

The impact of the secondary agricultural education program on Latino students:
Perspectives towards the agricultural education class, the local FFA organization and the
supervised agricultural experiences program in Iowa public schools

by

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ABSTRACT

Due to the increasing population of Latino students in the Iowa secondary agricultural education program and the need for minority leaders in agriculture, the goal of this study was to survey a group of students in agricultural classes to understand their perspectives towards the learning components of the program. This study found that Latino students in Iowa secondary schools were supportive of the agricultural education program and interested in participating in experiential programs. Recommendations from this study are to encourage Latino students to actively participate in secondary agricultural classes. A greater effort from educators to recruit and research minority students is recommended as well as the involvement of colleges of agriculture in land grant universities. Together they ought to demonstrate a greater interest and take action in the recruitment of Latinos. Their effort to recruit Latinos in agricultural education programs is the best logical answer to diversify the agricultural sciences.

CHAPTER I. INTRODUCTION

In the Iowa secondary agricultural education program, teachers are experiencing increasing numbers of Latino students participating in the classroom and a lesser number in leadership and experiential programs. For that reason, the need to explore the perspective of Latin American students about the secondary agricultural education program emerged. This thesis explores the perspective of Latino students participating in agricultural education classes in rural community schools. It describes the attitudes of students towards the class, the teacher, the FFA Organization (FFA), and the Supervised Agricultural Experiences Program (SAE). The study documents the experiences of Latino students and provides recommendations for the advancement and potential of minority students, particularly Latinos, in higher learning institutions and agricultural careers. In summary, this manuscript discusses the impact of the agricultural education program in the decision making process of students and supports their involvement in the agricultural sciences.

The Latino population has increased 32.1 % in Iowa during the last five years. As of July 1, 2005, the population of Latinos in the state comprised 108,968 persons or 3.7% of the state's total population (State Data Center of Iowa, 2006). People of Latino origin have become the largest ethnic minority group in the state at the turn of the century. By the year 2030, Latinos are projected to augment to 9.8% of the entire state population, or 330, 420 individuals (State Data Center of Iowa, 2006). These changes have contributed to an 87.7% increase in Latino enrollment in the public school system since the year 2000. Consequently, Hispanics comprised 5.8% of the total student population during the academic year of 2005-2006 (Iowa Department of Education, 2006a).

Statement of the Problem

Although there is a large population of Latino students in the Iowa school system, the group continues to be underrepresented in the secondary agricultural education classes, the FFA organization, and in supervised agricultural experiences. In 2002, there were over 6,000 Latino students in the public school system of age 15-18 years that were able to participate in agricultural education classes (Iowa Department of Education, 2006b). However, the Iowa Governor's Council on Agricultural Education (2002) reported that no more than 139 Latino students enrolled in the Iowa secondary agricultural education program during 2002. These students represented just 2% of the total population of Latinos in the Iowa school system with the required age to be engaged in agricultural education classes, the FFA, and SAE activities (Iowa Governor's Council on Agricultural Education, 2002).

Furthermore, the Iowa Council on Agricultural Education report (2002) revealed, that Latino students enrolled in agricultural classes participated in the FFA organization at a percentage lower than the general mean of all non-minority students in the secondary agricultural education program (AgEd). According to the report, no more than 23% of Latino students enrolled in AgEd classes participated in the FFA leadership organization versus 60% of all students in 2002. In addition, a small fraction (43%) of Latino students in the agricultural education program participated in supervised agricultural experiences (SAE) in 2002. As a result, the need to increase the participation of Latino students in local FFA chapters and improve their agricultural experiences through SAE activities has become a priority for agricultural educators. For that reason, this study will attempt to disseminate the characteristics of the Iowa secondary agricultural education program that attract Latino students to participate.

Agricultural Education

Agricultural education is the scientific study of principles and methods of teaching and learning as they pertain to agriculture (Williams, D., 2000). The 1917 Smith-Hughes Act focusing on farming preparation in rural and urban areas launched vocational agricultural education programs in the United States. Later, the 1963 Vocational Education Act improved the secondary agricultural program with agribusiness and other agronomic areas of study. Currently, agricultural education teaches: (1) horticulture, (2) forestry, (3) soil conservation, (4) natural resources, (5) agricultural products, (6) food processing, (7) food and fiber, (8) aquaculture, (9) mechanics, (10) sales (11) services, (12) economics, (13) marketing, and (14) leadership development among others.

The secondary agricultural education program provides a constructive environment for experiential learning in the agricultural sciences. Teachers have succeeded preparing individuals with craftsmanship and experience in agriculture and science. Agricultural education in secondary schools relies heavily on three main components to provide opportunities for leadership and agricultural experiences. These components merge in (I) the classroom, (II) the local FFA organization and (III) the Supervised Agricultural Experiences program.

The Classroom

In agricultural education, the classroom provides a controlled and efficient environment of instruction to develop career interest, scientific knowledge, and professional skills. It compliments the general curriculum with laboratory experiences using group and personal instruction to impart proficiency skills. Teachers utilize the classroom to impart

leadership skills through the FFA organization and agronomic experiences through the supervised agricultural experiences program.

The FFA Organization

The FFA organization is dedicated to develop premier leadership, personal growth, and career success in students at their schools (National FFA, 2006). The local FFA school chapter is an integral part of the agricultural education program because it provides opportunities for students to develop leadership abilities and take charge of their learning experiences. Students in Iowa who participate in the FFA are more likely to score proficient in science, mathematics, and reading (Iowa Governor's Council on Agricultural Education, 2002). Such benefits are related to the purposes of the FFA organization as well as the leadership opportunities that provides for those involved. Moreover, students in FFA focus on citizenship development and career experiential programs in agriculture through supervised agricultural experiences.

Supervised Agricultural Experiences Program

The supervised agricultural experience program introduces students to real life situations in agriculture and science. In addition, it provides opportunities to transform what is learned in the classroom into professional experiences. Students who participate in SAE activities learn about the production of crops, livestock, business, horticulture and other agronomic areas. Participation is beneficial because it encourages students to work in public or private agribusinesses under professional supervision. Furthermore, students participating in supervised agricultural experiences have the opportunity to plan, develop, and carry out agricultural projects in their communities. The program builds responsibilities, self-confidence, human skills, and promotes professional skills among the students.

Mission and Philosophy of Agricultural Education

The secondary agricultural education program produces individuals that value and understand the fundamental roles of agriculture. Its mission is to prepare candidates for successful careers in global agriculture. The National Strategic Plan and Action Agenda for Agricultural Education (2000), supports the continuous improvement and diversity of agriculture. The philosophy of agricultural education is to assist with providing life-long learning experiences in and about agriculture and to provide opportunities for students to gain basic agricultural skills, knowledge, occupational training, professional growth, and personal development to everyone interested (Iowa Governor's Council on Agricultural Education, 2002).

Rationale

Agricultural education programs in the state of Iowa are experiencing a continuous enrollment of Latino students. This enrollment changes are desirable because it indicates that diversity is thriving in schools offering agricultural education classes. The constant changes in the population of Latino students place greater responsibilities on teachers and school administrators. To fully meet the needs of Latino students in agricultural classes and guarantee that the Iowa secondary agricultural education program is effective, educators ought to constantly search for answers to improve and strengthen the secondary AgEd program. In addition, agricultural education programs in Iowa schools face future challenges from constant changes in the demographics of the state. Therefore, the researcher established the question in regards to what is the secondary AgEd program doing to promote the participation of Latino students in agricultural classes, the local FFA organization, and in the supervised agricultural experiences program.

The goal of this study is to determine a person's intentions to participate in agricultural education programs based upon the individual perspective, knowledge, and learning experiences in the classroom. The theory of experiential learning by David A. Kolb and Roger Fry (1975) argues that an individual learns in a continuous four-point spiral cycle. Their theory suggests that the process of learning starts when a person carries out an activity and experiences the effect of their actions in a given situation. The concept of experiential learning explores the pattern of learning in a person from experiences through reflections and helps them conceptualize their actions to further experiences. This idea suggest that learning occurs in four stages (1) concrete experiences, (2) reflection, (3) abstract conceptualization, and (4) active experimentation.

This research study comprises Kolb and Fry (1975) theory of experiential learning because it implies that by students: (1) having concrete agricultural experiences, (2) observing and reflecting in the classroom, (3) forming abstract concepts for diverse situations, and (4) apply what is learned in the classroom into practice, Latinos can develop knowledge and experiences in agriculture. Furthermore, by assisting Latino students in planning learning activities and in helping them to reflect upon their knowledge, students can be effectively engaged with agricultural studies and careers.

To understand the perspectives of the students towards agriculture, Ajzen and Fishbein (1980), suggested, that a person's intention to perform in a given environment is determined by the individual perceptions. Therefore, by analyzing the perceptions of Latino students in the secondary agricultural program, it is possible to determine the attitudes of the students towards the class, the FFA organization and supervised agricultural experiences program.

If Latino students demonstrate interest for agricultural education, they will be acquainted with agriculture, enroll in the class, and/or has a personal interest for agricultural knowledge and professional aspirations. Their willingness to participate in agricultural related classes, the FFA organization, and supervised agricultural experiences would reflect a constructive understanding of agriculture. Therefore by participating in secondary agricultural education programs, Latino students will be engaged in beneficial authentic experiences, make discoveries, and independently experiment a variety of scientific subjects related to agriculture.

Ajzen and Fishbein (1980) revealed that individuals tend to evaluate subjects or situations positively if they identify them as a constructive experience and vice versa. Consequently, if the perspective of Latino students towards the agricultural education program and its components is a positive one, their attitudes will reflect those characteristics that attract them into agricultural education classes and its experiential learning components.

In the agricultural education program, leadership is promoted through the FFA organization and practice is delivered via supervised learning experiences. In order to recruit Latinos, agriculture needs to be perceived as a positive career to break any existing stereotypes. Colleges of agriculture in land grant universities need to take action to enroll Latino students in secondary agricultural education programs. Their efforts are significant to create a welcoming environment to diversify the agricultural sciences areas. Therefore, if the enrollment level of Latino students in the Iowa agricultural education program continues to increase, a positive perspective towards the agricultural sciences can revolutionize the educational attainments of students and improve the image of the agriculture industry encouraging students to become leaders in their communities.

Goal & Objective of the Study

The goal of this study is to explore the perspective of Latino students towards the agricultural education program, the FFA organization, and SAE activities. It aims to encourage minority students to participate in leadership positions and agricultural careers under the teacher's guidance. The objective of this study is to provide recommendations to enhance the agricultural education of Latinos in agriculture. This objective will be fulfilled utilizing quantitative methodologies, the literature review, and the arguments resulting from this study.

Purpose of the Study

The Iowa secondary agricultural education program is the perfect source to survey the perspective of Latino students participating in agricultural classes. For that reason, the primary purpose of this study was to determine the impact of the agricultural education program in the learning process of Latino students based on their perspectives. This study demonstrates how the agricultural education program can be used as an instrument to engage Latino students with higher learning institutions and scientific careers in agriculture. The secondary purpose was to determine the perception of Latino students towards the secondary agricultural education program, FFA, and supervised agricultural experiences program.

The third purpose was to identify enablers that will encourage Latinos to pursue an education in agriculture, science, and natural resources. The final purpose was to provide recommendations to increase the educational attainments of students participating in the agricultural education program. More specifically, the purpose the study was to answer the following research questions.

Research Questions

The four principal research questions that are presented to frame specific exploratory questions for this study were:

- What is the perception of Latino students towards the secondary AgEd program?
- What factors influence Latino students to participate in agricultural classes, the FFA organization and SAE Activities?
- What are the needs of Latino students in the Iowa secondary AgEd program?
- What are the post-secondary educational goals of Latino students in AgEd?

The information gathered from a survey questionnaire will contribute towards fulfilling the purposes of this investigation and provide recommendations to further their education in the agricultural sciences.

Significance of the Study

The outcome of this study will provide agricultural educators with an understanding of how a group of Latino students perceive agricultural education classes, the local FFA organization, and the supervised agricultural experience program. This study will reveal enablers in the program that motivate Latino students to participate in agricultural activities. In reviewing the outcomes of the study, educators will understand the educational aspirations of Latino students and will be able to guide them towards college and professional careers in agriculture. This study serves as an opportunity to understand the experiences of Latin American students in the Iowa agricultural education program. The information from this study can be integrated into the body of knowledge at Iowa State University. Disseminating this information to Iowa teachers guarantees a solution to the enrollment issue concerning Latino students in the FFA organization, the SAE program, and land grant universities.

Assumptions of the Study

The following basic assumptions were made for the purpose of this study:

1. The participants in this study fully understood the purpose and objectives of this study.
2. The participants will be familiar enough with the agricultural education classes, the FFA organization, and supervised agricultural experiences to have developed a positive perception of the agricultural education program.
3. The participants will be honest and professional in their responses of their perceptions in the questionnaire.
4. The agriculture education teacher understands the purpose of the research and the questionnaire
5. The agriculture teacher would be truthful, honest, and objective administering the questionnaire in the classroom.
6. The findings would be useful to educators involved in the recruitment of Latinos in agriculture.
7. A quantitative study was the best method to obtain the necessary information.

Limitations

A major strength of the present study is that the information was obtained directly from the population of interest, and the participants had the opportunity to describe their attitudes and perceptions at a personal level. The truthful and sincere responses of these students in the Iowa secondary agricultural education program provided a valuable glimpse into the world of these in the classroom, the FFA organization and in SAE activities. A limited sample of Latino students enrolled in agricultural education classes as listed by the Iowa Ag Ed Update School Directory of Secondary Agricultural Education Programs 2004-

2005 were included in the study. Latino students in schools not offering agricultural education preparation may hold different perceptions, in either a positive or negative manner, than the available sample group. For that reason, the outcomes of this study are not necessarily applicable to all Latino students in Iowa public schools or those in other states. However, the results of this study are significant to Iowa rural schools with AgEd teachers experiencing Latino students in the secondary agricultural education program. Furthermore, although there have been many studies regarding the perspective of minority students towards the constituents of agricultural education, very little has been established on Latino students enrolled in the Iowa secondary AgEd program in communities where agricultural industries are the main economic pull factor for Latin American immigrants.

It is extremely difficult to conduct an investigation in this field that would not generally require the signed permission of administrators, teachers, parents, and students. Among other limitations, the cooperation of agricultural education teachers in Iowa is somewhat unreliable and difficult to obtain. The negative responses to this survey reported by teachers and the lack of minority enrollment in the majority of schools made the study complicated to encompass a larger sample size. In addition, current immigration issues in the United States hindered the response rate of Latino immigrants and their families to volunteer their children to complete surveys that might risk their residency status. Therefore, no attempt to identify if respondents were U.S. citizens was made in this investigation or the distinction if Latino students are migrants, immigrants, or U.S. citizens.

Definition of Terms

Agricultural Education Program: Program established in 1917 by Smith-Hughes Act focusing on farming preparation. Later on, it expanded to agribusinesses and other areas by the Vocational Education Act in 1963.

Agricultural Education Teacher: Teachers at the secondary school level (urban and rural) who teach curriculums related to the agricultural sciences.

Agricultural Education: The scientific study of principles and methods of teaching and learning as they pertain to agriculture.

Local FFA Organization: An integral component of agricultural education, formerly known as the Future Farmers of America.

Food Processing Industries: Encompasses meatpacking, slaughtering, canning and other agricultural industries.

High/Secondary School: Encompasses students enrolled in grades 9-12.

Hispanic: Spanish-speaking person of Latin American or European origin, birth, or descend living in the U.S.

Immigration: The movement of people from one nation or state to another, where they are not citizens. Immigration implies long-term permanent residence by the immigrants.

Latin America: The region of the Americas where Romance languages derived from Latin are officially or primarily spoken. These are Central and South America, and the Caribbean.

Latino: Preferred term used to describe a Spanish-speaking person of Latin American birth or descend living in the U.S. Not from European origin.

Leadership: The influence of an individual to a group to cause real changes and outcomes in a positive manner.

Midwest. Region of the North Central U.S. between the Rocky Mountains and the East border of Ohio River and the borders of Kansas City and Missouri.

Migration: Any movement by humans from one locality to another, often over long distances or in large groups.

Migration Patterns: Routes for migrant movements across a country, state, city, or county.

Minority: A group that does not comprise a dominant majority of a given society.

Poverty Rate: Description of material and social wealth in an individual or a group. As described by the U.S. census a poor household of four is one generating an income of approximately \$20, 474 in the year 2005.

Pull Factors: A feature or event that attracts a person to move to another area. Pull factors include things like more or better services in that area, more reliable food services, having a higher quality life, living in a more liberal or less repressive state or country, and more comfortable housing.

Supervised Agricultural Experience Program: An experiential component of agricultural education classes, it encourages students to develop agricultural projects prior to obtaining an FFA degree. An SAE can be anything from raising livestock for an agribusiness to conduct a crop production project at home.

Vocational Education: Program established to prepare students in a short term for a specific job or trade, focusing on the technical rather than the scientific aspects.

CHAPTER II. REVIEW OF LITERATURE

The purpose of this study was to determine the attitudes of Latino students towards agriculture after taking an agricultural education class. In this chapter, the theoretical framework of the study defines research on the perception of Latino students in the secondary agricultural education program. Information from previous studies for the recruitment and retention issues of teachers in the agricultural sciences were reviewed. The literature presented relates to the attitudes of Latino students and other minorities towards agricultural education classes, the teacher, the FFA organization and the supervised agricultural experiences program. Included is a review of the history of Latinos in Iowa from immigration to education, finalizing with the experiences of students in the secondary agricultural education program.

Overview

Immigration to Iowa has played a key role in the increasing population of Latinos residing in the state. In rural agricultural communities with meatpacking or food processing industries the number of Latinos has increased through the years. Agricultural industries continuously offer jobs that are pull factors for many migrant families looking for new opportunities. Consequently, families have settled and enrolled their children in the Iowa public school system. The influx of Latino students in the Iowa secondary agricultural education program has also flourished with an increasing number of students participating in agricultural classes and a limited number in the FFA organization and supervised agricultural experiences. This study is of great relevance because Latinos in the agricultural education program represent a pool of knowledgeable candidates to become minority leaders in the agricultural sciences.

Latinos in the Nation

In 1990, the Hispanic population in the United States comprised 22.4 million individuals (U.S. Census Bureau, 2006a). In 2006, Latinos were recognized for being the largest and fastest growing ethnic group in the United States (U.S. Census Bureau, 2006b). Ninety percent of the total foreign-born agricultural work population in the U.S. came from Latin America. Of these workers, approximately seven percent were adolescents (Centers for Disease Control and Prevention, 2006).

By 2005, the Latino population had risen to 42.7 million comprised of 9.5 million families averaging 27 years of age (U.S. Census Bureau, 2006a). For every two people added to the nation's population in 2005, about one was Latino (U.S. Census Bureau, 2006a). Sixty four percent of these had a Mexican background, followed by Puerto Ricans, Cubans, and other Central or South American countries (American Fact Finder, 2006). Moreover, the projected Latino population is expected to increase to 102.6 million individuals and comprise 24% of the total nation's population by the year 2050 (U.S. Census Bureau, 2006b).

The national median income per Latino household averaged \$35,967 with a poverty rate of 2.8 percent. However, the educational attainments of Latinos remained below average since 2004. Just 58% percent of Latinos 25 or older had at least a high school education, 12% had bachelors' degrees, and 2.5% possessed advanced degrees (US Census Bureau, 2006b). Sixty eight percent of Latinos who were 16 and older actively participated in the civilian labor force during 2005. According to the U.S. Census bureau, the majority of Latinos were employed in service occupations, office jobs, construction, and in the production of agricultural products. On the other hand, a remaining minority worked in jobs that required a professional education (U.S. Census Bureau, 2006b).

Latinos in Iowa

The earliest census record of Latinos in Iowa dates back to 1940 when the state estimated their population to be composed of 3,308 persons (State Data Center of Iowa, 2006b). Three decades later, the 1970 state census estimated that Latinos comprised 0.6% of the overall state population. Later on, the population of Latinos experienced an increase from 25,537 in 1980 to 82,473 individuals in 2000 comprising 3% of Iowa's population. Of this percentage, one percent had less than 18 years of age and two percent were over 18 years of age (State Data Center of Iowa, 2006a). At the turn of the century, Latinos became the largest and fastest growing minority group in the state of Iowa surpassing the African American population (State Data Center of Iowa, 2006a).

In 2005, Latinos in Iowa were a young group averaging 23 years with 15,272 families of Latin American heritage residing in the state and a population of 108,968 residents. Eighty percent of these are of Mexican ancestry, followed by Puerto Ricans, and other Central or South American countries (State Data Center of Iowa, 2006a). Moreover, the projected population of Latinos in Iowa is expected to increase to 330,420 individuals by the year 2030 (State Data Center of Iowa, 2006a).

The median income per Latino household in Iowa is \$32,971 with a poverty level of 20 percent. In addition, the educational attainment of Latinos in Iowa lags behind expectations. In the year 2000, there were 37,284 Latinos with ages 25 or older, of these fifty two percent of had at least high school, 11% had bachelors' degrees and 4% possessed advanced degrees. Regarding agriculture employment, 11% of Latino employees who were 25 or older worked in the food processing industries and 2% were agricultural workers (State Data Center of Iowa, 2006a).

Latinos in the Iowa Labor Force

In the last decade, rapid immigration of Latin American groups into Iowa has caused a significant increase in the supply of low-skilled and low-educated workers for the state. The total workforce participation of Latinos in Iowa is much smaller than the total workforce in border states, but their rapid percent change of 87.6 percent from 1990 to 1999 increased their participation in the state's labor force (State Data Center of Iowa, 2006c). The Iowa Workforce Development (2001) reported that 71 percent of Latinos were employed and less than one percent was retired. These changes are impacting small towns and cities located near food processing and meat packing industries (Huffman and Miranowski, 1996).

By coming to Iowa, Latinos seem to be seeking jobs, a higher income, affordable housing, and an education for their children (Cantu, 1995). A total of 82,473 Latino or Latino residents lived in the state during the year 2000; 54 percent were male and 45.5 percent were female (State Data Center of Iowa, 2006d). At the professional level, Latinos have few professional individuals in the labor force and are in great demand. But the low educational attainment of the group remains a pervasive subject in the Latino community (Educational Testing Service, 2003). If the projected student population growth of Latino students is substantial, the youth population has an opportunity to meet national requirements of scientists and engineers through educational programs (Educational Testing Service, 2003).

