

University of Kentucky

UKnowledge

Theses and Dissertations--Community &
Leadership Development

Community & Leadership Development

2017

ANALYSIS OF STRUCTURAL AND CULTURAL CHANGES WITHIN AGRICULTURAL EDUCATION FROM 2009-2014 WHICH COINCIDE WITH A REDUCTION OF MALE PRE-SERVICE AGRICULTURAL EDUCATORS

Alexander Tingle

University of Kentucky, alexander.tingle@uky.edu

Digital Object Identifier: <https://doi.org/10.13023/ETD.2017.120>

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

Recommended Citation

Tingle, Alexander, "ANALYSIS OF STRUCTURAL AND CULTURAL CHANGES WITHIN AGRICULTURAL EDUCATION FROM 2009-2014 WHICH COINCIDE WITH A REDUCTION OF MALE PRE-SERVICE AGRICULTURAL EDUCATORS" (2017). *Theses and Dissertations--Community & Leadership Development*. 35.

https://uknowledge.uky.edu/cld_etds/35

This Master's Thesis is brought to you for free and open access by the Community & Leadership Development at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Community & Leadership Development by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Alexander Tingle, Student

Dr. Rebekah Epps, Major Professor

Dr. Patricia Dyk, Director of Graduate Studies

ANALYSIS OF STRUCTURAL AND CULTURAL CHANGES WITHIN
AGRICULTURAL EDUCATION FROM 2009-2014 WHICH COINCIDE WITH A
REDUCTION OF MALE PRE-SERVICE AGRICULTURAL EDUCATORS

THESIS

A thesis submitted in partial fulfillment of the
requirements for a degree of Master of Science in the

College of Agriculture
at the University of Kentucky

By

Alexander Kenneth Tingle

Lexington, Kentucky

Director: Dr. Rebekah Epps, Associate Professor of Agricultural Education

Lexington, Kentucky

2017

Copyright© Alexander Kenneth Tingle 2017

ABSTRACT OF THESIS

ANALYSIS OF STRUCTURAL AND CULTURAL CHANGES WITHIN AGRICULTURAL EDUCATION FROM 2009-2014 WHICH COINCIDE WITH A REDUCTION OF MALE PRE-SERVICE AGRICULTURAL EDUCATORS

Changes within and outside of agricultural education were analyzed between 2009-2014 which coincided with a reduction of male pre-service agricultural teachers. Under the lens of the Theory of Gender Re-alignment, special attention was given to changes in legislation, curriculum, recruitment, and economic factors which relate to structural and cultural changes within agricultural education. The Changes identified in this study explain why male students are being outperformed by female students at a two to one ratio in regards to agricultural education degrees obtained.

KEYWORDS: Male Pre-service Agricultural Educators, Gender Re-alignment, Teacher Recruitment, Gender Gap

Alexander Kenneth Tingle

April 26, 2017

ANALYSIS OF STRUCTURAL AND CULTURAL CHANGES WITHIN
AGRICULTURAL EDUCATION FROM 2009-2014 WHICH COINCIDE WITH A
REDUCTION OF MALE PRE-SERVICE AGRICULTURAL EDUCATORS

By

Alexander Kenneth Tingle

Dr. Rebekah Epps

Director of Thesis

Dr. Patricia Dyk

Director of Graduate Studies

April 27, 2017

ACKNOWLEDGEMENTS

The following thesis would not have come to fruition without the divine support of many individuals. First, I would like to acknowledge my thesis committee chair Dr. Epps. Without her support, guidance and occasional reality checks, I would not be completing this research. Furthermore, I would like to acknowledge my remaining committee members, Dr. Zimmerman and Dr. Vincent, both of which provided an environment which led to the successful completion of this study.

I would also like to acknowledge my family and express my appreciation for their support in this endeavor. Without my mother's persuasive discussions to attend graduate school, this thesis would not exist. Without my brother's persuasive discussions to do anything else but write this thesis, it would have been completed sooner. And without the patience and support of my loving girlfriend, although she did not believe I would complete it, this thesis would have never been finished. I would also like to extend my thanks to the rest of my family for all of the support, time and resources they have provided through this process.

