research should replicate this study to examine whether the findings are valid for other urban agricultural education programs which would increase the generalizability.
2. Future studies should continue to test the propositions of the social learning theory to examine other factors influencing students' decisions to enroll in an urban agricultural education program.

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