Pull Factors

A report by Aponte and Siles (1994) concluded that Latinos accounted for over half of the population growth in the Midwest during the 1980s. Furthermore, the major pull factors for Latinos were numerous meat-processing plants that continuously offered

employment to migrant workers (Aponte and Siles, 1997). The food processing industry, which includes meatpacking and poultry processing businesses, is one area of agriculture that has expanded through the years (Huffman and Miranowski, 1996). The lure jobs in the food processing industries and the attractive economy in the region have caused the migration of Latinos into the American heartland, particularly in Iowa (Ostendorf, 1992).

Latinos in Iowa have relatively high proportions of their population employed in agricultural industries for reasons that are related to income and educational opportunities (Aponte and Siles, 1997). The Iowa Workforce Development (2001) reported that 33,620 Latinos were employed in the state's labor force comprising 2.2 % of the total workforce, the second largest after the Caucasian majority. Over the past 30 years, the food processing industry, which includes meatpacking and poultry processing, has gone under technical improvements and geographical relocations. These factors influenced changes in the Latino population of the state (Huffman and Miranowski, 1996). In areas where meatpacking companies have expanded, the numbers of Latinos has continuously increased over the years while lacking an appropriate working environment and most importantly education (Burke, 1996).

Migration Patterns

Back in 1940s there were 3,320 Latino residents (State Data Center of Iowa, 2006b). Since then, the population of Latin Americans living in Iowa has increased to 108,968 residents in 2005. Border States such as Texas, New Mexico, California, and Arizona are ports of entry for many Latin American families living in the Midwest (Cantu, 1995). The major region of birth for the Iowa immigrant labor force is Latin America, particularly Mexico (State Data Center of Iowa, 2006d). Mexicans also dominate the number of non-

Caucasians moving to Iowa with a total of 24,145 individuals entering into the state between 1998 and 2004 (State Data Center of Iowa, 2006d). As a result, legal permanent residents from Mexico comprised the second largest group of migrants choosing Iowa as the intended state of residence from 2001 to 2005 (State Data Center of Iowa, 2006e).

Immigration

Iowa has become a destination for Latinos looking for jobs in the production, processing, and distribution of agricultural products (Cantu, 1995). However, the number of temporary migrant workers from Latin America between 2001 and 2005 numbered 16,690 workers or just 8.5% of all provisional employees hired in the state of Iowa. Those who came from Latin American countries and applied for legal permanent residency in Iowa came from Mexico, El Salvador, and Guatemala totaling 932 individuals. Forty eight percent of these were male and 52% were female (State Data Center of Iowa, 2006e). Consequently, the economy of the state improved due in great part to a Spanish-speaking labor force. Decades of migration streams across Iowa have produced a growing Latino population and improved the economy of the state (Huffman and Miranowski, 1996).

Theories on Migration

Scholars working within a global framework argue, that labor migration is related to the stabilization of the economical, political, and social structures of a global economy (Wallerstein, 1974, 1991). In other words, that migration represents the internalization of the “reserve army of labor” and the effects of globalization in social, economic, and political structures at an interlocal level (Cohen, 1987 & Sassen, 1988). Sassen, a scholar on migrant labor, argues that there are certain characteristics that explain the shifts in the structures of a global economy. The first is a decrease in manufacturing and

an increase in service sector jobs, the second is the geographic redistribution of manufacturing jobs, and the third is an increase in low-wage, low-skill jobs, and high-levels of professional jobs in service industries.

These characteristics apply to the state of Iowa for several reasons. During the 1970s', the production and processing of agricultural products in Iowa expanded to a global level and became a major force in the interlocal market (Huffman and Miranowski, 1996). A decade later, a farm crisis ruined the economy of the state causing the displacement of 4.7 percent of the state population (Ostendorf, 1992). Such events triggered politicians to act by pursuing the recruitment and expansion of agricultural industries through incentives and community recruitment (Cantu, 1995). Therefore, to satisfy the demand for labor, a new campaign was initiated to recruit immigrants, particularly Mexicans, and other minority groups into the agricultural industries (Cantu, 1995).

Latino Students in the Iowa School System

The outcomes of an increasing population of Latinos in the state of Iowa have reached the public and non public school systems in the last ten years. Migrant and immigrant families of Latin American heritage have settled in the state satisfying the labor demand from agricultural industries while contributing a large population of Spanish speaking students to the school systems. During the fiscal year of 2000 – 2001, the Iowa Department of Education (2006c), estimated a total of 18,463 Latino students enrolled in grades PreK-12 in the public and non public school systems. Of these, 17,578 attended public schools and 885 non public schools. This number increased to 28,145 Latino students in public schools and 1,120 in nonpublic schools for a total of 29,265 students for the fiscal year of 2005-2006 (Iowa Department of Education, 2006a). In general, the group experienced a

58% enrollment change in Iowa public and private schools from 2000 to 2006. Of these, the largest increase of Latino students was reported in the public system and the lesser in private schools (Iowa Department of Education, 2006abc).

By 2002, Latino students exceeded African Americans and became the largest minority group in the Iowa public school system. Minorities in the K-12 school level had a diverse population of 21,375 Latinos, 20,629 African American, 8,547 Asians, and 2,635 Native Americans students (Iowa Department of Education, 2006b). Latinos lead the African American group by 3.5 percent for the first time in the history of the Iowa Department of Education. In the fiscal year of 2002-2003, the pool of Latino students continued increased to 23,661 students, an increase of almost 10 percent in a one-year term.

Subsequently, during the fiscal years 2002-2003 and 2003-2004, the population of Latino students in the public school system increased 10.7 percent, the largest increase of all ethnic groups. Minority groups accounted for 12 percent of the total enrollment in the fiscal year 2002-2003. The number of Caucasian students decreased from 95.3 percent to 88.2 percent, a change of -8.3 percent. Such changes reflect the ethnic make up of Iowa's student population. However, in nonpublic schools, the ratio of ethnic groups decreased in 2003-2004. Caucasian students accounted for 94.3 percent of the nonpublic student PK-12 population. Latinos at 2.4 percent, remained the largest minority ethnic group, Asians remained the second largest with 1.6 percent of the overall enrolled body of students. The remaining percentages (1.7%) comprised African American students and other minority groups (Iowa Department of Education, 2006d).

Latino Students in the Iowa Secondary Agricultural Education Program

In the state of Iowa, approximately 245 public schools offered secondary agricultural education in 2004 (Iowa AgEd Update, 2006). That same year, the Iowa Governor's Council on Agricultural Education surveyed 79 schools to estimate the Latino population enrolled in the agricultural program (Gruis, 2004). The survey revealed that 42 schools were without Latino students, 27 had at least one student, 6 had less than ten students, and 4 had ten or more enrollees in the agricultural education program. Consequently, the estimated population of Latinos in the program summed to 219 students or 3.6 % of the total Latino student enrollment with sufficient age to participate in the 2004 academic program (Gruis, 2004).

The gender ratio for the group as researched by the Iowa Governor's Council on Agricultural Education was comprised of 70 females and 149 males. Of these students, 32 Latinos were members of the FFA organization and 79 completed supervised agricultural experiences (Gruis, 2004). Only four schools reported having more than ten students enrolled in the program at that time. The largest population of Latinos in the Iowa secondary AgEd program were reported in the communities of Columbus Junction, Denison, Muscatine, and West Liberty. See Appendix A.

Perceptions of Minority Students towards Agricultural Education

Sutphin and Newson-Stewart (1995) showed that student's reasons for enrolling in agricultural courses could be categorized in five conceptual domains including preparation for job and higher education, development of skills, academic enhancement, response to social pressure, and participation in activity centered learning. Rossetti (1988) found that the

major enrollment barriers in vocational programs were related to program content and the perceptions of students towards occupational programs.

Reis and Kahler (1997) demonstrated in a study that students in Iowa who enrolled in the secondary agricultural education program were influenced by personal interests and desires based on their possession of a farm background. Students that were satisfied with the FFA organization, agricultural contests, and the supervised agricultural experience program demonstrated motivation to learn. Those who were not satisfied with the program, displayed disappointment towards the facilities in the classroom, the agricultural mechanics course, and did not enjoyed leadership activities (Reis and Kahler, 1997).

Generally, in agricultural education, minority students often have misconceptions of the agriculture industry and agricultural careers (Nichols and Nelson, 1993). Talbert and Larke (1995) reported that African American and Latino students are more likely to have negative perceptions towards agriculture than students from other ethnic groups. Their research recognized that the percentage of minorities enrolled in agricultural education courses was disproportionately low compared to the percentage of minorities in the secondary school population (Talbert and Larke, 1995).

Sutphin and Newson-Stewart, (1995) affirmed that a student's decision to enroll in agricultural education programs is affected by personal factors based on their interests and perceptions. Talbert and Larke (1995) confirmed that minority students, more so than non-minority students, enroll in agriscience courses for reasons supposed to be out of their control and that they perceive barriers enrolling in agricultural education courses more than non-minority students. Furthermore, they exposed the facts that the majority of agricultural education teachers are non-minority and that minority students often do not come from

farming or rural backgrounds. They describe this situation as a great barrier for the recruitment of minority students in agriculture (Talbert and Larke, 1995).

To maintain an active recruitment program in agriculture, Reis and Kahler, (1997) suggested sharing information about the agricultural program with potential students, parents, school administrators and the public. Furthermore, they encourage educators to analyze the mechanics phase of the agriculture program to find ways to strengthen it and distribute information with school counselors to be used as a recruitment tool for other students (Reis and Kahler, 1997). Esters and Bowen (2005) found that the experiences of urban students who chose an agricultural career focused around several themes, which included career opportunities, high school educational experiences, and work experiences. Students who did not choose an agricultural career were influenced by lack of agricultural interest and career opportunities. Their findings suggested that a discriminant model consisting of selected factors could not discriminate between former students to participate or not in an agricultural career after they completed a secondary agricultural education program (Esters and Bowen, 2005).

Consequently, researchers have concluded that agriculture educators should direct their efforts to recruit additional minorities into agriscience teaching and to improve the environment for minority students (Talbert and Larke, 1995; Reis and Kahler, 1997; and Sutphin and Newson-Stewart, 1995). Talbert and Larke (1995) suggested that unless an increase in the minority enrollment in introductory agricultural courses is attained the number of minorities in agriscience education would continue to be underrepresented. Furthermore, if agricultural education were to reach a cross-section of all students, images and perceptions would need to be changed (Hoover and Scanlon, 1991).

Perceptions of Minority Students towards the FFA Organization

According to the Iowa Governor's Council on Agricultural Education (2002), Latino students in the Iowa FFA organization participate at a percentage lower than the mean of all students. Just 23% of Latino students participated in the FFA leadership organization versus 60% of all students. Moreover, in the supervised agricultural experiences program, only 43% of Latino students benefited from the program (Iowa Governor's Council on Agricultural Education, 2002).). According to Nolo Martinez (1998) the Special Assistant to the Governor for Latino Affairs, the lack of Latino role models in agricultural education, the need for bilingual instructional materials in the classroom, and the availability of teachers with Spanish speaking skills are factors that affect the participation of Latino students and other minorities in the FFA organization (Martinez, 1998).

While prior agricultural experiences and outdoor educational activities are strong influential factors in the recruitment of students into agriculture majors, demographics on minority students reveal that they do not come from a farming or rural background (Talbert and Larke, 1995). Collectively these concerns suggest a significant need for creative strategies for recruitment and learning programs that address the needs of all students at different levels (Hoover and Scanlon, 1991).

Research studies reveal that minority students have fewer leaders in agriculture and do not perceive agriculture as a prolific career to attain (Talbert and Larke, 1995 and Nichols and Nelson, 1993), which can be a reason for minorities to see themselves as unlikely candidates for professional careers in the agriculture industry (Talbert and Larke, 1995). Lass (1989) stated that the reason for agricultural education students did not join the FFA

was because of lack of time to participate. On the other hand, those who joined the FFA organization did it for the opportunity to learn leadership skills (Lass, 1989).

Croom and Flowers (2001) confirmed that the social aspects of the FFA organization are motivating factors that influence the decisions of students to become members of the organization. They also demonstrated that students join and participate in the FFA based upon the ability of the organization to meet the need of students for a sense of belonging (Croom and Flowers, 2001). Therefore, the decision process to join or not join the FFA organization depends on the perceptions of the students towards the school chapter and its members.

Cultural factors such as gender and ethnicity also influences student attitudes towards the enrollment in agricultural education courses (Sutphin and Newson-Stewart, 1995). In addition, many agriculture programs are stereotyped as being comprised of primarily white male students from farms (Hoover and Scanlon, 1991). As a result, further studies have been recommended to study the problems that affect enrollment in agricultural education programs (Krueger and Riesenberg, 1991).

Krueger and Riesenberg (1991) determined that the evolution of agriculture programs must continue if the programs are to meet the needs of students in the 21st century. If agricultural education is to reach a cross-section of all students, images and perceptions will need to be changed to increase the participation of minorities in agriculture. Moreover, educational interventions need to encourage minority groups to better understand agriculture in order to develop a more positive view of agriculture (Hoover and Scanlon, 1991, and Sutphin and Newson-Stewart, 1995).

Recruitment of Minorities in Agriculture

Programs teaching technology with a science-based curriculum enroll more African American students than traditional production oriented programs. In addition, schools with African American science teachers have the highest percentages of African American students in the agricultural science program (Jones, Bowen, and Rumberger, 1998). Dyer, Breja, and Andreasen (1999) found that students who had completed high school agriculture courses expressed more positive attitudes toward university agriculture programs, high school agriculture programs, and agriculture as a career than did students with no high school agriculture experience.

Students indicated that the most influential person in their decision to attend the College of Agriculture was their high school agricultural education teacher. Jones, Bowen and Rumberger (1998), also found that agricultural science teachers attitudes toward teaching and students had a significant impact on African American enrollments in agricultural science courses. In fact, teachers who positively relate to all students and work enthusiastically in their classrooms had the highest number of African American students in their agriculture courses (Jones, Bowen, and Rumberger, 1998).

Regarding Hispanics, their experiences in the American educational system have been successfully documented, but the majority of the studies failed to recognize their potential as professionals in the agriculture industry. Velasco and Fix (2001) found that due to demographics, students of Mexican origin continue to demand the attention of the educational community in the United States. In higher education, Latinos have long been underrepresented (Morse and Hammer, 1998; Santiago and Brown, 2004) and the need is increasing (Mathews, 2002). In agriculture, approximately 7% of migrant and seasonal farm

workers are between the age of 14 and 17 from Latin American countries (Acosta and Lee, 2001). Although a great number of young Hispanics are hired in great numbers by the agricultural industries of the United States, the lack of professional role models in have delayed their participation in agricultural education (Martinez, 1998).

Latinos in particular were limited in agricultural programs in land grant universities (Trotter, 1998; Litzenberg et al. 1991; Jones and Larke Jr. 2001). The perception of Latino students and their post secondary aspirations to pursue an agricultural education remain as an area needing further studies (Bowen, 1994). Researchers argue that colleges of agriculture in land grant universities have been unresponsive to the increasing Latino participation in agriculture (Flores and Kellogg, 1989; Nichols, 1993). In response, greater efforts have been requested to increase the participation of Latinos in agriculture (Larke Jr. 1987; Bowen, et. al., 1991).

While the majority of educators in land grant universities continues ignoring the potential of students in the agricultural education program, the enrollment of Latinos in colleges of agriculture remains in decline and in great demand in agricultural professions (Jones and Larke Jr. 2001). If agriculture in rural communities continues depending on Hispanics, it is imperative to prepare and retain Latino students in agriculture at land grant universities to provide leadership skills to the young group (Jones and Larke Jr. 2001). Therefore, the participation of professional Latinos in the agriculture industry depends on the efforts of educators to attract, retain, and educate them in agricultural education (Jones and Larke Jr. 2001).

However, Breja and Dyer (1999) reported that agriculture teachers had no training in recruitment strategies or any technical knowledge for diversity to recruit students into the

agricultural education program. In a later study Dyer and Breja (2003) identified several problems that agriculture teachers experience in recruiting and retaining students in secondary agricultural education programs. “The major problems discovered were scheduling difficulties, availability of time to recruit, student involvement in other activities, access to students, competition from other programs, lack of guidance counselor support, increased graduation requirements, image of agriculture, lack of interest in agriculture, and block scheduling”. In a similar study, Dyer, Breja, and Ball (2000) looked at the major problems for retention finding similar problems. The only distinct findings from their previous study were the quality of the agriculture instructor and the image of the agriculture program.

Luft (1996) indicated that most students enrolled in secondary programs and FFA were Caucasians, and the extent to which secondary agriculture teachers carried out cultural diversity practices were often limited and improvement was needed. Teaching practices most frequently carried out were those common to most classrooms regardless of cultural diversity, while those least frequently carried out were practices addressing cultural diversity more specifically (Luft, 1996).

Chapter I provided a general idea of the current situation of Latino students enrolled in the Iowa public school system and promotes their potential as future minority leaders in agriculture. Chapter II described previous studies conducted to understand the enrollment of minority students in agricultural related courses and provided a theoretical framework for the study. The following chapter demonstrates the methods and procedures used to address the goals and objectives of the study. Furthermore, the validity, reliability, and data analyses used in the research study are explained in Chapter III.

CHAPTER III. METHODS AND PROCEDURES

Purpose

The purpose of this study was to describe how the Iowa's secondary agricultural education program influences the educational perspective and professional aspirations of Latino students in agriculture. This study demonstrates how the secondary agricultural education program can engage students with higher learning institutions and scientific careers in agriculture.

The study focused on implications of the data to the agriculture teacher, the FFA organization, and supervised agricultural experiences. Specific objectives of this study were to: (1) develop a demographic profile of a sample of Latino students enrolled in agricultural classes (2) identify enablers in the secondary agricultural education program, the FFA organization, and supervised agricultural experiences programs, (3); describe educational aspirations of Latinos in agricultural classes, and (4) provide recommendations for the recruitment and retention of Latino students in agricultural education programs.

Research Design

A descriptive survey design was used in this applied research project. The questionnaire was designed by the researcher to determine students' perceptions of agricultural education classes, the teacher, the FFA organization, and the supervised agricultural experiences program. A quantitative approach was used to conduct the study. Two techniques were used to obtain information: (1) historical research through literature review and (2) a bilingual mailed questionnaire for Latino students in the Iowa secondary agricultural education program. Their use in this study will be explained next.

Historical Research

Historical research was employed to obtain a better understanding of the issues surrounding the recruitment of Latino students and other minorities into agricultural education programs. To understand Latinos in agriculture, a historical look at the enablers, barriers, and issues of the secondary agricultural education program was essential to acquire information for this study. This information provided a foundation to understand the perspectives of Latino students towards agriculture and described their characteristics in the program.

The Survey Instrument

Prior to the mailing of the survey instrument, a letter of approval was delivered to the schools asking administrators, agriculture teachers, parents, and students for their participation in the study (See Appendixes B, C, D and E). Once the researcher obtained their consent, the survey was sent out by mail to be administered by the teacher and filled by the students. Once the questionnaires were completed, the teacher had the responsibility to mail it to the researcher using a prepaid envelope that was provided by the researcher.

To reach students with language difficulties, the researcher developed a bilingual questionnaire in Spanish and English. The survey consisted of 62 questions designed to explore attitudes towards: (1) agricultural classes, (2) the performance of the teacher, (3) the FFA organization, and (4) supervised agricultural experiences. In addition, the questionnaire provided an opportunity to understand the post secondary aspirations of the students and their preferred agricultural careers. The survey was innovative because it was designed to break the language barrier successfully to obtain data from students with language difficulties. See Appendix F.

Population and Sample

The sample population for this study was composed of 30 students of Latino origins from a reported population of 93 students in the secondary agricultural education program. The researcher selected the sample from four rural schools to target the largest population of Latino students during the academic year 2005-2006. In addition, the students that volunteered for the study came from schools with four common characteristics. Schools (1) offered secondary agricultural education classes, (2) maintained an overall large population of Latino students, (3) the main pull factor for immigrants in the community was the food processing industries, and (4) enrolled a constant population of 10 or more Latino students per semester in agricultural education classes. These schools were located in the Iowa communities of Columbus Junction, Denison, West Liberty, and Muscatine.

In 2005, the researcher asked the teachers in the selected schools to provide the total number of Latino students enrolled in agricultural courses. As a result, teachers reported a total population of 93 individuals. Of these, a group of 30 students (32%) were used for data analysis and a group of 10 volunteers (11%) for validity purposes. See Table 1.

Table 1. 2005 Population of Latino Students in Selected Schools.

Community Schools	Available Population	Data Analysis	Validity Test
1. Columbus Junction	50	7.5	2.5
2. Denison	23	7.5	2.5
3. Muscatine	10	7.5	2.5
4. West Liberty	10	7.5	2.5
Total Population	93	30	10
Total Percent	100%	32%	11%

N=30

Development of the Instrument

The questionnaire was a bilingual instrument (Appendix F) developed by the researcher. It contained five different areas: Section I measured the overall perspective of students towards the agricultural education program. Section II measured their attitudes towards the class. Section III measured the perspective of students towards their local FFA organization. Section IV explored attitudes towards supervised agricultural experiences and Section V, asked questions regarding to post-secondary aspirations. The degree of agreement was determined using a Likert-Type scale consisting of the following choices: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, and (5) Strongly Agree.

Validity

Expert advisors consisting of faculty and staff in the Department of Agricultural Education and Studies and the Office of Human Subjects at Iowa State University reviewed the instrument for corrections. (Appendix G). The advisors determined the face, content, and construct validity of the instrument. Based on the recommendations of the panel of reviewers, revisions were made to the instrument as directed. A cover letter (Appendix H) and instrument were mailed to 10 students randomly selected from the target population who were not participants in the study.