My acknowledgements would not be complete without extending thanks to those fortunate, or unfortunate, enough to have shared an office with me while in graduate school. The support, scholarly debriefings and procrastination inspired conversations are undoubtedly all contributing factors to this thesis, good, bad or indifferent.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....iii

List of Figures.....vi

CHAPTER ONE: INTRODUCTION

 Introduction.....1

 Purpose.....6

CHAPTER TWO: THEORETICAL FRAMEWORK

 Gender Gap.....8

 Theory of Gender Re-Alignment.10

CHAPTER THREE: METHODS

 Research Objectives.....14

 Methodology.....15

CHAPTER FOUR: FINDINGS

 Findings 1: Changes in Agricultural Education between 2009- 2014.....21

 Changes in Legislation Pertaining to Agricultural Education between
 2009-2014.....21

 Changes in Agricultural Education Curriculum between 2009- 201426

 Changes in Agricultural Education curriculum between 2009-2014
 according to the Journal of Agricultural Education (JAE)27

 Changes in Agricultural Education curriculum between 2009- 2014
 according to the Agricultural Education Magazine (AEM).....32

 Changes in Agricultural Education Recruitment between 2009-2014
 According to the Journal of Agricultural Education (JAE).....37

 Changes in Agricultural Education Recruitment between 2009-2014
 According to the Agricultural Education Magazine (AEM).....43

 Findings 2: Changes outside of Agricultural Education between 2009- 2014.....49

 Major U.S and World Events between 2009- 2014.....49

 U.S. Educational Attainment between 2009- 2014.....52

 U.S. Agricultural Economics between 2009-2014.....57

U.S. Labor Force and Rural Demographics between 2009- 2014.....	58
U.S. Education Salaries between 2009-2014.....	60
CHAPTER FIVE: CONCLUSIONS	
Conclusions.....	63
Implications.....	68
Future Research and Recommendations.....	69
APPENDIX.....	72
REFERENCES.....	108
VITA.....	123

LIST OF FIGURES

Figure 1.1: Practicing Agricultural Education Teachers by Gender.....4

Figure 1.2: Pre-service Agricultural Education Teachers by Gender.....5

Figure 1.3: Pre-service Agricultural Education Teachers by Gender.....6

Figure 3.1: Pre-service Agricultural Education Teachers by Gender.....14

Figure 4.1: High School Attainment 2008-2009 through 2014-2015.....54

Figure 4.2: Expected Number of Post- Secondary Degrees Awarded by School Year....56

Figure 4.3: Bachelor Degree Percentage by Gender.....57

Figure 4.4: Gender Distribution of Labor (16 years old and Over).....59

Figure 4.5: Changes in Public Education Salaries Between 2008-2014.....61

CHAPTER: ONE

Introduction

Throughout history males have dominated the educational landscape. From the ancient Greeks through the beginning of the industrial revolution and the end of apprenticeships, teachers were predominantly male and taught aristocratic male students (Houston, 2009). During the span of time from the Greeks until the dawn of public education in the United States, seldom were women allowed to participate in the traditional educational setting and if they were to obtain an education it was often through private lessons within the home. However, today only approximately 30% of our nation's public school teachers are male (Houston, 2009). This change has occurred in the last 150 years and began with the creation of the "common school" in the early 1800's (Houston, 2009).

The common school of the 1800's was designed to reach a larger population of students in the U.S and thus increased the demand for quality teachers (Sedlak & Schlossman, 1986). This led to the heavy recruiting of female teachers to fill the teacher void. It was thought that females would serve well as teachers due to their natural maternal instincts and it was also acceptable to pay them less (Sedlak & Schlossman, 1986). There were limited opportunities for women to enter the workforce during the nineteenth century which resulted in many women seeking out the teaching profession. However, gender inequalities during the time of the common school were not favorable towards women in leadership so men often climbed the ladder to school administration and received higher pay while females remained in the classroom (Houston, 2009). This image of American education has consistently remained the same from the early 1800's

through present day. According to a 2014 report on trends in the teaching force, 76.1% of teachers are female in the United States and this has increased from 66.9% in 1980 (Ingersoll, Merrill & Stuckey). In addition to a higher percentage of female teachers, the article also states that the percentage of secondary teaching and leadership positions held by females has increased as well to 52% (Ingersoll, et. al., 2014).

Although it should be celebrated that efforts have been made towards gender equality in the workplace, the image of public education does not seem to be effective in recruiting males into the classroom. In some instances the prominence of females in education have been cited to insight gender role divides as teaching being a “woman’s profession” (Carney, 2016). Ingersoll, et al. (2014) states that if the current recruitment trend of female teachers continues there will be a 4:1 ratio of female to male teachers in this country. The appeal of a teaching career for women has led researchers to believe that the structure and potential for family and work balance within the career is attractive for female professionals (Ingersoll et al., 2014). However, it is seemingly easier to diagnose the lack of appeal for male teachers as being contributed to lower pay compared to similar professions and a lack of a defined career ladder (Sedlak & Schlossman, 1986). Education has long underpaid in comparison to other professional careers and this is often a deterrent for men who are career minded (Ingersoll & Smith, 2003). Recent efforts have been made to increase incentives to attract males to the teaching profession, but salaries and professional support are still lacking across the board for American public education (Ingersoll & Smith, 2003).