Reliability

Reliability estimates were calculated on questions 41 to 62 of the questionnaire to establish internal consistency. Cronbach's alpha was used to determine the extent to which a measure yield consistent results or are free from random error. The reliability test produced a determined result of .86 from the random sample indicating the internal consistency to which the test assessed skills, characteristics and perception of student.

Instrument Administration

A mailed package consisting of a cover letter, an approved questionnaire, and a self-addressed, stamped envelope were mailed to the schools in November of 2005. A follow-up letter (Appendix J) was emailed approximately three weeks later. A second letter accompanied with a second complete packet of material was mailed to non-respondents approximately two weeks after the first mailing. A thank you letter (Appendix K) was included in the mailing. A total of 30 respondents completed the questionnaire for a response rate of 32% from the available population for data analysis (N=93). Data were tabulated seven weeks after the initial mailing by the researcher.

Data Analysis

Quantitative data were analyzed using descriptive statistics and measures of central tendency. The Statistical Package for the Social Sciences (SPSS) version 11.5 was used to analyze and interpret the data. Statements left blank were coded as missing data. A priori to test for significance at the .05 alpha levels was used in this study. Descriptive statistics used to analyze and interpret data included means, standard deviations, frequencies, and percentages.

The researcher gathered innovative data on Latino students during the year 2005 utilizing the methodology described in this chapter. This information is crucial to increase the participation of Latino students in secondary agricultural education program and to guide them towards higher educational achievements. Therefore, agriculture teachers, faculty, and administrations would greatly benefit from the findings that will be presented in the following Chapter IV.

CHAPTER IV. FINDINGS

Chapter I described the situation of minority students in the Iowa agricultural education program. Chapter II provided the theoretical framework for the study. Research and literature related to the perceptions of minority students toward agricultural education classes, the FFA organization and supervised agricultural experiences were discussed, along with what influences the role of Latino students in agriculture. Chapter III described the methods used to address the objectives of the study. The research design was discussed including the population sample and the administrative development of the survey instrument. Furthermore, it explained how the validity, reliability, and data were performed at the conclusion of the chapter. This chapter presents the findings obtained from the study. Questions addressed in the results of the study reflect the experiences and opinions of Latino students in the secondary agricultural education program in selected Iowa high schools. Their responses are described below.

Response Rate

During the 2005-2006 school year, agricultural education teachers in Columbus Junction, Denison, Muscatine, and West Liberty schools had a total of 93 Latino students enrolled in their courses. Of these, 30 students volunteered to participate in the study and ten in a pilot study. A packet containing instructions, copies of the survey, supplies, and a thank you letter was mailed to the schools early in November 2005. The participants volunteered to sign a student assent form and obtain parental consent before completing the survey. See Appendices D and E. Teachers then solicited the participation of students in the program and once they obtained the signed consents he/she proceeded to administer the survey in the classroom.

Demographic Characteristics

The gender ratio of this study comprised 70% male and 30% female. Females responded to the survey study in lesser numbers than males. Their grade levels revealed that the majority (46%) of the respondents were in the 10th grade followed by 9th graders (20%). The lowest percentages of participants (17%) came from the 11th and 12th (17%) grade school levels. See Figures 1 and 2.

Figure 1. Gender Ratio

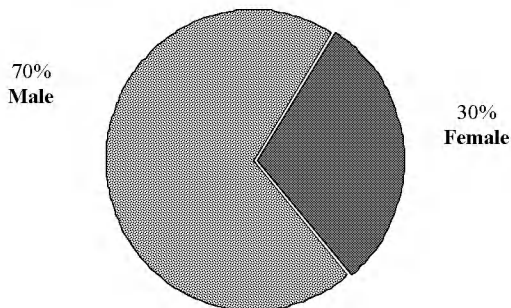
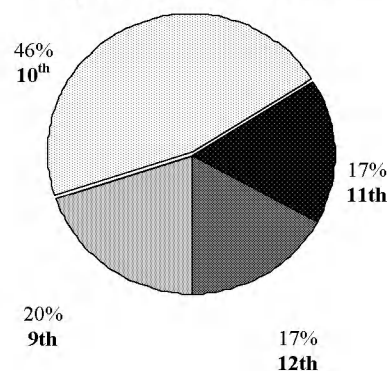


Figure 2. Grade Levels



Figures 1 and 2. Illustrated are the gender ratio and the grade level of the surveyed students. Males dominated the strata of the study with a larger population whereas females participated in small numbers. The 10th grade produced the greatest proportions of participants next to the 9th grade. However, the fewer numbers came from the 11th and 12th grades conjunctively.

Average Ages

The majority (36%) of the respondents in the study were 16 years old. Twenty-eight students had 15 years and seventeen percent had 18 years of age. The remaining fraction of the group had students who were fourteen (11%), seventeen (6%), and nineteen (2%) years old. Figure 3 illustrates the average age the participant students.

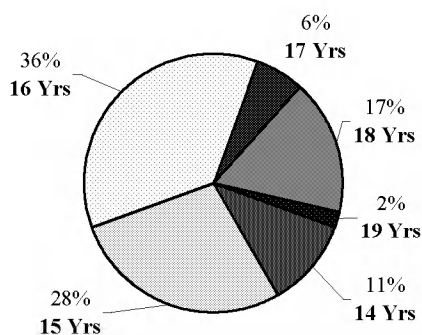
Figure 3. Average Ages

Figure 3. Illustrated is the average ages in percentages of the students that participated in the study. The most common ages in the surveyed group were 16, 15, and 18 years old. Lesser numbers of students with ages 17, 14, and 19 were also found in the remaining percentages.

Students with Family Members Working in Agriculture

To understand the familiarity of the students with agriculture, the researcher looked to understand if the volunteers had a family member working in agricultural industries. The study found, that 45% of the surveyed students “had” relatives working in the agriculture industry. However, the majority (55%) “Did not have” family members working in agricultural industries. See Figure 4.

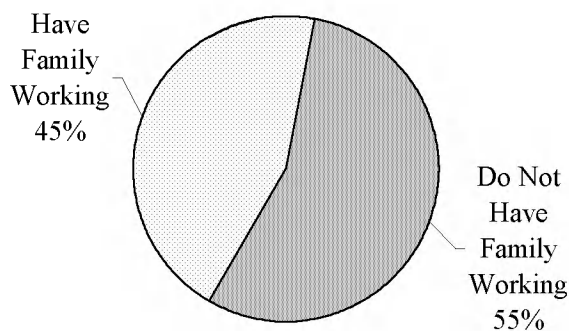
Figure 4. Students with Family Members Working in Agriculture

Figure 4. Displayed are the percentages of participants with family members working in agriculture. The percentages obtained revealed the fact that slightly over half of the sampled students in the Iowa secondary agricultural education program “did not” had family members working in agricultural industries and slightly under half of the group had family members working in agriculture.

General Perspectives towards the Agricultural Education Program

Table 2 presents the perspectives of students towards the agricultural education program and its experiential components. Fifty percent of the participants rated the agricultural education class as a “good” course in which to participate while in high school. In addition, 30% described the class as a “satisfactory” course to participate and 13% think that it was a “very good” subject to learn. However, less than 7% believed that the agriculture class was a “poor” or “very poor” course to enroll.

The Performance of the Teacher

Regarding the performance of the teacher, a large group of students (47%) agreed that their teachers were “good” performers in the classroom and that they were also “very good” in their professions (37%). Only a few number of the students (10%) rated the job of the teacher as “satisfactory” and a lesser amount (7%) thought of it as “poor.” Not one participant rated the performance of the teacher in the agricultural classroom as “very poor.”

Agricultural Knowledge

Agricultural knowledge is disseminated in the agricultural education program curriculum. When asked by the researcher to rate their knowledge in agriculture, 47% of the participant students answered that they have “good” knowledge on the subject and 33% claimed to have a “satisfactory” understanding of agriculture. Just 10% of the sample

population stated to have a “very good” agricultural knowledge and none responded to have a “very poor” knowledge of agriculture.

Agricultural Experiences

Participating in the agricultural education program helps the students obtain agricultural experiences. The majority (47%) of the sampled population confirmed to have “good” agricultural experiences and 33% described theirs as “satisfactory” ones. Only a slight percentage (3%) of the surveyed students rated their experiences in agriculture as “very good.” However, 13% confirmed to have obtained “poor” or “very poor” agricultural experiences (3%) participating in agricultural education classes (Table 2).

Leadership Skills

Leadership skills are an essential part of the agricultural education program. This study found that half of the sample group (50%) in the agricultural education program has “satisfactory” leadership skills and 30% have “good” ones. Just a small percentage (10%) acknowledged having “very good” abilities leading others and less than 7% confirmed to possess “poor” or “very poor” skills (3%).

The FFA and SAE Programs

In general, (37%) of the students demonstrated to have “good” and “satisfactory” attitudes regarding their local FFA organization. A lesser amount (13%) declared to have a “very good”, “poor”, or “very poor” opinion about the FFA organization in their schools. However, in the supervised agricultural experience program, a great number of the sample population (40%) considered the experiences as “good” components of the class. In addition, 33% the students confirmed to have “satisfactory” practices and 20% distinguish their as

“very good” ones. Less than 13% of the sample rated the class and its learning components as “poor” or “very poor.” See Table 2 for a detailed illustration.

Table 2. General Student Ratings towards the Agricultural Education Program

Class Components	Rating Scale and Percentages				
	Very Good	Good	Satisfactory	Poor	Very Poor
Agricultural Class	13.3%	50%	30%	3.3%	3.3%
Teacher Performance	37%	47%	10%	7%	—
Agricultural Knowledge	10%	47%	33%	7%	—
Agricultural Experience	3%	47%	33%	13%	3%
Leadership Skills	10%	30%	50%	7%	3%
FFA organization	13%	37%	20%	13%	13%
SAE activities	20%	40%	33%	7%	—

N=30

Effectiveness of the Agricultural Education Teacher in the Classroom

The effectiveness of the agricultural education teacher in helping students to learn about agriculture is a relevant variable measured in this study. A majority (40%) of the respondents rated the effectiveness of the teacher as “almost always effective” and as “usually effective” (40%) teaching agricultural subjects (Figure 5). No more than 17% of the sample considered the teacher as “sometimes useful” and only 3% indicated that their teachers are “rarely effective” teaching agriculture.

Figure 5. Effectiveness of the Agricultural Education Teacher in the Classroom

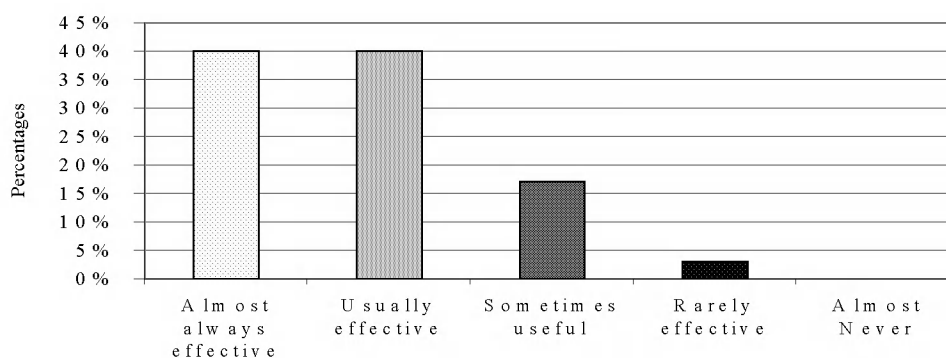


Figure 5. Demonstrated in percentages are the characteristics that describe the effectiveness of the agricultural education teacher in the classroom. The results indicated that the teacher is “almost always” or “usually” effective teaching agricultural subjects to the students. Lesser percentages of students believe that the teacher is “rarely” effective. Not a single student identified their teacher as someone “almost never” effective teaching in the classroom.

Reasons for Latino Students to Enroll in Agricultural Education Classes

Regarding agricultural education classes, 30% of the respondents “did not know” why they were enrolled in agricultural education courses. This can mean that someone else enrolled them without any substantial personal interest in the class. On the other hand, the remaining fraction affirmed to be enrolled because they have “friends in the class” (17%) and because they have “technological interest” (17%). A lesser amount (13%) of the respondents participated in the course as a result of their “agricultural interest” (13%) or because they “like the agriculture teacher” (13%).

However, less than 10% enrolled in the class because they were interested in the FFA organization, or had a “scientific interest” for the course. “Supervised agricultural experiences” were unpopular reasons to enroll in the program. Only three percent from the group declared to have enrolled in the program looking for “supervised experiences in agriculture” or for “other” reasons. None responded to have enrolled in agricultural education classes due to their interest in the “4-H Club.” See Table 3.

Table 3. Reasons for Latinos to Enroll in Agricultural Education Classes

Reasons to Enroll	Percentages
Do not know	30%
Friends in the class	17%
Technological Interest	17%
Agricultural Interest	13%
Like the teacher	13%
Interested in FFA	10%
Scientific interest	10%
Interested in SAE	3%
Interested in 4H club	0%
Other*	3%

N=30

Promoters of Agricultural Education Classes

Another aspect of the study reveals those responsible for encouraging Latino students to participate/enroll in agricultural education classes. The main promoters accountable for encouraging students to participate in agricultural classes were “friends” (30%) and “teachers” (30%). The “advisor” (27%) of the school also played an important role in the recruitment of students into the agricultural program. “Other” sources (13%) were also selected and the least encouraging were “parents” (3%). See Figure 6.

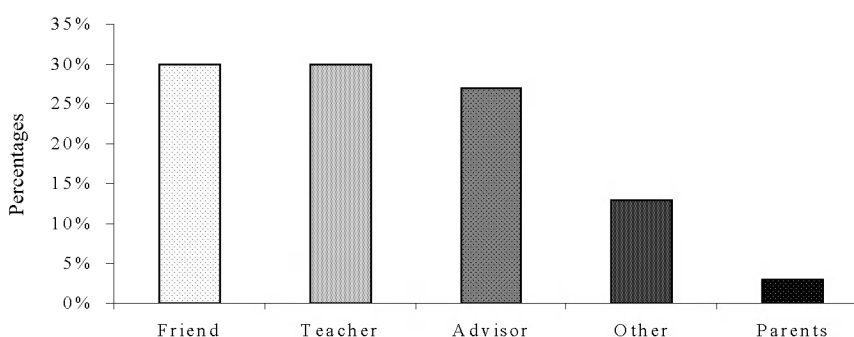
Figure 6. Promoters of Agricultural Education Classes

Figure 6. Illustrated in percentages are the persons that encouraged the surveyed students to participate in the secondary agricultural education program. In general, the persons that influenced them the most were “friends”, “teachers” and “advisors.” “Other” persons were also selected but in small percentages. However, the least encouraging person was their “parents” who according to the results did not influenced them to become fully involved with the agricultural program.

Preferred Features of the Agricultural Education Class

According to participant students, the preferred features of agricultural education classes were: (1) hands-on experiences (53%), (2) “agricultural subjects” (27%), (3) “agricultural activities” (23%), “community service” (23%), and “organizations and activities” (17%). The characteristic least enjoyed by the students was found to be the “scientific subjects” taught in the class (7%). See Figure 7.

Figure 7. Preferred Features of the Agricultural Education Class

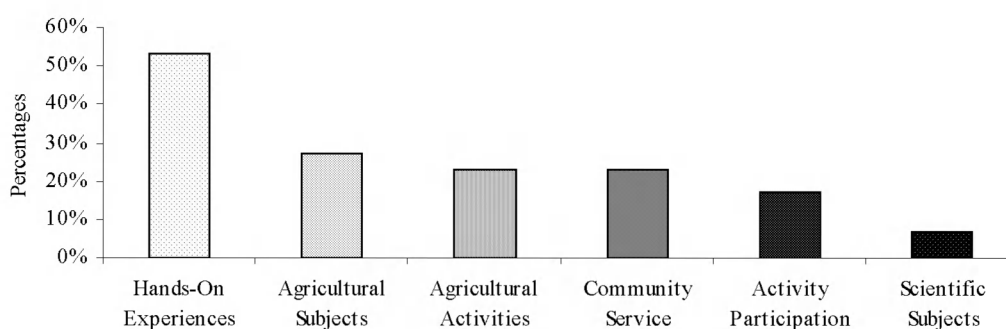


Figure 7. Illustrated are the preferred features of agricultural education classes according to the students. “Hands on experiences” was one of the favorite features of the class next to “agricultural subjects”, “community services” and “agricultural activities.” The least favorite

features in the class were “participating in organizations” and the “scientific subjects taught in the classroom.”

Learning Level in Agricultural Education Classes

In agricultural education classes, 62% of the participants agreed that they have learned “more than usual”, 30% “about as much as usual”, and 7% “an exceptional amount.” None reported to have learned “less than usual” or “almost nothing” in the agricultural classes (Figure 8).

Figure 8. Learning Level in Agricultural Education Classes

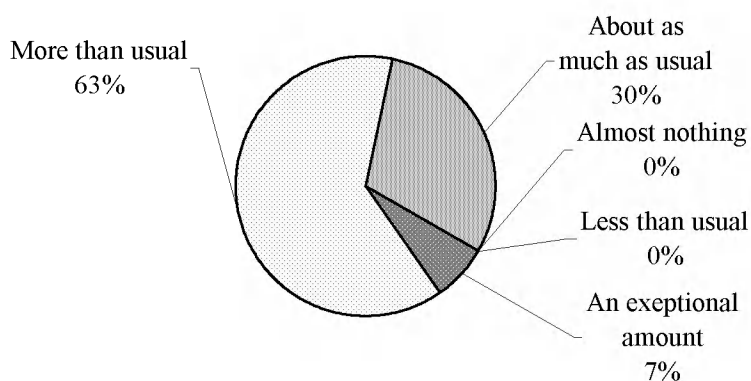


Figure 8. Demonstrated are percentages describing the amount learned as a result of participating in agricultural education classes. In general, participants acknowledged to have learned “more than usual” from agricultural related classes. The next percentages of students revealed that they have learned “about as much as usual” or “an exceptional amount while participating in the course. No student in the study declared to have learned “almost nothing” or “less than usual” in agricultural classes.

Difficulty Level of Agricultural Education Classes

The difficulty level of agricultural classes was measured to understand the students' learning experience in the classroom. Seventy percent of the sample described agricultural education classes to be “about average” and 20% as an “easier than average” course. Less than 10% of the respondents depicted the class to be “among the easiest”, “more difficult than average”, or “among the most difficult” ones to take while in high school. See Figure 9.

Figure 9. Difficulty Level of Agricultural Education Classes

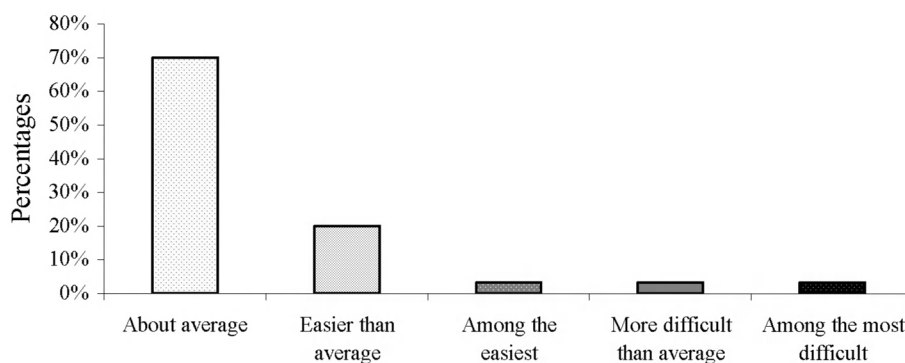


Figure 9. Displayed in percentages are the difficulty levels of agricultural classes according to participants. Students affirmed in great numbers that agricultural education classes were “easier than average” when compared with other courses. A small percentage considered the course to be ‘among the easiest’, ‘more difficult than average’, or “among the most difficult” classes taken by the students. .

Time Dedicated Studying for Agricultural Education Classes

The average time that Latino students' spend studying for agricultural education classes was determined in this study. On a daily basis, 77% of the sample population reported to dedicate “less than 30 minutes” studying for agricultural education classes.

Thirteen percent studied “more than 30 minutes”, 7% spend “less than 60 minutes”, and only 3% of the participants studied “more than 60 minutes” per day for the class. See Figure 10.

Figure 10. Time Dedicated Studying for Agricultural Education Classes

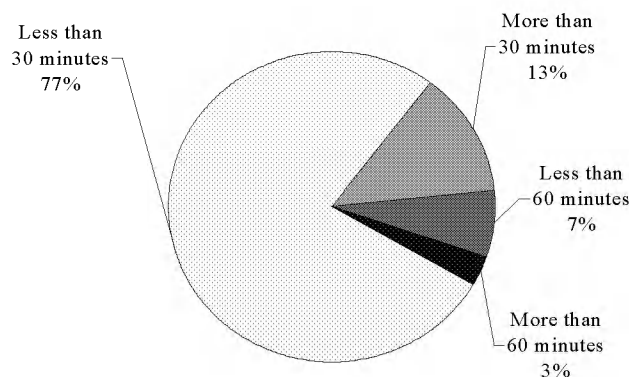


Figure 10. Displayed in percentages is the amount of time dedicated on a daily basis studying for agricultural education classes. The results uncovered the fact that students generally dedicate “less than 30 minutes” studying for agricultural education classes. A slight percent of students dedicated “more than 30 minutes” to the class and a small fraction studied “less” or “more” than 60 minutes.

Effectiveness of the Assignments in Agricultural Education Classes

The effectiveness of the assignments in helping the students to learn about agriculture was also an important issue in this study. A majority (47%) rated the assignments of the class as “sometimes useful” in helping them to learn agriculture. In second place was the “usually effective” option with 36% followed by “almost always effective” with a 17% of the sample population. None of the participants rated the assignments as “rarely effective” or “almost never effective.” Figure 11 illustrates the effectiveness of the assignments in the agricultural class.

Figure 11. Effectiveness of the Assignments in Agricultural Education Classes

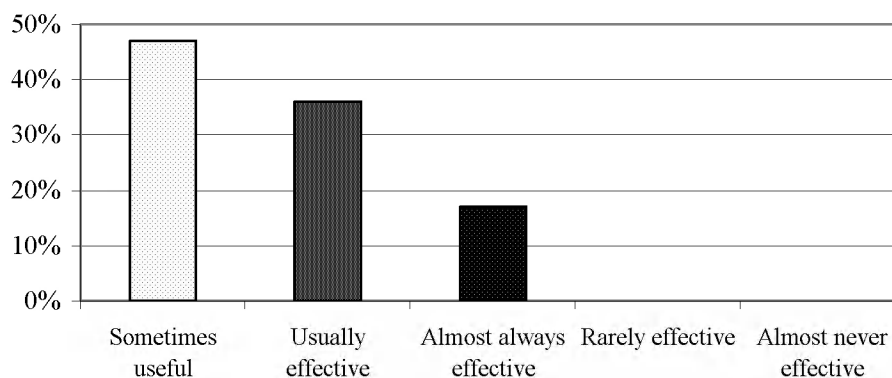


Figure 11. The bar chart displays the effectiveness of the assignments in agricultural education classes as expressed by students. The majority said that assignments were “almost always” (17%) or “usually” (36%) useful while less than half (47%) said they were “sometimes useful” in helping them to learn agriculture. None of the surveyed students declared that the assignments were “rarely” or “almost never” effective methods of instruction.

Time Dedicated Completing Assignments for Agricultural Education Classes

Assignments are an essential element in the learning process of any agricultural class. In this study, 63% of the participants reported to dedicate “less than 30 minutes” completing their assignments for the class. Thirty three percent spend “more than 30 minutes” and 3% “more than 60 minutes” carrying out their assignments. None responded to dedicate “less than 60 minutes” completing their coursework (Figure 12).

Figure 12. Time Dedicated Completing Assignments for Agricultural Education Classes

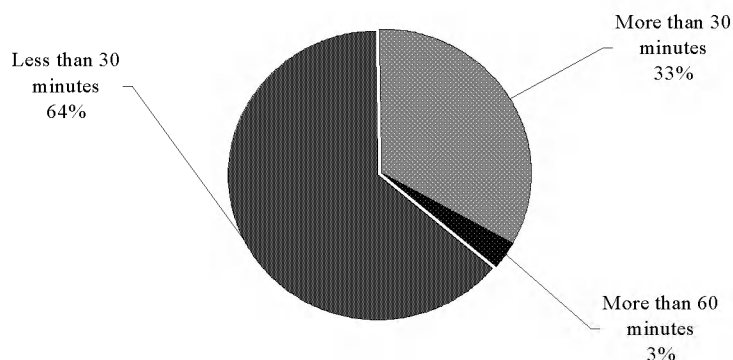


Figure 12. Demonstrated in the pie chart is the time dedicated to complete the assignments for agricultural education classes. According to the majority of students they normally dedicate “less than 30 minutes” per day completing assignments for the course. Only a small fraction devotes “more than 30 minutes” and a lesser number invest “more than 60 minutes” carrying out the assignments for the class.

Improved Skills in Agricultural Education Classes

Table 4 shows the professional skills that participants improved as a result of participating in agricultural education classes. Students were “undecided” if they improved their skills while participating in the course. Measured by means, the highest skills belonged to “teamwork” (3.73), “thinking” (3.70), and “creativity” (3.63). “Communication” and “decision making” followed with means of 3.56 each. In addition, participants were also “undecided” if they had improved their skills “listening” (3.50), “solving problems” (3.36), or enhanced their “technical skills” (3.26). However, a mean of 2.80 demonstrated that students “disagreed” with the statement that they improved their “leadership” abilities in agricultural education classes. See Table 4.

Table 4. Professional Skills Improved in Agricultural Education Classes

Skills	Mean	Standard Deviation
Teamwork	3.73	1.17
Thinking	3.70	1.08
Creativity	3.63	1.09
Communication	3.56	1.30
Decision Making	3.56	1.00
Listening	3.50	1.07
Problem Solving	3.36	.764
Technical	3.26	1.04
Leadership 1	2.80	1.00

N=30

Note: Highest mean = 5.00

Legend: 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree

Treatment of Latino Students in Agricultural Education Classes

This study examined how students felt treated in agricultural education classes. In 53% of the cases respondents felt that they were treated with “a lot of respect” in the classroom. Moreover, 40% believed that they were treated with “average respect” and only less than 7% felt treated with “a few” or “without respect.” See Figure 13.

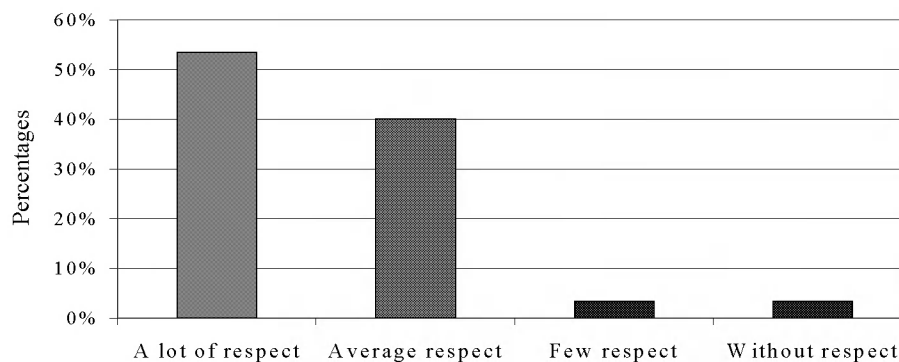
Figure 13. Treatment of Latino Students in Agricultural Education Classes

Figure 13. Illustrated in the bar chart are the opinions of students with regards to the way they are treated in agricultural classes. The information obtained reveals that the students

feel that they are treated with “a lot” or “average respect” in agricultural related classes.

Only a small number of participants felt treated with “few” or “without” respect.

Willingness to Recommend Agricultural Classes

Of the total population of participants in the study, the majority (93%) agreed that they “will recommend” a friend to enroll in agricultural education classes. Only a minority group (7%) disagreed and “will not recommend” the class to a friend (Figure 14).

Figure 14. Willingness to Recommend Agricultural Classes

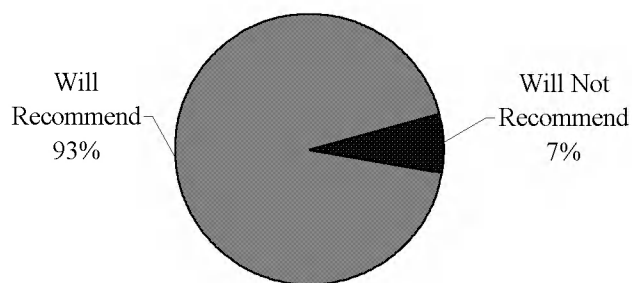


Figure 14. Illustrated is the eagerness of the surveyed students to recommend agricultural education classes to a friend. The vast majority of the students “will recommend” a friend to participate in agricultural education whereas a very few “will not” recommend a friend to participate in agricultural courses.

Knowledge Obtained in Agricultural Education Classes

Generally, participant students were “undecided” if they had obtained knowledge as a result of participating in agricultural education classes. The larger means obtained in agricultural classes corresponded to “technology” (3.56), education (3.50), “science” (3.40), natural resources (3.26), “food production” (3.43), and “agriculture” (3.23). All means indicated an “undecided” feeling among participants in this study based on the given criteria. See Table 5.

Table 5. Knowledge Obtained in Agricultural Education Classes

Knowledge Obtained	Mean	Standard Deviation
Technology	3.56	.935
Education	3.50	1.07
Food Production	3.43	.817
Science	3.40	.968
Natural Resources	3.26	1.08
Agriculture	3.23	1.10

Note: Highest mean = 5.00

Legend: 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree

Latin American Members in the FFA Organization

The FFA organization plays a key role in the delivery of leadership skills for students participating in the secondary agricultural education program. Enrollment in such a program can increase the academic achievements and potential of students in the agricultural sciences. This study revealed that 80% of the respondents were “non-members” of the FFA organization while 20% of the other students in the population sample comprised the only “members” in the leadership organization (Figure 15).

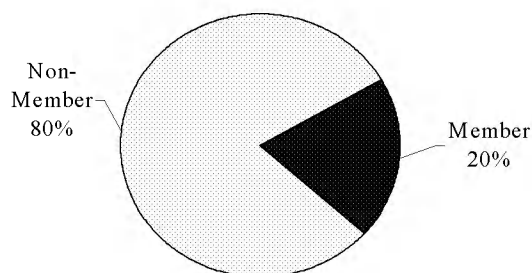
Figure 15. Latin American Members in the FFA Organization

Figure 15. Presented in the chart are the percentages of members and non-members in the FFA organization at the time of the study. The majority of the surveyed students were not

members of the FFA and only a small fraction of the group participated in the leadership organization.

Reasons to Participate in the FFA Organization

In the survey, students that indicated to be FFA members indicated their reasons to participate in their local organizations. Table 6 reveals that the majority (17%) of students in the survey selected “agricultural experiences” as their main reason to participate in the FFA organization. In addition, students selected opportunities for “community service” (13%) as another main reason to become a member of the organization. Other reasons included “agricultural subjects” (7%), and “agricultural industry” (7%). The remaining percentages indicated lesser interest towards “scientific subjects” (3%), educational activities (3%), “language practice” (3%), and “leadership opportunities” (3%). However, the remaining fraction (10%), enrolled in the FFA organization for “other” reasons. See Table 6.

Table 6. Reasons to Participate in the FFA Organization

Reasons	Percentages
Agricultural experiences	17%
Community service	13%
Agricultural subjects	7%
Agricultural industry	7%
Scientific subjects	3%
Educational activities	3%
Language practice	3%
Leadership opportunities	3%
Other	10%

N=30

Reasons Not to Participate in the FFA Organization

The main reason given by students not to become members of the Local FFA organization was because they “did not have time”(20%) to participate in the activities. 13% “did not like the activities” or “did not have money” to participate while ten percent of the sample population “did not feel welcome” in their local FFA organization. In addition, 10% of the students did not participate because they “thought it was a waste of time” or simply because they “have not been asked” (10%) to join the organization. A few students (7%), demonstrated to “have language difficulties” that might prevent them from improving their skills in the FFA organization. A large proportion of the sample (20%) provided “other” reasons not to participate in FFA demonstrating lack of knowledge of the opportunities available for leadership development in the agricultural education program. See Table 7.

Table 7. Reasons Not to Participate in the FFA Organization

Reasons	Percentages
Do not have time	20%
Do not like the activities	13%
Do not have money	13%
Do not feel welcome	10%
Think it's a waste of time	10%
Have not been asked	10%
Have language difficulties	7%
Other	20%

N=30

Promoters of the Local FFA Organization

Table 8 illustrates those responsible for encouraging students to participate in the FFA organization in their schools. The leading persons responsible for encouraging students to participate in the leadership organization were “teachers” (67%) and “friends” (27%). The

“advisor” (7%) of the school also played a key role in the recruitment of students. In addition, “family members” (3%), “magazines” (3%) and “Internet” (3%) sources obtained the lesser percentages. None indicated “parents” as an encouraging source for their local FFA organization. However, participants also selected “other” encouraging promoters of their local FFA chapter. See Table 8.

Table 8. Promoters of the Local FFA Organization

Promoters	Percentages
Teacher	67%
Friend	27%
Advisor	7%
Family	3%
Magazine	3%
Internet	3%
Parents	
Other	13%

N=30

Professional Areas of Interest in the Local FFA Organization

The main area of interest for participants was “horticulture” with 47% of the sample population selection. Thirty percent of the sample selected “agribusiness” as an area of interest and 23% have a greater interest for “agricultural mechanics. In addition, 10% were attracted by the “food processing” area, a small fraction (3%) was interested in “livestock judging” and 3% in “soil management.” None selected “meat evaluation” as an area of interest in the FFA organization. See Table 9.

Table 9. Professional Areas of Interest in the Local FFA Organization

Professional Areas	Percentages
Horticulture	47%
Agribusiness	30%
Agricultural mechanics	23%
Food science	10%
Livestock judging	3%
Soil management	3%
Meats evaluation	—

N=30

Educational Areas of Interest in the Local FFA Organization

The sample population in the following order determined the educational areas of interest in the Local FFA Organization. The largest percentage (37%) was obtained in “other” educational areas. The remaining portion of students selected “parliamentary procedures” (20%) as well as “agricultural broadcasting” (13%) and the opportunity to “conduct meetings” (13%) as areas of interest. Moreover, participants were also interested in “creed speaking” (10%) “public speaking” (10%), and a lesser number in “chapter participation” (3%). Such facts demonstrate the lack of participation of students in the leadership FFA organization. See Table 10.

Table 10. Educational Areas of Interest in the Local FFA Organization

Educational Areas	Percentages
Parliamentary procedures	20%
Ag Broadcasting	13%
Conducting meetings	13%
Creed speaking	10%
Public speaking	10%
Chapter participation	3%
Other	37%

N=30

Interest to Participate in the FFA Organization

Participation in the FFA local organization demonstrated a great lack of interest from the students and a need for informational materials for the population. Fifty-nine percent of the sample population was “undecided” about participating in the local FFA organization, 34% confirmed to be “not interested” and just 7% demonstrated “interest” to participate in the FFA organization. The ratio in which students participated in their local FFA chapters demonstrated lack of knowledge regarding the benefits of the national organization (Figure 16).

Figure 16. Interest to Participate in the FFA Organization

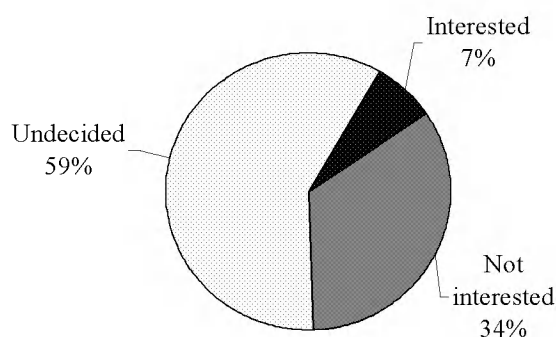


Figure 16. Illustrated in percentages is the interest of the students to participate in the local FFA organization. The majority of FFA non- member students demonstrated to be “undecided” about participating in their local FFA chapter. A small group of students confirmed to be “interested” in participating more often. However, the remaining large fraction of the group remained “not interested” in the FFA.

Willingness to Recommend the FFA Organization

From the population, a general majority (80%) agreed that they “would recommend” a friend to become a member of the FFA organization. On the other hand, the remaining fraction of the group (20%) disagreed with the majority and “would not” recommend a friend to participate in the leadership organization. See Figure 17.

Figure 17. Willingness to Recommend the FFA Organization

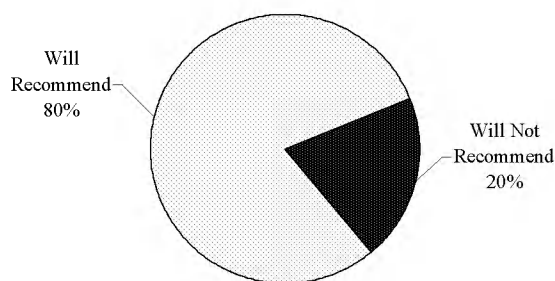


Figure 17. Displayed in percentages is the enthusiasm of students to recommend a friend to participate in their local FFA organization. A large percentage of students “will recommend” a friend to participate in the FFA and a small group “will not.” Note that the percentage of students who “will recommend” the FFA is similar with the “non-member group” from Figure 15.

Participants in Supervised Agricultural Experiences

Supervised Agricultural Experiences is one of the learning components of the Secondary Agricultural Education Program. This study demonstrated that 67% of the sample population was “non participant” in the supervised agricultural experiences (Figure 18). No more than 33% of the students were “participants” in Supervised Agricultural Experiences.

Figure 18. Participants in Supervised Agricultural Experiences

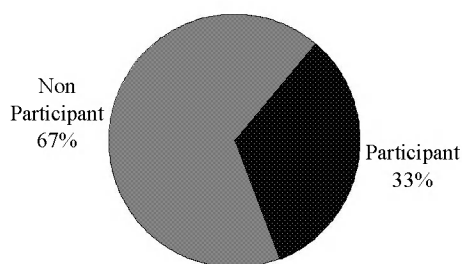


Figure 18. Displayed are the percentages of participants and non-participants in the supervised agricultural experiences program at the time of the study. The information revealed that a majority of the student were “non participants” in the supervised agricultural experiences program. A small number of students only were “participants” in the program.

Reasons to Participate in Supervised Agricultural Experiences

Several reasons were selected as main reasons to participate in supervised agricultural experiences. The most popular reasons for students to enroll were “hands-on experiences” (30%), “scientific subjects” (13%) and the “agricultural subjects”(10%) that the program allowed students to experience (Table 11).

Eight percent selected “agricultural industries jobs” as a reason to participate in the activities and just 3% of the sample was involved in the experiential program due to the “professional activities” or to “obtain knowledge of the agricultural industries.” Moreover, students did not get involved in the supervised experience program to “practice the English language.” Students also demonstrated to have “other” reasons (3%) to participate in the experiential program.

Table 11. Reasons to Participate in Supervised Agricultural Experiences

Reasons to Participate	Percentages
Hands-on experiences	30%
Scientific subjects	13%
Agricultural subjects	10%
Agricultural jobs	8%
Agricultural industries	3%
Professional activities	3%
Practice the English language	
Other	3%

N=30

Reasons Not to Participate in Supervised Agricultural Experiences

Table 12 demonstrates the reasons why students choose not to participate in the supervised agricultural experiences program. Regarding active participation, a large fraction of the sample revealed that they “did not like the activities” (17%), and “did not have time” to participate in the program (17%). The remaining portion considers it “a waste of time” (13%). In addition, 10% of the sample population “have not been asked to participate” in the activities and just 3% claimed to “have language difficulties” that impeded them from participating in supervised experiences. Table 12 illustrates that 3% of the sample population did not participate in supervised experiences activities because they “did not feel welcome” in the experiential program. In addition, none selected the option “did not have transportation” as a reason to not participate in SAE activities.

Table 12. Reasons Not to Participate in Supervised Agricultural Experiences

Reasons	Percentages
Do not like the activities	17%
Do not have time	17%
Think its a waste of time	13%
Have not been asked	10%
Have language difficulties	3%
Do not feel welcome	3%
Do not have transportation	
Other	7%

N=30

Willingness to Recommend Supervised Agricultural Experiences

The sample population in this study demonstrated that 82% “would recommend” supervised agricultural experiences to a friend. Only 18% does not agree and “would not recommend” agricultural experiences as part of their learning process. See Figure 19.

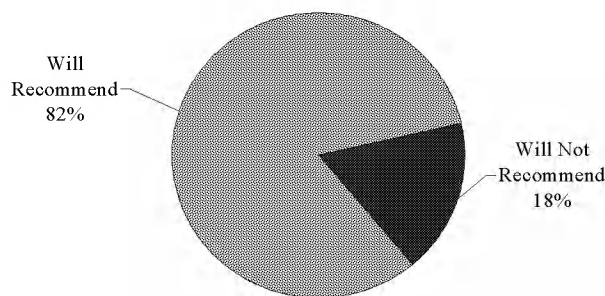
Figure 19. Willingness to Recommend Supervised Agricultural Experiences

Figure 19. Illustrated is the enthusiasm of students to recommend a friend to participate in supervised agricultural experiences. The majority of the students indicated that they “would recommend” a friend to participate in agricultural experiences while in secondary school. Only a small group declared that they “will not” recommend supervised activities to a friend.

Student-Parent College Conversation

In order to find out if students discuss the issue of attending college with their parents, participants in the study were asked if they have talked with their parents about college. This study revealed that 90% of the participants “have talked” with their parents at home about college. Just 10% of the sample population of students “has not talked” to their parents about college (Figure 20).

Figure 20. Student-Parent College Conversation

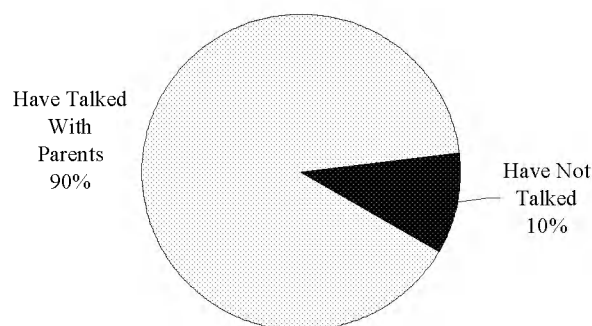


Figure 20. Illustrated in percentages are the answers of students when asked if they have talked with their parents about a college education. The majority of the students indicated that they “have talked with their parents” about college. ” Only a slight number declared to “have not talked” about a further education at home with their parents.

Post-Secondary Careers of Choice

The majority (40%) of participants selected “other” career as their options to study after graduating from high school. The three other major post-secondary careers of choice as selected by participants were “science” (20%), “technology” (20%), and “education” (17%). In lesser numbers, 13 percent of the sample preferred “liberal arts”, “agriculture” (10%) and

“engineering” (10%). Just seven percent of the participants would like to pursue a career in an “agricultural business” (Table 13).

Table 13. Post-Secondary Careers of Choice

Careers of Choice	Percentages
Science	20%
Technology	20%
Education	17%
Liberal arts	13%
Agriculture	10%
Engineering	10%
Agribusiness	7%
Other	40%

N=30

Career Choices in Agricultural Education Classes

To understand the professional career objectives of the sample group, the researcher evaluated their personal preferences. In general, the largest mean on table 6 illustrates that participants were somewhat “undecided” to follow a professional career in design (3.30) and business (2.93), as a result of participating in agricultural education classes. In addition means in the table indicate that participants will also choose careers in: liberal arts & sciences (2.86), engineering (2.83), human sciences (2.82), and agriculture (2.66). However, the smallest mean was from participants that were almost “undecided” about choosing a career in the area of or veterinary medicine (2.53). See Table 14.

Table 14. Career Choices in Agricultural Education Classes

Careers	Mean	Standard Deviation
Design	3.30	1.08
Business	2.93	1.11
Liberal arts & sciences	2.86	1.22
Engineering	2.83	1.23
Human sciences	2.82	1.10
Agriculture	2.66	1.24
Veterinary medicine	2.53	1.30

Note: Highest mean = 5.00

Legend: 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly Agree

Considerations towards Enrolling in a University

Participants agreed by a majority (67%), that they “had considered” enrolling in a university after graduating from high school. Twenty percent were “undecided” about pursuing a university career and 13% “have not considered” yet to attend college after graduation. See Figure 21.

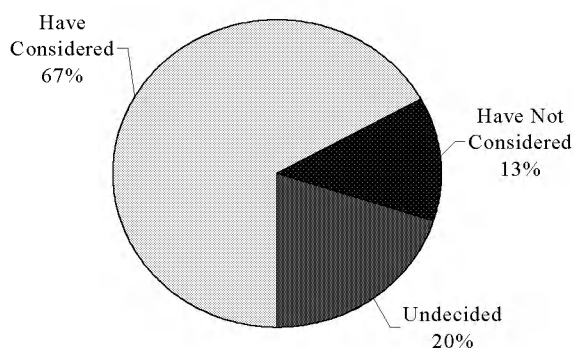
Figure 21. Considerations toward Enrolling in a University

Figure 21. Displayed are the considerations of students towards obtaining a university education. These reveal that a large number of participants “considered” attending a

university if given the opportunity and a minority portion is still “undecided” about attending a university. Only a small fraction of the group “have not” considered obtaining a university career.

Consideration towards Enrolling in a Community College

The perspective of participants towards obtaining an education in a community college demonstrated, that the majority (43%) of participants “considered” attending a community college after graduating from high school and that 32% “have not”. A quarter of the population sample (25%) was “undecided” about attending a local educational community institution (Figure 22).

Figure 22. Consideration towards Enrolling in a Community College

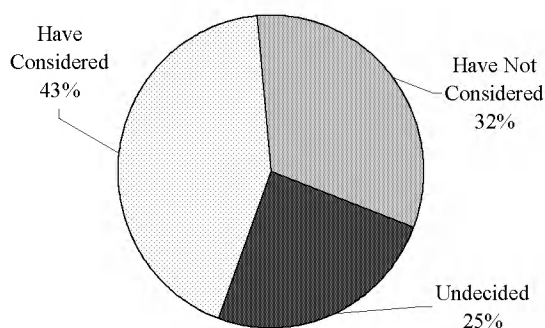


Figure 22. Displayed are the reflections of students towards the possibility of obtaining an education at a community college. The greatest percentage indicates that a large number of participants “have considered” obtaining an education at a community college. In addition, the remaining group is “undecided” or “have not” considered obtaining an education in a community college.

Preferred Educational Degrees

The preferred educational degrees selected by participants in this study were “bachelors’ degrees” (47%), “technical degrees” (40%), and “associate degrees” (30%). Furthermore, 23% of the sample population demonstrated interest for “graduate school.” Finally, 17% preferred “other” educational levels to achieve after high school (Figure 23).

Figure 23. Preferred Educational Degrees

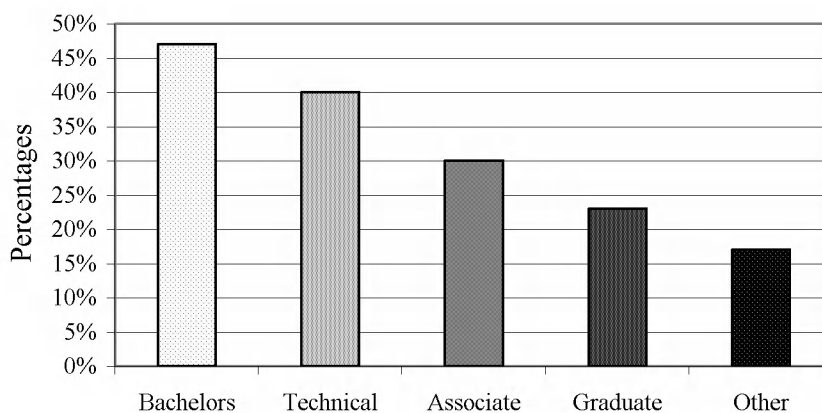


Figure 23. Displayed are the preferred educational degrees that the students would like to obtain. Bachelors’ degrees were the most common types followed by technical and associate degrees. Graduate education was also selected in lesser numbers as well as other post secondary degrees.

Post-Secondary Aspirations

To better understand the aspirations of the sample population after graduating from high school a series of options were provided in the survey. A majority (53%) aspired to “study at a university” and 33% would like to “study at a community college” after graduation (Table 14). Moreover, 20% of the participants would like to “work in a “technological career”, 10% in a “scientific career”, 10% would “join the army”, and 10%

had “other” post secondary aspirations after high school. In agricultural careers, just 3% were considering to work in an agricultural industry. However, not one student planned to “work at a factory, a store, or a restaurant”. See Table 15.

Table 15. Post-Secondary Aspirations

Aspirations	Percentages
Study at an university	53%
Study at a community college	33%
Work in a technological career	20%
Work in a scientific career	10%
Join the Army	10%
Work in an agricultural industry	3%
Work at a factory	—
Work at a store	—
Work at a restaurant	—
Other	10%

N=30

Synopsis of Findings

The average age of the respondents was 16 years old with a significant enrollment in the 10th grade. Males dominated the population strata and females were underrepresented in the study. An analysis of the findings indicates that the attitudes of Latino students in the secondary agricultural education program yielded positive perspectives towards agricultural classes, the FFA organization, and supervised agricultural experiences.

Regarding their agricultural background, the data obtained in this revealed that the largest proportion of the group did not have family members working in agricultural industries. However, the remaining fraction, which was almost half of the population, confirmed to have relatives working in the agriculture industry. Such finding clearly demonstrates the association of the students and their families with Iowa’s agriculture.

Although the majority of the students did not have a family member employed in agriculture, they were enrolled in agricultural education classes for personal interests without having a clear image of the type of careers and opportunities in such area. However, the group that had family members working in agriculture clearly demonstrated an interest for agricultural education and had a better understanding of the type of jobs that the agricultural industry offers to their families in either a positive or negative manner. Their main reason for students to enroll in agricultural education classes was somewhat uncertain because the majority of them did not have a reason to be enrolled in the class. Such result indicates that students are participating in the class not understanding the benefits and the purpose of the course. The remaining portion enrolled in the class as a result of having friends and a positive relationship with the agriculture teacher.

The interviewees confirmed that they would recommend agricultural classes, the FFA organization, and the supervised agricultural experiences to a friend. In the FFA, members of the organization participated to obtain agricultural experiences in horticulture and to contribute in community services. Students in agricultural experiences participated to obtain hands-on experiences and to study scientific subjects. Moreover, regarding educational aspirations, students were hesitant about pursuing a career in agriculture or science as post secondary goals. The majority of the surveyed students talked with their parents about pursuing a college education and planned to achieve bachelor degrees at a university. A further look into the conclusion of this study will provide a greater understanding of their attitudes towards the agricultural education program. Chapter V provides a deeper discussion at the conclusions of this study and provides recommendations to retain, involve, and professionally equip Latino leaders in agriculture. These arguments are described next.

CHAPTER V. CONCLUSIONS AND RECCOMENDATIONS

Summary

Chapter I described the conditions of Latino students in the Iowa secondary agricultural education program. It provided a glimpse of the demographic changes and consequences of a growing Latino population. The purpose of this study was to determine students' attitudes towards agricultural education and provide recommendations for their leadership development.

Chapter II discussed the conceptual and theoretical framework of the study based on the literature review as it pertains to the recruitment and perceptions of Latino students in AgEd classes, the FFA organization and supervised agricultural experiences. The effects of demographic variables on students' attitudes were also discussed.

Chapter III described the methods used to address the objectives of this study. Particularly, the research design, population and sample, development of the instrument, validity, reliability, administration of the instrument, and data analyses were addressed.

Chapter IV presented the findings obtained from the study answering the specific questions addressed in the results of the study as they pertain to the students' perceptions towards the class, the FFA local organization, and the supervised agricultural experiences program in four selected Iowa schools.

This chapter presents the conclusions and recommendations, based on the research questions and corresponding results of the study. In addition, the problem, purpose, procedures, and findings of the study are summarized providing a clear understanding of the condition, perspectives, and aspirations of Latino students in agricultural education classes.

Purpose

The primary purpose of this study was to determine the perspectives of Latino students enrolled in the Iowa secondary agricultural education program. The secondary purpose was to determine their perceptions towards the secondary agricultural education teacher, agricultural courses, the local FFA organization, and the supervised agricultural experiences program. This research describes the enablers that motivate Latino students to participate in Iowa's secondary agricultural education classes. In addition, the study assesses the post secondary aspirations of students and their post secondary aspirations. The methodology in which this study was conducted is explained next.

Statement of the Problem

Increasing the number of Latino students in agriculture and science has become a priority for higher learning institutions and agricultural educators. There is a need to recruit Latino students and other minority groups into agricultural education, leadership programs, and professional careers. The recruitment of Latino students into the Iowa agricultural education program is necessary to provide a thoughtful positive perspective of agriculture. To create effective educational strategies, enablers of the program were identified and analyzed to create innovative ways to educate Latinos. With an increasing demand for professionals in science, a well-educated generation of Latino students in agriculture is an opportunity to meet the needs for an adequate supply of scientist and leaders in agriculture.

Procedures

A descriptive survey design was employed in this research project to gather quantitative data. The survey questionnaire was designed by the researcher to determine the perception of Latino students towards agricultural classes, the FFA organization, and the

supervised agricultural experiences program. The population of the study included students from the communities of Columbus Junction, Denison, Muscatine, and West Liberty schools during the 2005-2006 academic year. The total sample size was determined based on: (1) a school criteria established by the researcher, (2) the availability of volunteers in agricultural classes, (3) the interest of their parents to provide a written consent, (4) and the compromise of the teacher to administer the instrument.

A sample of 30 volunteers was obtained from a total of 93 Latino students enrolled in the secondary agricultural education program from selected schools during the year 2005. The data obtained from the sample population was randomized using a computer software program package (SPSS 11.5).

Findings

An analysis of the findings indicates that the majority of participant students were males. Males dominated the gender ratio of this study and were a more accessible group to participate. However, females volunteered to participate in the study at lesser numbers revealing a great need to increase their involvement in future research projects. The mean age for the respondents enrolled in the secondary agricultural education program in this study was 16 years and they described their ethnic background to be of Latino origin. The majority of the sample population responded to be enrolled in the 10th grade followed by the second largest group in the 9th grade. The lowest percentages of participants were recorded in the 11th and 12th grades levels demonstrating a lack of involvement and a reduction in the enrollment of student near graduation.

This youth population represents a qualified group of students to satisfy the need for minority leaders in agriculture, but clearly their enrollment levels decreases before achieving

their post secondary aspirations as they get close to graduating from high school. Their examples of professions in agriculture showed a perception that agriculture is in great part linked with working on meatpacking companies and related to the production of seasonal agricultural crops. However, the group believed that as a result of participating in the class, they had improved their personal understanding of the agricultural sciences. In addition, the interviewees reported a greater interest for horticulture in the FFA organization and felt attracted to the hands-on experiences of the supervised agricultural education program. Teaching horticulture in the classroom proved its potential to recruit Latinos in the FFA organization and applying that information in an outdoor laboratory encouraged them to participate in learning experiences related to agriculture.

Conclusions

The beginning of the process started by identifying schools with Latin American students enrolled in the secondary agricultural education program. In preparing this thesis document, I was both the student and the teacher. My role at Iowa State University was that of a graduate student in the Department of Agricultural Education & Studies. In drawing conclusions from this research, I consulted my role as a graduate student and as that of a Latin American leader in agriculture. Therefore, I believe that this research describes the perspectives of a young group of Latino students and supports further efforts for their recruitment into agricultural classes. Attracting Latino students to the secondary agricultural education program in Iowa public schools can produce a source of minority leaders. If students are provided with a welcoming environment in the agricultural program, their interaction in the classroom can produce new FFA members and increase their participation in supervised agricultural experiences.

The Agriculture Teacher

The main person responsible for creating a welcoming environment for the students was the agriculture teacher. In this study, students confirmed that agriculture teachers in their schools were good performers in the classroom and as a result of their efforts they have increased their agricultural knowledge. The effectiveness of their teacher was relevant to the positive perspective and retention of Latino students in agricultural programs. Participants rated the performance of the teacher as effective with only a small group considering their teachers' efforts to be less than effective in the agricultural classroom. Evidently, based on the perceptions of students, the majority of teachers in the secondary program are being successful teaching agriculture to the Latino youth in the classroom and responsible for their enrollments in the secondary agricultural education program.

Another interesting piece of information gathered from the questionnaire was that Latino students learned about agriculture as a result of participating in the class. A portion of their reason for this opinion lies in the fact that the students felt that the teacher was an effective performer in the classroom who treated them with respect. Having a personal agricultural interest and a professional relationship with the agriculture teacher, proved to be an encouraging factor for the recruitment of students. This research shows that although the majority of students demonstrated not to fully understand their enrollments in the class, they felt that friends, teachers, and school advisors were promoters of the agricultural education program. The teachers approach is essential to start a recruitment campaign and invite them to participate in the class activities of the FFA organization and supervised agricultural experiences program. Teachers using the enablers of the program as a characteristic to recruit students demonstrated to be an effective method of persuasion.

The Agricultural Education Class

The preferred features of the class, as selected by students, were hands-on experiences, agricultural subjects, learning activities and the opportunity to conduct community services. However, one of the problems discovered in this research was that Latino students do not understand why they were enrolled in the class. The fact is that the majority of Latino students in the study were not informed regarding the benefits of agricultural education classes at the time of their enrollment. Part of the answer to this problem may lie with the response to a survey question concerning why students choose to participate in the class. Respondents that understood their reasons to be in the class were enrolled because they had friends in the class and enjoyed learning about technology. Informing the students about the benefits of agricultural education prior to their enrollment in the class demonstrated to be an effective recruitment method for Latinos.

Regarding the study habits of the students, the group demonstrated that the difficulty level of the class was about average and confirmed that they dedicated less than 30 daily minutes studying and completing assignments for the course. However, if the teacher feels that the process of learning requires a further instruction, additional efforts from their part should aim to increase the time that students dedicate carrying out their class responsibilities. Only by enhancing the study habits of their students, teachers could provide a superior curriculum and promote higher educational goals in their classrooms. At the same time, teachers would be preparing the students with effective study skills to enter a university with readiness and achieve professional careers in agriculture.

The FFA Organization

Participants stated that as a result of participating in agricultural classes their leadership skills had increased but they were hesitant to become members of their local FFA organization. The FFA organization plays a key role in the delivery of leadership skills for the students participating in the secondary agricultural education program. Enrollment in the leadership program increases the academic achievements and potential of students in the agricultural sciences. However, this study revealed that a great number of the respondents were non-members of the FFA organization. Only a lesser number of students in the population sample were members of the premier leadership organization.

Members of their school FFA chapter selected agricultural experiences and horticulture as their main reason to participate in the FFA. In addition, students selected opportunities for community service as motives to participate and become members of the organization. In contrast, those who did not participated in FFA, their main excuses were that they did not have time, lacked money, and disliked the activities. Such respond concurs with findings made by Lass (1989) who found that the reason for students to not participate in the FFA was because of lack of time to participate. The remaining population did not participated because they thought it was a waste of time or simply because they were not been asked to join the organization. The last statement reveals the need to invite Latino students in Iowa's schools to fully participate in the FFA organization. Without proper participation and inclusion of Latino students in the FFA chapters, their perspectives will remain negative affecting their opportunities to gain leadership skills.

Furthermore, this study found that a minority group declared to have language difficulties that prevented them from improving their skills in the FFA organization. The

lack of bilingual materials available for the increasing group of student was highly needed by teachers to maximize the learning experiences of students. This study also revealed that those responsible for encouraging students to become involve in the FFA organization were also teachers, friends and school advisors. Other sources from where Latino students obtained information regarding the FFA included Internet and magazine sources. Family members obtained lesser percentages but were not discarded as encouragers by the surveyed population. Parents in particular were the least encouraging individuals for the students. Therefore, the involvement of parents in this study becomes an issue that clearly reflects the lack of understanding from parents in regards to the benefits that the FFA organization can bring upon their children.

In general, Latino students participated at lower rates in the FFA due to lack of time, personal reasons, and limited information. This attribute is also related to the lack of information available for a Spanish speaking audience. For that reason, this study found that participation in the FFA local organization demonstrated a lack of interest from the students and a need for informational materials for the population. However, a large proportion of the sample population agreed that they would recommend a friend to participate in the FFA organization. This attitude demonstrates that although a great majority of respondents were not FFA members they acknowledged the organization with a positive perspective. Only a small group disagreed and would not recommend a friend to participate in the leadership organization.

These findings suggest that by utilizing agriculture teachers and friends as encouragers, other Latino students can be attracted to participate in the classroom, the FFA organization and also in supervised agricultural experiences. However, parents need to be

educated regarding the positive aspects of the agricultural class and the advantages of the program in the educational process of their children. As demonstrated in this study, in order to successfully increase the enrollment of students in the secondary agricultural education program in Iowa schools, the efforts of teachers, advisors, and most importantly the involvement of their parents are required. Without their assistance and understanding, the recruitment of Latinos in agricultural programs will continue being a difficult task for educators.

To this point, the findings have demonstrated the positive attitudes of students towards the program and its experiential components. Their reasons to enroll in agricultural classes and the persons responsible for encouraging them to participate in the program were also previously identified. Therefore, the following information will provide a quick look at the enablers of the supervised agricultural experiences program and describe the post secondary aspirations of the students.

Supervised Agricultural Experiences

A supervised agricultural experience is one of the learning components of the secondary agricultural education program. This study demonstrated that a large group in the sample population was non-participant in the supervised agricultural experiences program. A lesser number of the students reported to have participated in supervised agricultural experiences. In addition, this study revealed that Latino students would recommend supervised agricultural experiences to a friend. Latino students who participated in SAE activities enrolled to obtain hands-on experiences and learn about agricultural subjects that were related to science. Others participated to obtain experiences in agricultural industries or to participate in professional activities.

This study also found that language was not a barrier for Latino students in agricultural supervised activities. Latinos in the program demonstrated to dominate the English language and were accessible to conduct further activities if promoted by the teacher. However, non-participant students in the supervised experiential program did not like the activities offered by the teachers. Students expressed that they did not have time to experience agriculture because they believed it was a waste of time. Furthermore, a lesser group in the sample population has not been asked by the teacher to participate in the activities and felt welcome in the experiential program. A portion of their reason for this opinion lies in the fact that the students need innovative information and a teachers approach regarding the advantages of the experiential program.

Post Secondary Aspirations

This study found that a large number of the participants have talked with their parents about college at home. In addition, participants also agreed that they have considered attending a university after graduating from high school. Only, a small group was undecided about pursuing a university career and has not considered attending college after graduation. The attitudes of the students demonstrated that they had also considered attending a community college after graduating from high school. To be exact, a quarter of the population sample was undecided about attending a local educational community institution as a post secondary option. Their preferred educational levels were bachelor degrees, technical degrees, and associate degrees. In addition, students demonstrated interest to achieve scientific careers and technical degrees. None plans to work at a factory, a store, or a restaurant after graduating from high school although they are common occupations for the general Latino population in the state.

Overall, as a result of participating in agricultural education classes, participants in this study were hesitant to choose a career in agriculture, business, engineering, human sciences, liberal arts & sciences, or veterinary medicine. For that reason the encouragement of Latino student to obtain supervised agricultural experiences need to be taken seriously by teachers and administrators. With an increasing population of Latino students near agricultural industries, the opportunity to produce experienced leaders in agriculture cannot be ignored. The advantages of a college education and the role of agricultural program in the professional development of the students need to be emphasized in the classroom. Only if Latino students were equipped with higher educational goals in the agricultural program, their participation in higher learning institutions can greatly benefit the agricultural sciences.

Discussion and Implications of Findings

Latino students in the secondary agricultural education program can play an important role in the diversification of agricultural and scientific professions. This study confirms the positive perceptions and supports the efforts of Latino students in the Iowa agricultural education program. Previous research studies demonstrated the negative perceptions of minorities enrolled in secondary agricultural education programs (Talbert and Larke, 1995, and Nichols and Nelson, 1993). This study suggests that the positive perception of Latino students towards the program is a great opportunity to produce new minority leaders in agriculture. Reforms in the secondary agriculture program and its learning components that lead to a welcoming environment can be well received by Latino students.

Student's knowledge of agricultural education programs, the FFA organization, and supervised agricultural experiences was found to be generally low. Latino students did not consider that they could benefit from the program and did not know why they enrolled in

agricultural classes. To determine the attitudes of students towards agricultural education, new information gathered from this study points towards more recruitment efforts from agriculture teachers, administrators, higher learning institutions, and agricultural industries. As found in his study, Latino students believed that agricultural education was beneficial and therefore they will recommend a friend to participate in the class. This attitude corresponds to a positive perspective towards the agricultural classes and contradicts previous studies on minorities enrolled in agricultural programs such as Rossetti, 1988; Talbert and Larke, 1995; and Sutphin and Steward, 1995.

Although the majority of Latino students in the study demonstrated to dominate the English language, students with language difficulties were also found in this study. Such fact demonstrates the need for language training for teachers with English as a first language. Moreover, the teacher needs bilingual materials to effectively convey agronomic terminology to students with learning disabilities. The availability of bilingual materials to teach agricultural sciences is limited in the Iowa agricultural education program. In order to teach students with language difficulties, agricultural education teachers ought to utilize Internet resources and instruct the students to interpret the agronomic terminology in the English language.

The participant population in this study confirmed to have a great interest to pursue a further education after graduating from high school. Their interest focused on obtaining bachelors degrees in science or technology and refused to participate in typical Latino occupations. For that reason students are willing to obtain better professional goals that require at least technical degrees. Agricultural education promotes characters such as personal growth, responsibility, self-confidence, self-esteem, job satisfaction, human relation

skills, basic citizenship and cooperation. These are necessary skills for an advantageous higher education and commonly required by the agricultural industry.

Agricultural education programs should continue changing to meet the needs of all students in the 21st century (Krueger and Riesenber, 1991). Introductory science courses in schools should emphasize non-traditional agricultural topics such as ecology, urban agriculture, and horticulture to entice additional minority students into agricultural education programs. Talbert and Larke (1995) recommended involvement in the recruitment and maintenance of Latino students to keep them interested in agricultural education. In order to involve Latino students into agricultural education, authorities such as the agricultural industry, universities, and schools must do research in order to become involved with the issues concerning such important group.

Agricultural Education for Latinos in Iowa is a desirable public investment. Through organizations such as FFA and 4 H, Latino students could develop leadership, teamwork, and communication skills to better their communities and their educational status. Agricultural education for Latino students is needed in the state of Iowa to prepare professionals for the future of the state and the country's industries. If Latino students are attracted into agricultural education programs, the U.S. society will benefit from a young ethnic group with leadership and citizenship skills that are vital for the country's educational progress.

Recommendations

This study was limited only to Latino students in secondary Iowa community schools offering agricultural education. Further research on Latino students in schools not offering agricultural education programs in the state may have important data to be added to the body of knowledge. The following information provides recommendations to accommodate

Latino students in agriculture classes, the FFA organization, and promote their participation in supervised agricultural experiences.

To prepare the Iowa Secondary Agricultural Education Program for the increasing population of Latino students, a statewide training program need to be established to equip agriculture teachers with the abilities to recruit, retain, and maintain Latino students in their classes. Latinos students identified the agriculture teacher as a reason for their enrollment and described them as key promoters of the experiential components of the class. To engage Latino students in their local FFA chapters and promote their participation in supervised agricultural experiences, teachers ought to provide a welcoming environment.

The number of Latinos in the secondary agricultural education program can be drastically increased if the teacher makes a personal approach and invites them to visit a class and participate in a laboratory activity. Using horticultural classes as a tool to motivate Latinos to participate in the FFA organization was observed in this study as an effective factor in the recruitment of students. Greenhouse projects that offer Latino students the opportunity to take part in the process of producing their typical crops can provide professional skills and have proved to promote their participation in agricultural activities.

The agriculture teacher was responsible for the participation of Latino students in the FFA organization. This study recommends teachers to deliver an educational campaign to enroll students of Latino origin into the Iowa secondary agricultural education program. Bilingual materials designed to educate students with language difficulties such as books, magazines, posters, and websites provides an effective way to break the language barrier. The illustration of Latinos in brochures, school newsletters, the Internet, and local newspapers can attract future members of the FFA organization.

The curriculum of the class must address the fact that a large number of Latino students do not understand the benefits and advantages of the program. Students are to be informed regarding the goals, objectives and professional rewards in the agricultural education program. The role of Latinos in the agricultural industry must be a subject of discussion in the classroom to provide an attractive understanding towards the FFA organization and supervised agricultural experiences program. .

The FFA organization needs to provide attractive materials for students with English as their second language and develop a welcoming environment for Latino students and other minorities into the organization. Programs that emphasize horticultural projects have the potential to attract and encourage Latino students to become members of the FFA organization. Also, providing additional support for Latino students in the FFA organization can drastically increase the leadership development of students in the Iowa secondary agricultural education program and in agricultural industries.

For that reason, agricultural industries need to promote the effort to expose minority students to science and technology in their communities. In addition, agricultural education programs must be established in rural and urban schools with the support from their local industries. State agencies and agribusinesses should accommodate Latino students in supervised agricultural experiences to expose them to professional careers in agriculture. These experiences should focus on a global agricultural perspective with funds allocated to prepare Latin American students, particularly females, to participate in agricultural and scientific agricultural careers.

Moreover, recruitment personnel from higher learning institutions need to reach out for Latino students enrolled in the secondary program. Schools with continuous enrollments of

students in agricultural courses can produce the largest sources of candidates interested in pursuing bachelor's degrees in science and technology. Colleges of agriculture in Land Grant universities must update their recruitment strategies to attract state Latino students into agricultural education programs. The efforts of higher learning institutions in the recruitment and retention of students is crucial to prepare Latin American role models with leadership skills for the state. Only, if the learning institutions of the state educate and place teachers of Latino origin in schools offering agricultural education, the enrollment barriers that exist in the program would be eliminated and the Iowa secondary agricultural education program will be prepared to deal with the expected demographic changes of the Latino population.

Significance and Implications to Education

This study serves as a reference and opportunity to further study Latin American students in the Department of Agricultural Education and Studies (AGEDS) at Iowa State University. This period of transition for Latino students could provide insight into the area of education as they obtain new experiences and make decisions about their future professional careers. Research on this issue and its significance has been needed since the beginning of the last decade. As agricultural educators, this study can serve as a point of inquiry for Latin American issues in the state of Iowa. The information from this study can be integrated into the agricultural education curriculum at Iowa State University. Integrating the perspective of Latino students into classes such as administration, leadership, and methods of teaching would be a valuable asset to AGEDS. Disseminating this information to agriculture teachers and college administrators in Iowa would guarantee that the enrollment issues concerning Latino students in the FFA organization, and the SAE program were addressed across the state.

This study contributes to the limited research conducted in AGEDS at a state and national levels. With a large number of Latinos participating every year in agricultural classes, there is reason enough to educate them on the advantages and potentials of agricultural education. Therefore, providing pilot programs, workshops, and seminars becomes an essential factor to increase the participation of Latinos in secondary and post-secondary institutions. Sharing these students' perception in agriculture provides valuable information for agricultural educators to inspire and assist with precision the need for minority leaders in agriculture. However, it is disturbing that at the turn of the 21st century the struggle to include Latinos in all aspects of agriculture continues to be a difficult task for educators.

ACKNOWLEDGEMENTS

I dedicate this work to my wonderful family in Puerto Rico, my father Aurelio Curbelo Sr., my mother Maria L. Ruiz, and my sister Aury M. Curbelo. You provided faith in me when there was doubt in my heart. Los quiero y los amo! To my grandma Virginia Rodriguez, I pray to the Almighty that you never forget who I am due to your Alzheimer's condition. Te amo abuela! To rest of my family, I understand that I have been absent for a long time but I always had all of you close to my heart everywhere I went. Los quiero!

To my major professor, Dr. Lynn Jones, you provided me with the greatest opportunity to succeed in graduate school. In times of despair you gave me advice and lightened my persona with your sense of humor. Your constructive advice taught me a variety of professional skills and allowed me to stand out as minority student in agricultural education. You are a great example of a great professor and a personal friend of mine. Thanks for your patience, advice, and dedication.

To my mentor, Señor Dr. Harold Crawford, because having you as a friend was a blessing from God. You taught me how to become a leader through the years. Thanks for opening my eyes to the Native Americans and their cultures. You provided unforgettable educational experiences and encouraged me to become an outstanding agricultural educator. I will never forget you Dr. Crawford, you have been good to me and I am humbled by your greatness. God bless you and your family.

To my undergraduate advisor, Dr. Gail Nonnecke, thanks for your advise during my years in the horticulture department. I will always remember that you opened doors for me when I had no hope of continuing my education at Iowa State University. You encouraged

me to never quit and to carry-on towards greater achievements in life. Thanks your charisma, dedication, and professionalism as a great advisor. Muchas Gracias!

To Dr. Ricardo Salvador, thanks for being a great role model, an effective teacher, and a Latin American leader. Your dedication to the profession inspired me to work internationally to change the life of people in developing countries. Mucho Exitó!

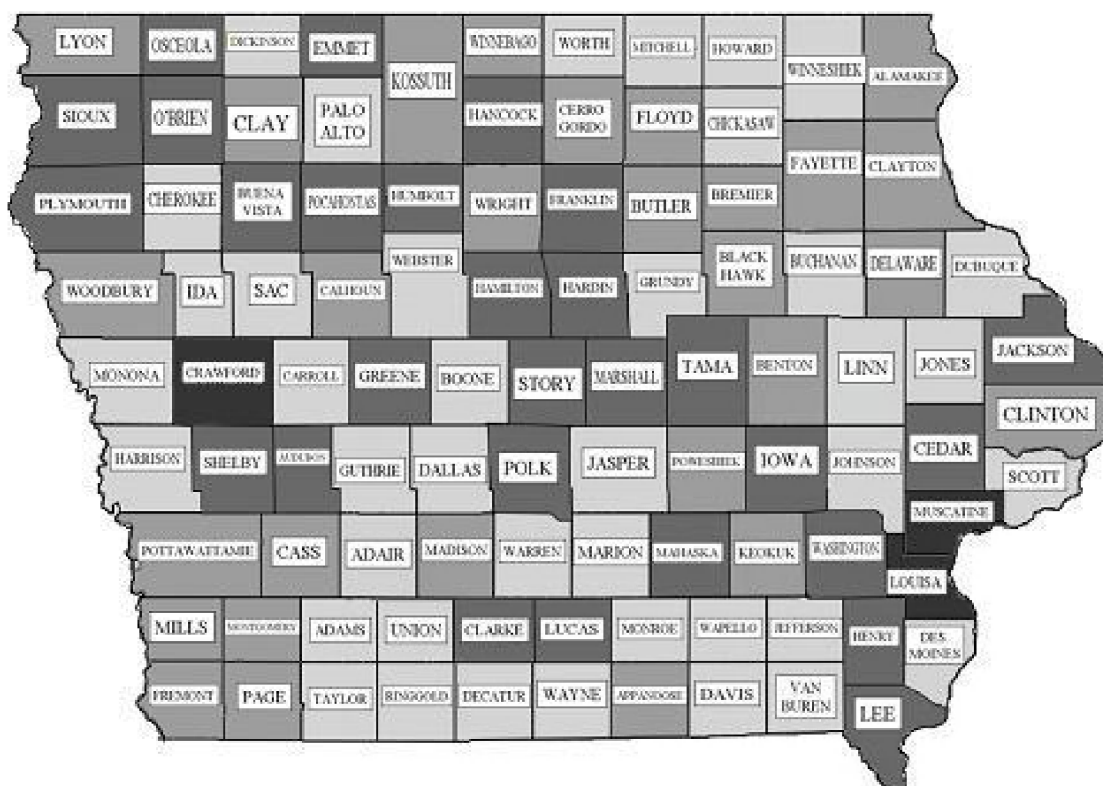
To my friend, Mary deBaca, thanks for letting me use my ingenuity to make the George Washington Carver internship program the best in the nation. Thanks to you, I had the opportunity to encourage students to pursue a graduate education in the agricultural sciences. Without you by my side, I could not get things accomplished. You have been an angel to me at all times and I am thankful for being good to me. Thanks for your wisdom and encouragement during my years as graduate student. Please keep me in your prayers.

Thanks to all colleagues in the Department of Agricultural Education & Studies for supporting my academic endeavors as a graduate student. It is time for me to achieve higher goals and pursue a different road in life. We might not see each other from now on, but whenever we meet again I want you all to remember that I am thankful for your friendship.

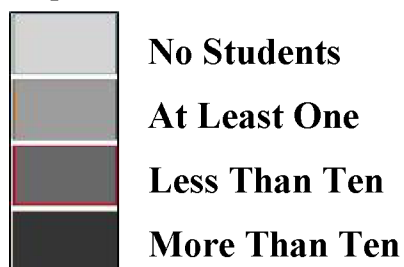
To all my friends around the world, thanks for being present when I needed you the most. Without your friendship I really do not know where I would be. Finally, thanks to those who believed in me. Your optimism made me a stronger person and therefore I plan to continue being a successful educator, scientist, and a great leader in agriculture. Peace!

APPENDIX A
2005 Map of Schools with Latinos in the Iowa AgEd Program

2005 Map of Schools with Latinos in the Iowa AgEd Program



Legend



APPENDIX B
Letter to School Administrators

From: Aurelio Curbelo
 Graduate Student
 Department of Agricultural Education and Studies
 Iowa State University
 515-294-4519

November 29, 2005

Dear School Administrators

The educational attainment of Latinos over the age of 25 in the state of Iowa lags behind expectations. At both the undergraduate and graduate levels, Latinos complete fewer degrees, relative to their demographic composition in the population, than majority of ethnic groups. In the fiscal year 2003, the population of Latinos in public schools accounted 23,661 students making a 10.7 percent change between 2002 and 2003, the largest increase of all the racial/ethnic groups. Likewise, the agricultural education program had an influx of Latino students. One hundred thirty nine Latino students participated of agricultural education in schools across the state; 32 Latinos were FFA members and 79 students completed SAE projects with a total of \$45,773.42 in profits during 2002. In addition, 71 percent of the juniors in the agricultural program completed high school and 36 percent followed a continued education. The AgEd program demonstrated to provide an environment of constructive learning and academic encouragement for Latino students.

This message is to request your approval to conduct a study on Latino students utilizing a bilingual survey in the Secondary Agricultural Education Program (AgEd) classroom. Aurelio Curbelo, an Iowa State University graduate student is organizing this research study under the supervision of Dr. Lynn Jones, Dr. Harold Crawford, and Dr. Ricardo Salvador from the College of Agriculture.

A survey instrument will be mailed to the AgEd teacher in your school and distributed to Latino students enrolled in AgEd program during January of 2006. The opportunity to conduct a survey of this magnitude is unique and necessary to encourage the increasing pool of Spanish-speaking students to enhance their educational attainments.

The goal of the study is to describe the educational impact of the secondary AgEd program in the learning process of Latino students. The objectives of the study are to explore the perspective of Latino students enrolled in the secondary agricultural education program and to provide recommendations to further their education in agriculture. The study intends to answer the following questions:

1. What do students think about the secondary AgEd program, the FFA organization, and Supervised Agricultural Experiences?
2. What can be done to increase the participation of Latinos in the AgEd program, universities, and agricultural careers?
3. What encourages Latinos to participate in the secondary AgEd program, the FFA organization, and Supervised Agricultural Experiences?
4. How much does the AgEd program has helped Latinos to develop professional skills?
5. What are the educational goals of students after graduating from high school?

The Iowa State University Office of Human Subjects requires your approval as a school administrator to conduct this study. It also requires the cooperation of the AgEd Teacher, parental consent, and student assent prior to the distributions of the research instrument. Your approval is considered highly necessary to promote the advancement and potential of Latino students in the state of Iowa. We encourage you to participate, **Please ask any question via email and reply with your individual response to: acurbelo@iastate.edu**

Thank you for your cooperation in this important effort.
 Sincerely,

Aurelio Curbelo

For Additional Information Please Contact:**Graduate Student**

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APPENDIX C
Letter to Agriculture Teachers

From: Aurelio Curbelo
 Graduate Student
 Department of Agricultural Education and Studies
 Iowa State University

November 29, 2005

Dear Agricultural Education Teachers

This message is to request your cooperation to conduct, distribute, and return a questionnaire for Latino students utilizing a bilingual survey in the Secondary Agricultural Education Program (AgEd) classroom. Aurelio Curbelo, an Iowa State University graduate student is organizing this research study under the supervision of Dr. Lynn Jones, Dr. Harold Crawford, and Dr. Ricardo Salvador from the College of Agriculture.

The educational attainment of Latinos over the age of 25 in the state of Iowa lags behind expectations. At both the undergraduate and graduate levels, Latinos complete fewer degrees, relative to their demographic composition in the population, than majority of ethnic groups. In the fiscal year 2003, the population of Latinos in public schools accounted for 23,661 students making a 10.7 percent change between 2002 and 2003, the largest increase of all the racial/ethnic groups. Likewise, the agricultural education program had an influx of Latino students. One hundred thirty nine Latino students participated in agricultural education in schools across the state; 32 Latinos were FFA members and 79 students completed SAE projects with a total of \$45,773.42 in profits during 2002. In addition, 71 percent of the juniors in the agricultural program completed high school and 36 percent a continued education. The AgEd program provided an environment of constructive learning and academic encouragement for Latino students.

Survey instruments will be mailed to all participant AgEd teachers in order to be distributed to all Latino students enrolled in AgEd programs during January of 2006. After the students complete the survey the Agriculture Teacher will be in charge of returning the material via mail to the Department of Agricultural Education and Studies at Iowa State University. The opportunity to conduct a survey of this magnitude is unique and necessary to encourage the increasing pool of Spanish-speaking students to enhance their educational attainments.

The goal of the study is to describe the educational impact of the secondary AgEd program in the learning process of Latino students. The objectives of the study are to explore the perspective of Latino students enrolled in the secondary agricultural education program and to provide recommendations to further their education in agriculture. The study intends to answer the following questions:

1. What do students think about the secondary AgEd program, the FFA organization, and Supervised Agricultural Experiences?
2. What can be done to increase the participation of Latinos in the AgEd program, universities, and agricultural careers?
3. What encourages Latinos to participate in the secondary AgEd program, the FFA organization, and Supervised Agricultural Experiences?
4. How much does the AgEd program help Latinos to develop professional skills?
5. What are the educational goals of students after graduating from high school?

The Iowa State University Office of Human Subjects requires the cooperation of the school administrator, parental consent, and student assent prior to the distribution of the research instrument. Your approval is considered highly necessary to promote the advancement and potential of Latino students in the state of Iowa. We encourage you to participate.

Please ask any question via email and reply with your individual response to: acurbelo@iastate.edu

Thank you for your cooperation in this important effort.

Sincerely,
 Aurelio Curbelo

For additional information please contact:

Major Professor
Dr Lynn Jones
Office Phone: 515-294-0898
Fax: 515-294-0530
Email: xljones@iastate.edu
Department: Agricultural
Education & Studies
201 Curtiss
Ames, IA 50011-1050

Director of Research Compliance
Diane Ament
Office Phone: 515-294-3115
Fax: (515)-294-4267
Email: dament@iastate.edu
Office of Research Compliance
1138 Pearson Hall
Ames, Iowa 50011-2207

Office of Human Subjects
Iowa State University
1138 Pearson Hall
Ames, Iowa 50011-2207
Fax : (515)-294-4267

APPENDIX D
Parental Consent Form

Secondary Public School Agricultural Education Program Latino/a Student Questionnaire

Parental Consent Form	Formulario de Consentimiento de los Padres
<p>Dear Parents,</p> <p>Great news! Your child has been selected to participate in the <i>Secondary Public School Agricultural Education Program Questionnaire for Latino/a Students</i>. This is a research study conducted by the Department of Agricultural Education & Studies at Iowa State University.</p> <p>What is the purpose of this questionnaire?</p> <p>The purpose of this questionnaire is to describe the impact of the Secondary Agricultural Education Program in the learning process of “Latino” students in Iowa public schools. Since a small number of Latinos are enrolled in the agriculture program, your consent is extremely important.</p> <p>Who is conducting this questionnaire?</p> <p>Aurelio Curbelo, a graduate student in the Department of Agricultural Education and Studies is conducting this questionnaire under the supervision of Dr. Lynn Jones, Dr. Harold Crawford, and Dr. Ricardo Salvador from Iowa State University.</p> <p>Why is so important to provide your consent to allow your children to participate in this questionnaire?</p> <p>Your consent will help us understand the perspective of your children towards agriculture and science. Your consent will produce groundbreaking information needed to enhance the education of Latino students in Iowa and help diversify the body of Latino students in universities and scientific careers.</p> <p>Who will supervise this questionnaire?</p> <p>The questionnaire will be supervised and distributed by the agriculture teacher with prior approval from the school administration. The expected duration of your children’s participation in this research is at least one hour.</p> <p>Is the questionnaire confidential?</p> <p>The Department of Agricultural Education and Studies will never distribute information about your child without your prior, written permission. Please consider that this survey will explore the perspective of Latino students and provide opportunities that will increase their educational attainments in the state of Iowa. There is no foreseen risk in this study and participation is voluntary.</p> <p>We are pleased to provide this opportunity for your child’s success and would appreciate a prompt return of the attached document of consent to the Agriculture Education teacher.</p> <p>Sincerely,</p> <p>Aurelio Curbelo Department of Agricultural Education & Studies Iowa State University</p> <hr style="border: 0.5px dashed black;"/> <p>Parental Consent I have read the Department of Agricultural Education & Studies privacy policy and authorize my child _____ to participate in the Iowa State University “<i>Secondary Public School Agricultural Education Program Questionnaire for Latino/a Students</i>”.</p> <p>Student name _____</p> <p>Students signature _____</p> <p>Age _____ Grade _____ School _____</p> <p>Ag Teacher’s Name _____</p> <p>Parent’s/Guardian Full Name _____</p> <p>Parent’s/Guardian Signature _____ Date _____</p>	<p>Queridos Padres,</p> <p>¡Buenas Noticias! Su hijo/a ha sido seleccionado/a para participar en el cuestionario para estudiantes latinos en el Programa de Educación Agrícola a Nivel Secundario. Esto es un estudio de investigación conducido por el Departamento de Educación y Estudios Agrícolas en Iowa State University.</p> <p>¿Cuál es el propósito de este cuestionario?</p> <p>El propósito de este cuestionario es para describir el impacto del Programa de Educación Agrícola a Nivel Secundario en el proceso de aprendizaje en estudiantes latinos matriculados en escuelas públicas de Iowa. Debido a que existe un pequeño número de latinos en el programa agrícola, su consentimiento es extremadamente importante.</p> <p>¿Quién está conduciendo este cuestionario?</p> <p>Aurelio Curbelo, un estudiante graduado en el Departamento de Educación y Estudios Agrícolas esta conduciendo este cuestionario bajo la supervisión del Dr. Lynn Jones, el Dr. Harold Crawford, y el Dr. Ricardo Salvador de la Iowa State University.</p> <p>¿Por qué es importante el ofrecer su consentimiento para que su hijo/a participe en este cuestionario?</p> <p>Su consentimiento nos ayudará a entender la perspectiva de su hijo/a hacia la agricultura y carreras universitarias. Su consentimiento ayudará a obtener información innovadora para mejorar la educación de los estudiantes latinos en Iowa y ayudar a diversificar el cuerpo de estudiantes latinos en universidades y carreras científicas.</p> <p>¿Quién supervisará este cuestionario?</p> <p>Este cuestionario será supervisado y distribuido por el maestro de agricultura con la aprobación previa de la administración de la escuela. Su hijo/a participará en esta investigación por un tiempo aproximado de una hora.</p> <p>¿El cuestionario es confidencial?</p> <p>El Departamento de Educación y Estudios Agrícolas nunca distribuirá información sobre su hijo/a sin antes obtener su permiso escrito. Por favor considere que este cuestionario ayudará a explorar la perspectiva de los estudiantes latinos y proveerá oportunidades que aumentarán la educación de los estudiantes latinos en el estado de Iowa. Este estudio no representa ningún riesgo para su hijo/a y su participación es voluntaria.</p> <p>Estamos agradecidos de proveer esta oportunidad para el éxito de su hijo/a y nos gustaría que regresaras pronto el documento proveído con su consentimiento al maestro de agricultura.</p> <p>Atentamente,</p> <p>Aurelio Curbelo Department of Agricultural Education & Studies Iowa State University</p> <hr style="border: 0.5px dashed black;"/> <p>Consentimiento Paternal Yo he leído la póliza de privacidad del Departamento de Educación y Estudios Agrícolas y autorizo a mi hijo/a _____ a que participe en el Cuestionario para Estudiantes latinos en el Programa de Educación Agrícola a Nivel Secundario.</p> <p>Nombre del estudiante _____</p> <p>Firma del estudiante _____</p> <p>Edad _____ Grado _____ Escuela _____</p> <p>Nombre Maestro de Agricultura _____</p> <p>Nombre completo del Padre/Guardián _____</p> <p>Firma del Padre/Guardián _____ Fecha _____</p>

APPENDIX E
Student Assent Form

Secondary Public School Agricultural Education Program Latino/a Student Questionnaire

<p>Student Assent Form</p> <p>Dear Student,</p> <p>Great news! You have been selected to participate in the Secondary Public School Agricultural Education Program Questionnaire for Latino/a Students conducted by the Department of Agricultural Education & Studies at Iowa State University.</p> <p>What is the purpose of this questionnaire? The purpose of this questionnaire is to describe the impact of the Secondary Agricultural Education Program in the learning process of “Latino” students in Iowa public schools. Since a small number of Latino students are enrolled in the agriculture program, your consent is extremely important.</p> <p>Who is conducting this survey? Aurelio Curbelo, a graduate student in the Department of Agricultural Education and Studies is conducting this survey under the supervision of Dr. Lynn Jones, Dr. Harold Crawford, and Dr. Ricardo Salvador from Iowa State University.</p> <p>Why is so important to provide your consent to participate in this questionnaire? Your consent will help us understand more about your perspective towards agriculture and science. Your consent will produce groundbreaking information needed to enhance the education of Latino students in Iowa and increase their participation in universities and scientific careers.</p> <p>Who will supervise this survey? The questionnaire will be supervised and distributed by the agriculture teacher with prior approval from the school administration, your parents, and your individual consent.</p> <p>Is the questionnaire confidential? The Department of Agricultural Education and Studies will never distribute information about yourself without your prior written permission. Please consider that this questionnaire will explore your perspective and provide opportunities that will increase the educational attainments of other Latino students in the state of Iowa.</p> <p>We are pleased to provide you with this opportunity for your success and would appreciate a prompt return of the attached document of consent form to your Agriculture Education teacher.</p> <p>Sincerely,</p> <p>Aurelio Curbelo College of Agriculture Department of Agricultural Education & Studies Iowa State University</p> <hr/> <p>Student Consent</p> <p>I, _____ have read the Department of Agricultural Education & Studies privacy policy and wish to participate in the Iowa State University “Secondary Public School Agricultural Education Program Questionnaire for Latino/a Students”.</p> <p>Student name _____</p> <p>Student signature _____ Date _____</p> <p>Age _____ Grade _____ School _____</p> <p>Ag Teacher’s name _____</p> <p>Parent’s/Guardian Full Name _____</p>	<p>Formulario de Consentimiento de los Estudiantes</p> <p>Querido Estudiante,</p> <p>Buenas Noticias! Tú has sido seleccionado/a para participar en el cuestionario para estudiantes latinos en el Programa de Educación Agrícola a Nivel Secundario conducido por el Departamento de Educación y Estudios Agrícolas en Iowa State University</p> <p>¿Cuál es el propósito de este cuestionario? El propósito de este cuestionario es describir el impacto del Programa de Educación Agrícola a Nivel Secundario en el proceso de aprendizaje en estudiantes latinos matriculados en escuelas públicas de Iowa. Debido a que existe un pequeño número de estudiantes latinos en el programa agrícola, tu consentimiento es extremadamente importante.</p> <p>¿Quién está conduciendo este cuestionario? Aurelio Curbelo, un estudiante graduado en el Departamento de Educación y Estudios Agrícolas está conduciendo este cuestionario bajo la supervisión del Dr. Lynn Jones, el Dr. Harold Crawford, y el Dr. Ricardo Salvador de la Iowa State University.</p> <p>¿Por qué es importante el ofrecer tu consentimiento para participar en este cuestionario? Tu consentimiento nos ayudará a entender más sobre tu perspectiva hacia la agricultura y las carreras universitarias. Tu consentimiento ayudará a obtener información innovadora para mejorar la educación de los estudiantes latinos en Iowa y ayudar a aumentar su participación en universidades y carreras científicas.</p> <p>¿Quién supervisará este cuestionario? El cuestionario será supervisado y distribuido por el maestro de agricultura con la aprobación previa de la administración de la escuela, tus padres, y tu consentimiento individual.</p> <p>¿El cuestionario es confidencial? El Departamento de Educación y Estudios Agrícolas nunca distribuirá información sin antes obtener tu permiso por escrito. Por favor considere que este cuestionario ayudará a explorar tu perspectiva y proveerá oportunidades que aumentarán la educación de otros estudiantes Latinos como tú en el estado de Iowa.</p> <p>Estamos agradecidos de proveer esta oportunidad para tu éxito y nos gustaría que regresaras pronto el documento proveído con su consentimiento al maestro de agricultura.</p> <p>Atentamente,</p> <p>Aurelio Curbelo College of Agriculture Department of Agricultural Education & Studies Iowa State University</p> <hr/> <p>Consentimiento del Estudiante</p> <p>Yo, _____ he leído la póliza de privacidad del Departamento de Educación y Estudios Agrícolas y deseo participar en el Cuestionario para Estudiantes Latinos en el Programa de Educación Agrícola a Nivel Secundario.</p> <p>Nombre del estudiante _____</p> <p>Firma del estudiante _____ Fecha _____</p> <p>Edad _____ Grado _____ Escuela _____</p> <p>Nombre del Maestro de Agricultura _____</p> <p>Nombre completo del Padre/Guardián _____</p>
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APPENDIX F
Instrument of the Study

Iowa State University
College of Agriculture

Department of Agricultural Education & Studies

Secondary Public School

Agricultural Education Program

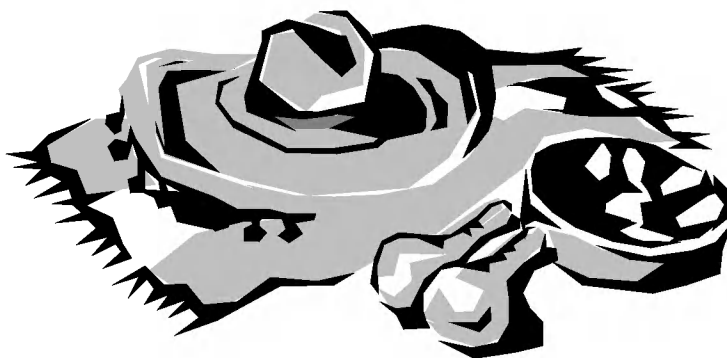
Latino/a Student Questionnaire

Students Perspective Survey

2005-06 School Year

**Conducted by:
Aurelio Curbelo
ISU Graduate Student**

Department of Agricultural Education & Studies



**This survey has been endorsed by:
Iowa State University
Iowa Department of Education**

<p>Dear Latino/a Student:</p> <p>The purpose of this survey is to describe the impact of the Secondary Agricultural Education Program in the learning process of “Spanish-speaking” students in Iowa public schools.</p> <p><i>Since a small number of Latino students are enrolled in agriscience and agribusiness courses, your opinion is extremely important to inform others regarding the positive effects of the program in the learning process of Spanish speaking students.</i></p> <p><i>Your answers will help diversify the body of Latino students in higher learning institutions and increase their participation in agriscience and agribusiness careers.</i></p> <p>Who is conducting this survey? <i>The College of Agriculture at Iowa State University requests your participation in this survey. Aurelio Curbelo, a graduate student in the Department of Agricultural Education and Studies is conducting this survey under the supervision of Dr. Lynn Jones, Dr. Harold Crawford, and Dr. Ricardo Salvador.</i></p> <p>Why the College of Agriculture is sponsoring this survey? <i>The purpose of this survey is to obtain information about the perspective of Latino/a students towards the Secondary Agriculture Education Program, the Supervised Agricultural Experiences, and the FFA organization.</i></p> <p>Why should you participate in this survey? <i>We are conducting this survey with only a small sample of Latino students. Therefore, the value of your individual contribution is greatly amplified because it represents other Latino students in other schools. We, therefore encourage you to participate in this voluntary survey.</i></p> <p>Where should you place your completed questionnaire and answer sheet? <i>Place your completed questionnaire and answer sheet in the enclosed “yellow” envelope that the moderator has for you. The pencil is a gift so keep it. The moderator will mail the documents to:</i></p> <p style="text-align: center;">Aurelio Curbelo Department of Agricultural Education & Studies 201 Curtiss Hall Iowa State University Ames, IA 50010</p> <p>Thank you for your cooperation in this important effort. Sincerely, Aurelio Curbelo</p>	<p>Querido Estudiante Latino/a:</p> <p>El propósito de este cuestionario es para describir el impacto del Programa Secundario de Educación Agrícola en el proceso de aprendizaje de estudiantes de habla Hispana en las escuelas de Iowa.</p> <p>Debido a que un número pequeño de estudiantes Latinos participan en cursos de ciencias y negocios agrícolas, tu opinión es extremadamente importante para informar a otros sobre los efectos positivos del programa sobre estudiantes de habla Hispana.</p> <p>Tus respuestas ayudaran a diversificar el cuerpo de estudiantes Latinos en instituciones de alto aprendizaje y aumentaran su participación en trabajos Agrocientíficos y negocios agrícolas.</p> <p>¿Quien esta conduciendo este cuestionario? El Colegio de Agricultura de la Universidad del Estado de Iowa solicita tu participación para completar este cuestionario. Aurelio Curbelo, un estudiante graduado en el Departamento de Educación y Estudios Agrícolas esta conduciendo este cuestionario bajo la supervisión de Dr. Lynn Jones, Dr. Harold Crawford, and Dr. Ricardo Salvador.</p> <p>¿Por que el Colegio de Agricultura patrocina este cuestionario? El propósito de este cuestionario es obtener información sobre la perspectiva de los estudiantes Latinos hacia el Programa Secundario de Educación Agrícola, Experiencias Agrícolas Supervisadas, y la organización FFA.</p> <p>¿Por que deberias de participar en este cuestionario? Estamos conduciendo este cuestionario con una muestra pequeña de estudiantes Latinos. Por lo tanto, el valor de tu contribución individual será amplificada para representar otros estudiantes Latinos en otras escuelas. Es por esto que te animamos a que participes en este cuestionario voluntario.</p> <p>¿Donde debes colocar el cuestionario y la hoja de respuestas al ser completados? <i>Coloque el cuestionario y la hoja de respuestas en el sobre “amarillo” que el moderador tiene para ti. El lápiz es un regalo, quédate con el. El moderador enviara los documentos por correo a:</i></p> <p style="text-align: center;">Aurelio Curbelo Department of Agricultural Education & Studies 201 Curtiss Hall Iowa State University Ames, IA 50010</p> <p>Gracias por tu cooperación en este importante esfuerzo. Sinceramente, Aurelio Curbelo</p>
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This is a Questionnaire for Latino Students in the Secondary Agricultural Education Program in the State of Iowa

You have been selected because we are interested in knowing your opinion regarding agricultural education and how it has helped you to obtain professional and technical abilities.

Instructions:

You have been provided with three complements:

- A Questionnaire
- A Pencil
- An Answer Sheet

▪ Select the language (English or Spanish) that you prefer to read

▪ Fold the questionnaire



▪ Read the questions carefully before answering.

▪ Utilize the pencil to fill-in the circles in the answer sheet.



▪ Please choose the answers that best describe your opinion.

▪ Some of the questions ask that you share your opinion in writing. Please write clearly in the provided space or in the back of the page.

▪ Provide any comments that would be helpful to understand your perspective towards the secondary Agricultural Education Program, the Supervised Agricultural Experiences and the FFA organization.

▪ Handle this questionnaire and the answer sheet to the teacher or person in charge of the class.

Remember! Read first, think, and answer by filling the circle or writing your opinion clearly in the provided space .



Read



Think



Answer

Thanks for Answering this Questionnaire!

Este es un Cuestionario para Estudiantes Latinos en el Programa Secundario de Educación Agrícola en el Estado de Iowa

Tu has sido seleccionado/a por que nos interesa saber tu opinión sobre la educación agrícola y como te ha ayudado a obtener habilidades técnicas y profesionales.

Instrucciones:

Se te ha proveído con tres complementos:

- Un Cuestionario,
- Un Lápiz.
- Una Hoja de Respuestas

▪ Seleccione el idioma (Español o Ingles) que usted prefiera leer

▪ Doble el cuestionario



▪ Lea las preguntas cuidadosamente antes de contestarlas.

▪ Utilize el lápiz para marcar los círculos en la hoja de contestaciones.



▪ Por favor seleccione las respuestas que mejor describan tu opinión.

▪ Algunas preguntas requieren que compartas tu opinión escrita. Por favor escribe claro en el espacio proveído o utiliza la parte trasera de la pagina

▪ Provee comentarios útiles que nos puedan ayudar a entender tu perspectiva personal sobre el programa secundario de Educación Agrícola, las Experiencias Agrícolas Supervisadas y la organización FFA.

▪ Entrega la hoja de contestaciones y este cuestionario al maestro o moderador de la clase.

!Recuerda! Lee primero, piensa, y contesta llenando el círculo en la hoja de respuestas y escribiendo claramente tu opinión en el espacio proveído.



Read



Think



Answer

¡Muchas Gracias por Contestar este Cuestionario!

<p>1. Your overall rating of Agricultural Education classes is:</p> <p>a. <i>Very Good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very Poor</i></p> <p>2. How much do you feel you have learned in this course?</p> <p>a. <i>An Exceptional Amount</i> b. <i>More than Usual</i> c. <i>About as Much as Usual</i> d. <i>Less than Usual</i> e. <i>Almost Nothing</i></p> <p>3. What interest you the most about the class? (Check as many as apply)</p> <p>a. <i>Opportunity to work in the community</i> b. <i>Interesting agricultural subjects</i> c. <i>Exposure to scientific subjects</i> d. <i>Hands-on experiences</i> e. <i>Participation in organizations and activities</i> f. <i>Knowledge of agricultural industry</i> g. <i>Other (please specify)</i> _____</p> <p>4. Why did you enroll in Agricultural Education classes? (Check as many as apply)</p> <p>a. <i>I have friends in the class</i> b. <i>I like the teacher</i> c. <i>I am interested in the FFA</i> d. <i>I am interested in Agriculture</i> e. <i>I am interested in Technology</i> f. <i>I am interested in Science</i> g. <i>I am interested in the 4H Club</i> h. <i>I am interested in SAE activities</i> i. <i>I do not know why I am enrolled</i> j. <i>Other (please specify)</i> _____</p> <p>5. Who recommended you to enroll in Agricultural Education classes? (Check as many as apply)</p> <p>a. <i>A Friend</i> b. <i>A Teacher</i> c. <i>An Advisor</i> d. <i>My Parents</i> e. <i>A Family Member</i> f. <i>Other (please specify)</i> _____</p> <p>6. Would you recommend a friend to take agricultural education classes?</p> <p>a. <i>Yes</i> b. <i>No (Write your reason)</i> _____</p>	<p>1. Tu evaluación general de las clases de Educación Agrícola es:</p> <p>a. <i>Muy Buena</i> b. <i>Buena</i> c. <i>Satisfactoria</i> d. <i>Pobre</i> e. <i>Muy Pobre</i></p> <p>2. ¿Cuanto sientes que has aprendido en este curso?</p> <p>a. <i>Una Cantidad Excepcional</i> b. <i>Mas de lo Usual</i> c. <i>Usual</i> d. <i>Menos de lo Usual</i> e. <i>Casi Nada</i></p> <p>3. ¿Que es lo mas que te interesa de la clase? (Marca todas las que apliquen)</p> <p>Oportunidad para trabajar en la comunidad a. <i>Temas interesantes sobre la agricultura</i> b. <i>Exposición a temas científicos</i> c. <i>Experiencias manuales</i> d. <i>Participación en organizaciones y actividades</i> e. <i>Conocimiento sobre la industria agrícola</i> f. <i>Otra (por favor especifique)</i> _____</p> <p>4. ¿Por que te matriculastes en la clases de Educación Agrícola? (Marca todas las que apliquen)</p> <p>a. <i>Tengo amistades en la clase</i> b. <i>El maestro me cae bien</i> c. <i>Me interesa el FFA</i> d. <i>Estoy interesado por la Agricultura</i> e. <i>Estoy interesado por la Ciencia</i> f. <i>Estoy interesado por la Tecnología</i> g. <i>Estoy interesado en el Club 4H</i> h. <i>Estoy interesado en las actividades SAE</i> i. <i>No se por que estoy matriculado/a</i> j. <i>Otra (por favor especifique)</i> _____</p> <p>5. ¿Quien te recomendó que te matricularas en clases de educación agrícola? (Marca todas las que apliquen)</p> <p>a. <i>Un Amigo</i> b. <i>Un Maestro</i> c. <i>Un Consejero</i> d. <i>Mis Padres</i> e. <i>Un Miembro Familiar</i> f. <i>Otra (por favor especifique)</i> _____</p> <p>6. ¿Le recomendarías a un amigo a que tomara clases de educación agrícola?</p> <p>a. <i>Si</i> b. <i>No (Escriba su razón)</i> _____</p>
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<p>7. Rate the usefulness of the assignments, writings, reports, and special projects, etc.) in helping you to learn agriculture.</p> <ul style="list-style-type: none"> a. Almost always b. Usually c. Sometimes d. Rarely a. Almost never <p>8. Rate the effectiveness of the teacher in helping you to learn agriculture.</p> <ul style="list-style-type: none"> a. Almost always effective b. Usually effective c. Sometimes useful d. Rarely effective e. Almost always effective <p>9. The difficulty level of agricultural education classes is:</p> <ul style="list-style-type: none"> a. Among the Easiest b. Easier than Average c. About Average d. More Difficult than Average e. Among the Most Difficult <p>10. I am treated with respect in Agricultural Education classes:</p> <ul style="list-style-type: none"> a. True b. False <p>11. On a daily basis, how much time do you dedicate studying for Agricultural Education classes?</p> <ul style="list-style-type: none"> a. Less than 5 Minutes b. 5-15 Minutes c. 30 Minutes d. 1 Hour e. 2 or More Hours f. Other (please specify) _____ <p>12. On a daily basis, how much time do you dedicate doing assignments and projects for Agricultural Education classes?</p> <ul style="list-style-type: none"> a. Less than 5 Minutes b. 5-15 Minutes c. 30 Minutes d. 1 Hour e. 2 or More Hours f. Other (please specify) _____ 	<p>7. Evalúa cuan útil son las asignaciones, escrituras, reportes, y proyectos especiales, etc.) en ayudarte a aprender sobre la agricultura.</p> <ul style="list-style-type: none"> a. Casi Siempre b. Usualmente c. A Veces d. Raramente e. Casi Nunca <p>8. Evalúa cuan efectivo es el maestro en ayudarte a aprender sobre la agricultura.</p> <ul style="list-style-type: none"> a. Casi siempre efectivo b. Mayormente efectivo c. A veces efectivo d. Raramente efectivo e. Casi nunca efectivo <p>9. El nivel de dificultad de las clases de educación agrícola es:</p> <ul style="list-style-type: none"> a. Entre los Mas Fáciles b. Mas Fácil que lo Normal c. Normal d. Mas Difícil que lo Normal e. Entre los Mas Difíciles <p>10. A mi me tratan con mucho respeto en las clases de Educación Agrícola:</p> <ul style="list-style-type: none"> a. Cierto b. Falso <p>11. ¿Diariamente, cuanto tiempo te dedicas estudiando para las clases de Educación Agrícola?</p> <ul style="list-style-type: none"> a. Menos de 5 Minutos b. 5-15 Minutos c. 30 Minutos d. 1 Hora e. Mas de 2 Horas Otra (por favor especifique) _____ f. Otra (por favor especifique) _____ <p>12. ¿Diariamente, cuanto tiempo te dedicas haciendo asignaciones y proyectos para las clases de Educación Agrícola?</p> <ul style="list-style-type: none"> a. Menos de 5 Minutos b. 5-15 Minutos c. 30 Minutos d. 1 Hora e. Mas de 2 Horas f. Otra (por favor especifique) _____
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<p>13. Are you a member of the Future Farmers of America Organization (FFA)?</p> <p>a. Yes (<i>Answer question #14, skip question#15</i>) b. No (<i>Answer question #15 skip question #14</i>)</p> <p>14. Why do you participate in the FFA organization? (Check as many as apply)</p> <p>a. Opportunity to work in the community b. Interesting agricultural subjects c. Exposure to scientific subjects d. Agricultural experiences e. Participation in educational activities f. Knowledge of the agricultural industry g. Ability to practice the English language h. Leadership opportunities i. Other (Please specify) _____</p> <p>15. Why you are not an FFA member? (Check as many as apply)</p> <p>a. I do not feel welcome b. I do not like the activities c. I do not have money to participate d. I do not have time to participate e. I think that it is a waste of time f. I have not been asked to participate g. I have language difficulties h. Other (Please specify) _____</p> <p>16. From which of the following FFA professional areas would you like to obtain information? (Check as many as apply)</p> <p>a. Ag businesses b. Food processing c. Horticulture/landscape construction d. Livestock judging e. Meats evaluation f. Soil management g. Ag mechanics</p> <p>17. Are you interested in frequently participating of the activities of the FFA organization?</p> <p>a. Yes b. No c. Undecided</p>	<p>13. ¿Eres miembro del la organización Future Farmers of America (FFA)?</p> <p>a. Sí (Contesta la pregunta #14, salte la pregunta #15) b. No (Contesta la pregunta #15, salte la pregunta #14)</p> <p>14. ¿Por qué participas en la organización FFA? (Marca todas las que apliquen)</p> <p>a. Oportunidad para trabajar en la comunidad b. Temas interesantes sobre la agricultura c. Exposición a temas científicos d. Experiencias agrícolas e. Participación en actividades educativas f. Conocimiento sobre la industria agrícola g. Habilidad para practicar el lenguaje inglés h. Oportunidades de Liderazgo i. Otra (Por favor especifica) _____</p> <p>15. ¿Por qué no eres miembro del FFA? (Marca todas las que apliquen)</p> <p>a. No me siento bienvenido b. No me gustan las actividades c. No tengo dinero para participar d. No tengo el tiempo para participar e. Pienso que es una pérdida de tiempo f. No me han preguntado si quiero participar g. Tengo dificultades de lenguaje h. Otra (Por favor especifica) _____</p> <p>16. ¿De cuál de las siguientes áreas profesionales del FFA te gustaría obtener información? (Marca todas las que apliquen)</p> <p>a. Negocios agrícolas b. Procesamiento de alimentos c. Horticultura/construcción paisajista d. Evaluación de ganado e. Evaluación de carnes f. Manejo de los suelos g. Mecánica agrícola</p> <p>17. ¿Tienes interés en participar con más frecuencia en las actividades de la organización FFA?</p> <p>a. Sí b. No c. Indeciso</p>
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<p>18. In which of the following FFA educational areas would you like to participate? (Check as many as apply)</p> <p>a. Creed speaking b. Conduct of meetings c. Parliamentary procedures d. Ag broadcasting e. Public speaking f. Chapter program g. Other (Please specify) _____</p> <p>19. Who informed you about the FFA organization? (Check as many as apply)</p> <p>a. A friend b. A teacher c. An advisor d. My parents e. A family member f. A magazine g. The Internet h. Other (Please specify) _____</p> <p>20. Would you recommend a friend to participate in the FFA organization?</p> <p>a. Yes b. No (Why?) _____</p> <p>21. Have you participated in a Supervised Agricultural Experience (SAE)?</p> <p>a. Yes (Answer question #22, skip question #23) b. No (Answer question #23, skip question #22)</p> <p>22. Why do you participate in Supervised Agricultural Experiences? (Check as many as apply)</p> <p>a. Opportunity to work in an agricultural industry b. Interesting agricultural subjects c. Exposure to scientific subjects d. Hands-on experiences e. Participation in professional activities f. Knowledge of the agricultural industry g. Ability to practice the English language h. Other (Please specify) _____</p>	<p>18. ¿En cuál de las siguientes áreas educativas del FFA te gustaría participar? (Marca todas las que apliquen)</p> <p>a. Recitación del credo b. Conducir reuniones c. Procedimientos parlamentarios d. Radiodifusión agrícola e. Discursos públicos f. Capítulo del programa g. Otro (Por favor especifica) _____</p> <p>19. ¿Quien te informó sobre la organización FFA? (Marca todas las que apliquen)</p> <p>a. Un amigo b. Un maestro c. Un consejero d. Mis padres e. Un miembro familiar f. Una revista g. En la Internet h. Otra (Por favor especifica) _____</p> <p>20. ¿Le recomendarías a un amigo a que participara en la organización FFA?</p> <p>a. Sí b. No (¿Por qué?) _____</p> <p>21. ¿Has participado en una Experiencias Agrícola Supervisadas (EAS)?</p> <p>a. Sí (Contesta la pregunta #22, salte la pregunta #23) b. No (Contesta la pregunta #23, salte la pregunta #22)</p> <p>22. ¿Por qué participas en las Experiencias Agrícolas Supervisadas? (Marca todas las que apliquen)</p> <p>a. Oportunidad para trabajar en una industria agrícola b. Temas interesantes sobre la agricultura c. Exposición a temas científicos d. Experiencias manuales e. Participación en actividades profesionales f. Conocimiento sobre la industria agrícola g. Habilidad para practicar el lenguaje inglés h. Otra (Por favor especifica) _____</p>
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<p>23. Why you do not participate in supervised Agricultural Experiences? (Check as many as apply)</p> <ul style="list-style-type: none"> a. <i>I do not feel welcome</i> b. <i>I do not like the activities</i> c. <i>I do not have transportation</i> d. <i>I do not have time to participate</i> e. <i>I think that it is a waste of time</i> f. <i>I have not been asked to participate</i> g. <i>I have language difficulties</i> h. <i>Other (Please specify)</i> _____ <p>24. Who informed you about the Supervised Agricultural Experiences? (Mark all that apply)</p> <ul style="list-style-type: none"> a. <i>A friend</i> b. <i>A teacher</i> c. <i>An advisor</i> d. <i>My parents</i> e. <i>A family member</i> f. <i>A magazine</i> g. <i>On the Internet</i> h. <i>Other (Please specify)</i> _____ <p>25. Would you recommend a friend to participate in a Supervised Agricultural Experience?</p> <ul style="list-style-type: none"> a. Yes b. No (Why?) _____ <p>26. What would you like to do after graduating from High School? (Check as many as apply)</p> <ul style="list-style-type: none"> a. <i>Study at an university</i> b. <i>Study at a community college</i> c. <i>Work at a factory</i> d. <i>Work at a store</i> e. <i>Work at a restaurant</i> f. <i>Work in an agricultural industry</i> g. <i>Work in a scientific career</i> h. <i>Work in a technological career</i> i. <i>Join the army</i> j. <i>Other (Please specify)</i> _____ <p>27. Have you considered attending a University after graduating from high school?</p> <ul style="list-style-type: none"> a. Yes b. No c. Undecided 	<p>23. Por qué no participas en las Experiencias Agrícolas Supervisadas? (Marca todas las que apliquen)</p> <ul style="list-style-type: none"> a. No me siento bienvenido b. No me gustan las actividades c. No tengo transportación d. No tengo el tiempo para participar e. Pienso que es una pérdida de tiempo f. No me han preguntado si quiero participar g. Tengo dificultades de lenguaje h. Otra (Por favor especifica) _____ <p>24. ¿Quién te informó sobre las Actividades de Experiencias Agrícolas Supervisadas? (Marca todas las que apliquen)</p> <ul style="list-style-type: none"> a. Un amigo b. Un maestro c. Un consejero d. Mis padres e. Un miembro familiar f. Una revista g. En la Internet h. Otra (Por favor especifica) _____ <p>25. ¿Le recomendarías a un amigo a que participara en una Experiencia Agrícola Supervisada?</p> <ul style="list-style-type: none"> a. Sí b. No (¿Por qué?) _____ <p>26. ¿Qué te gustaría hacer luego de graduarte de la Escuela Secundaria? (Marca todas las que apliquen)</p> <ul style="list-style-type: none"> a. Estudiar en una universidad b. Estudiar en una universidad de la comunidad c. Trabajar en una factoría d. Trabajar en una tienda e. Trabajar en un restaurante f. Trabajar en una carrera agrícola g. Trabajar en una carrera científica h. Trabajar en una carrera tecnológica i. Enlistarme en el ejército j. Otra (Por favor especifica) _____ <p>27. ¿Planeas asistir a una Universidad luego de graduarte de la escuela secundaria?</p> <ul style="list-style-type: none"> a. Sí b. No c. Indeciso
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<p>28. Have you considered attending a community college after graduating from high school?</p> <p>a. Yes b. No c. Undecided</p> <p>29 Have you talked with your parents about college?</p> <p>a. Yes b. No</p> <p>30. What level of education would you like to achieve if given the opportunity? (Mark all that apply)</p> <p>a. Technical degree b. Associate degree c. Bachelors degree d. Graduate degree e. Other (Please specify) _____</p> <p>31. What professional career would you consider to study after graduating from high school? (Check as many as apply)</p> <p>a. Science b. Technology c. Agriculture d. Liberal arts e. Education f. Agricultural business g. Engineering h. Other (Please specify) _____</p> <p>32. What is your gender?</p> <p>a. Male b. Female</p> <p>33. What grade are you in?</p> <p>a. 12th b. 11th c. 10th d. 9th e. 8th f. 7th</p> <p>34. Do you have a family member that works in agriculture?</p> <p>a. Yes (Who?) _____ b. No</p>	<p>28. ¿Has considerado el asistir a un Colegio de la Comunidad luego de graduarte de la escuela secundaria?</p> <p>a. Sí b. No c. Indeciso</p> <p>29. ¿Has hablado con tus padres sobre asistir a una universidad?</p> <p>a. Sí b. No</p> <p>30. ¿Qué nivel de educación te gustaría obtener si tuvieras la oportunidad ? (Marca todas las que apliquen)</p> <p>a. Grado técnico b. Grado asociado c. Licenciatura d. Estudios graduados e. Otro (Por favor especifica) _____</p> <p>31. ¿Qué carrera profesional quisieras estudiar luego de graduarte de la escuela secundaria? (Marca todas las que apliquen)</p> <p>a. Ciencia b. Tecnología c. Agricultura d. Filosofía y letras e. Educación f. Negocios agrícolas g. Ingeniería h. Otra (Por favor explica) _____</p> <p>32. ¿Cuál es tu sexo?</p> <p>a. Masculino b. Femenino</p> <p>33. ¿Qué grado cursas?</p> <p>a. 12° b. 11° c. 10° d. 9° e. 8° f. 7°</p> <p>34. ¿Tienes a un familiar que trabaje en la agricultura?</p> <p>a. Si (Quien) _____ b. No</p>
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<p>35. Your overall rating of the Ag teacher performance is:</p> <ul style="list-style-type: none"> a. <i>Very good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very poor</i> <p>36. Your overall knowledge about agriculture is:</p> <ul style="list-style-type: none"> a. <i>Very good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very poor</i> <p>37. Your overall experience working in agriculture is:</p> <ul style="list-style-type: none"> a. <i>Very good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very poor</i> <p>38. Your overall leadership skills are:</p> <ul style="list-style-type: none"> a. <i>Very good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very poor</i> <p>39. Your overall opinion about FFA is:</p> <ul style="list-style-type: none"> a. <i>Very Good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very poor</i> <p>40. Your overall opinion about the Secondary Supervised Agricultural Education Program?</p> <ul style="list-style-type: none"> a. <i>Very good</i> b. <i>Good</i> c. <i>Satisfactory</i> d. <i>Poor</i> e. <i>Very poor</i> 	<p>35. Tu evaluación general sobre el desempeño del maestro de educación agrícola es:</p> <ul style="list-style-type: none"> a. Muy buena b. Buena c. Satisfactoria d. Mala e. Muy mala <p>36. Tu conocimiento general sobre la agricultura es:</p> <ul style="list-style-type: none"> a. Muy bueno b. Bueno c. Satisfactoria d. Malo e. Muy malo <p>37. Tu experiencia general trabajando en la agricultura es:</p> <ul style="list-style-type: none"> a. Muy buena b. Buena c. Satisfactoria d. Mala e. Muy mala <p>38. Tu capacidad general para liderazgo es:</p> <ul style="list-style-type: none"> a. Muy buena b. Buena c. Satisfactoria d. Mala e. Muy mala <p>39. Tu opinión general sobre el FFA es:</p> <ul style="list-style-type: none"> a. Muy buena b. Buena c. Satisfactoria d. Mala e. Muy mala <p>40. Tu opinión general sobre el programa secundario de Experiencias Agrícolas Supervisadas es:</p> <ul style="list-style-type: none"> a. Muy buena b. Buena c. Satisfactoria d. Mala e. Muy mala
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Please answer the following statements using the rate scale. (5=Strongly Agree, 4= Agree, 3= Undecided, 2= Disagree, and 1= Strongly Disagree)	SA A U D SD 5 4 3 2 1 +...-	Favor de contestar las siguientes declaraciones utilizando la escala de medida. (5=Fuertemente de Acuerdo, 4= De Acuerdo, 3= Indeciso, 2= En Desacuerdo, y 1=Fuertemente en Desacuerdo;)	FA A I D FD 5 4 3 2 1
<i>As a result of participating in Agricultural Education classes I have improved my knowledge about:</i>		Como resultado de participar en clases de Educación Agrícola yo he mejorado mi conocimiento sobre:	
41.Agriculture	5 4 3 2 1	41. La agricultura	
42.Science	5 4 3 2 1	42. La ciencia	5 4 3 2 1
43.Technology	5 4 3 2 1	43. La tecnología	5 4 3 2 1
44.Education	5 4 3 2 1	44. La educación	5 4 3 2 1
45.Natural resources	5 4 3 2 1	45. Los recursos naturales	5 4 3 2 1
46. Food production	5 4 3 2 1	46. La producción de alimentos	5 4 3 2 1
<i>As a result of participating in Agricultural Education classes I have improved my skills:</i>		Como resultado de participar de en clases de Educación Agrícola yo he mejorado mis habilidades:	
47. Communicating with people	5 4 3 2 1	47. Comunicándome	5 4 3 2 1
48. Making decisions	5 4 3 2 1	48. Tomando decisiones	5 4 3 2 1
49. In being creative	5 4 3 2 1	49. Siendo creativo	5 4 3 2 1
50. Leading in the community	5 4 3 2 1	50. Dirigiendo en la comunidad	5 4 3 2 1
51. Listening before speaking	5 4 3 2 1	51. Escuchando antes de hablar	5 4 3 2 1
52. Solving problems	5 4 3 2 1	52. Resolviendo problemas	5 4 3 2 1
53. Working as a team	5 4 3 2 1	53. Trabajando en equipo	5 4 3 2 1
54. Using technology	5 4 3 2 1	54. Usando la tecnología	5 4 3 2 1
55. Thinking before acting	5 4 3 2 1	55. Pensando antes de actuar	5 4 3 2 1
<i>As a result of Participating in agricultural education classes I consider a college career in:</i>		Como resultado de participar en las clases de educación agrícola consideraría estudiar una carrera universitaria en:	
56.Agriculture	5 4 3 2 1	56. Agricultura	5 4 3 2 1
57. Business	5 4 3 2 1	57. Negocios	5 4 3 2 1
58. Design	5 4 3 2 1	58. Diseño	5 4 3 2 1
59.Engineering	5 4 3 2 1	59. Ingeniería	5 4 3 2 1
60.Human sciences	5 4 3 2 1	60. Ciencias humanas	5 4 3 2 1
61.Liberal arts and sciences	5 4 3 2 1	61. Artes liberales y ciencias	5 4 3 2 1
62.Veterinary medicine	5 4 3 2 1	62. Medicina veterinaria	5 4 3 2 1
<i>Please provide any additional comments regarding how you feel in agricultural education classes.</i>		Por favor provee algún comentario adicional sobre como te sientes en las clases de educación agrícola.	

APPENDIX G
Office of Human Subjects Approval Letter

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

January 9, 2006

Aurelio Curbelo
Agricultural Education & Studies
223 Curtis Hall

Institutional Review Board
Office of Research Assurances
Vice Provost for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Dear Aurelio,

Approval Date: January 9, 2006 Date for Continuing Review: January 8, 2007

The Institutional Review Board Chair of Iowa State University reviewed and approved the protocol entitled: The Impact of the Agricultural Education Program on Latino Students Enrolled in Iowa Secondary Schools: Recommendations to Advance the Participation of Latinos in Agricultural Careers and Higher Learning Institutions, on January 9, 2006. The protocol has been assigned the following ID Number: 05-479. Please refer to this number in all correspondence regarding the protocol.

Your study has been approved for a period of one year from January 9, 2006 to January 8, 2007. The continuation review for this study is no later than January 8, 2007. As a courtesy to you, you will receive a reminder of the approaching review date approximately one month prior this date. A continuing review form must be submitted with sufficient time prior to this date for the IRB to review and approve continuation of the study. Failure to complete and submit the continuing review form will result in expiration of IRB approval on the continuing review date and the file will be administratively closed. A new application for IRB approval will be required to reactivate the study. In addition, all research related activities involving the participants must stop on the continuing review date, until approval can be re-established, except when necessary to eliminate immediate hazard to research participants.

Any changes in the protocol or consent form may not be implemented without prior IRB review and approval, using the "Continuing Review and/or Modification." Research investigators are expected to comply with the principles of the Belmont Report, and state and federal regulations regarding the involvement of humans in research. These documents are located on the Office of Research Assurances website or available by calling (515) 294-4566, www.compliance.iastate.edu.

You must promptly report any of the following to the IRB: (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.

Upon completion of the project, a Project Closure Form should be submitted to the Human Subjects Research Office to officially close the project.

Sincerely,

Dianne Anderson
IRB Co-Chair

C: Lynn Jones, Ph.D.
Agricultural Education & Studies

APPENDIX H
Cover Letter

December 7, 2005

Dear Agriculture Teacher:

With this letter, you will be receiving the first distribution of the Secondary Public School Agricultural Education Program Latino/a Student Questionnaire, an instrument designed by Aurelio Curbelo, a graduate student in the Department of Agricultural Education and Studies at Iowa State University. This instrument was designed to describe the impact of the Secondary Agricultural Education Program during the learning process of Spanish speaking students in Iowa public schools. You have been provided with the following complements according to the population of Latino students in your classroom:

1. Parental Consent Forms
2. Students Assent Forms
3. Questionnaires
4. Answer Sheets
5. A Yellow Envelope (W/Prepaid Postal Permit)
6. Pencils

Please distribute the Parental Consent Forms to the students and ask them to take it to their parents for approval. Then distribute the Student Assent Forms to those participants with parental approval and collect their signatures. Finally, provide the Questionnaires to the students and have them place the Answer Sheets in the Yellow Envelope provided to return the materials. Please return the Yellow Envelope by mail with the Answer Sheets, Parental Consent Forms, and Students Assent Forms. You can get rid of the Questionnaires and please encourage the students to keep the Pencils for future occasions. Thanks!

Sincerely,

Aurelio Curbelo
Graduate Student

APPENDIX I
Follow Up Letter

From: Aurelio Curbelo
Graduate Student
Department of Agricultural Education and Studies
Iowa State University

Dear Agricultural Education Teachers

The Latino population has increase through the years as well as the need to produce well-educated, highly motivated Latino leaders in agriculture. This need provides a wide variety of opportunities for future graduates of high schools to explore higher learning institutions and agricultural careers to contribute to the diversity, body of knowledge, and economy of the state.

The flourishing population of Latino students in the agricultural program is a source for future leaders in agriculture. If future well educated, highly motivated leaders in agriculture are needed, it is critical to examine the impact of the Agricultural Education Program on Latino students to provide recommendations that will advance their participation in agricultural careers and higher learning institutions.

For that reason, my research aims to define the perspective of Latino students towards agricultural education classes, FFA, and Supervised Agricultural Experiences to find methods to catapult their education towards higher learning institutions and scientific careers in agriculture.

I ask for your participation in administering a mailed questionnaire to Latino students enrolled in Ag-related courses.

Please reply with the following information if you are interested:

What is your name?

What is your school address?

What is your email?

Do you have one or more Latino students enrolled in an Ag-relate course?

- a. Yes (How many?) _____
- b. No

Please write any additional comments.

Thanks!

Sincerely,

Aurelio Curbelo

APPENDIX J
Letter to Non-Respondents

December 14, 2005

Dear Agriculture Teacher:

We would appreciate it if you could please inform the researcher that the appropriate person(s) in your school received a packet of information and completed the survey developed for Latino students in the Iowa Secondary Agricultural Education Program. In completing the survey please note that there are some points that should be noted:

With the packet, you should have received the Secondary Public School Agricultural Education Program Latino/a Student Questionnaire, an instrument designed by Aurelio Curbelo, a graduate student in the Department of Agricultural Education and Studies at Iowa State University. This instrument was designed to describe the impact of the Secondary Agricultural Education Program during the learning process of Spanish speaking students in Iowa public schools. You were also provided with the following complements according to the population of Latino students in your classroom:

- a. Parental Consent Forms
- b. Students Assent Forms
- c. Questionnaires
- d. Answer Sheets
- e. A Yellow Envelope (W/Prepaid Postal Permit)
- f. Pencils

Please distribute the Parental Consent Forms to the students and ask them to take it to their parents for approval. Then distribute the Student Assent Forms to those participants with parental approval and collect their signatures. Finally, provide the Questionnaires to the students and have them place the Answer Sheets in the Yellow Envelope provided to return the materials. Please return the Yellow Envelope by mail with the Answer Sheets, Parental Consent Forms, and Students Assent Forms. You can get rid of the Questionnaires and please encourage the students to keep the Pencils for future occasions. Thanks!

Sincerely,

Aurelio Curbelo
Graduate Student

APPENDIX K
Thank You Letter

Aurelio Curbelo
223 Curtiss Hall
Ames, Iowa 50010

November 20, 2006

Iowa Agriculture Teachers
Iowa Department of Education

Dear Agriculture Teacher:

I would like to thank you and your Latino students for your generous contribution to my research. Your contribution helped understanding the perspectives of students in the program and produced recommendations to increase their participation in science and agriculture.

All of your students in your school are to be commended for their generosity. Thank you again for your contribution.

Sincerely,

Aurelio Curbelo
Graduate Student

BIOGRAPHICAL SKETCH

Aurelio Curbelo was born November 24, 1972 in Arecibo, Puerto Rico. Raised on an agricultural region, he graduated from Antonio Luchetti Vocational High School, Arecibo, Puerto Rico in 1990. He received an Associate Degree in Tropical Crop Production from the University of Puerto Rico Utuado Campus in 1993, his Bachelors of Science in Agricultural Education and Studies with a minor in Horticulture from Iowa State University in 2004, and his Masters of Science in Agricultural Education and Studies from Iowa State University in 2006. His leadership was recognized in 2005 by the president of the university Mr. Gregory L. Geoffroy and Mr. Thomas Hill, Vice-President for Student Affairs. During the years 2005-2006, he served as a Graduate Assistant Coordinator in the George Washington Carver Summer Research Program in the College of Agriculture at Iowa State University. In the National Society for Minorities in Agriculture Natural Resources and Related Sciences, Mr. Curbelo served as Chapter President at Iowa State University in 2005 and as National Graduate Vice President in 2006.

REFERENCES

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