Career and Technical Education (CTE) in the United States has followed a different trajectory in comparison to the entire education system. The earliest stages of

CTE took the form of apprenticeships which were extremely male dominated. Even throughout the nineteenth century and the start of the industrial revolution, CTE was led by men who taught male students (Gordon, 2014). The passing of the Smith Hughes Act in 1917 further generated gender stereotypes and created two distinct “tracks” a student would fall into depending upon their gender. For male students the Smith Hughes Act helped fund agricultural education and for females it provided funding for home economics classes (Gordon, 2014). These two gender based pathways continued essentially untouched until the start of the 1960’s.

In 1963 the Equal Pay Act was passed and started the end of discrimination based upon gender in vocations (Gordon, 2014). However, soon after the Equal Pay Act was signed, the Civil Rights Act of 1964 was passed which had a larger impact on discrimination; as it now included race and ethnicity as well as gender (Gordon, 2014). Unfortunately, gender stereotyping in CTE was still largely in place until the passing of Title IX in 1972 that ended discrimination based on gender in educational activities funded by the federal government (Gordon, 2014). Title IX was able to break the gender gap within CTE and after its passing the field has seen more gender diversity in regards to both teachers and students. Furthermore, the passing of the Carl D. Perkins Act in 1984 allotted federal funds to promote gender equality in CTE. According to Toglia (2013), even after the passing of such legislative acts, females are still largely underrepresented in many of the traditionally male dominated CTE pathways such as welding and automotive repair.

Under the umbrella of Career and Technical Education, Agricultural Education trends appear to have similarities with both CTE and the entire public education system.

Agricultural education as we know it today stemmed from the passing of the Smith Hughes Act in 1917 (Gordon, 2014). As previously stated, this put agricultural education on a male dominated trajectory well into the 1960's. Between both the passing's of the Equal Pay Act in 1963 and Title IX in 1972, the National FFA voted to allow female students to enter the organization in 1969 (National FFA, 2015). Since this vote, the percentage of female students and teachers has largely increased throughout the practice as a whole. However, the ratio of male to female teachers in agricultural education still reflects a male dominant field as the ratio of male to female practicing agricultural education teachers is 2:1 as of 2009 (Kantrovich, 2010). This is shown in figure 1.1.

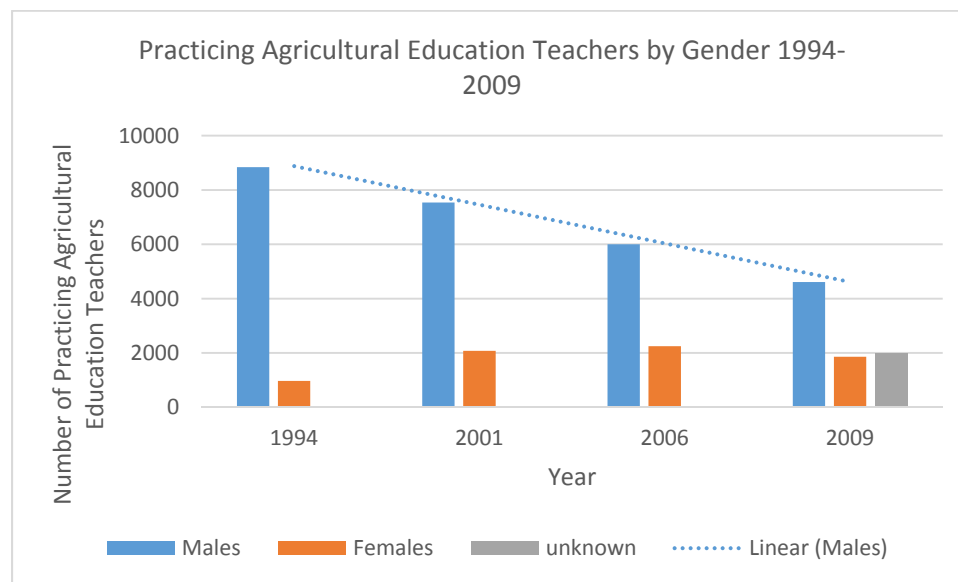


Figure 1.1: Practicing Agricultural Education Teachers by Gender

Yet, the future of agricultural education appears to be more diverse and even female dominated. As of 2015, the ratio of female to male undergraduate students becoming certified to teach agriculture was 2:1 (Foster, Lawver & Smith, 2015).

Although the ratio of practicing agricultural teachers does not yet represent gender equality within the field, the ratio of newly certified agricultural teachers has the potential to shift the trend in the opposite direction leading to a female dominated field that more closely aligns with the trends of the entire public education system. Agricultural teacher supply and demand data of agricultural educators shows that pre-service gender ratios have nearly flipped between years 2001 to 2015 (Camp, Broyles, & Skelton, 2002; Kantrovich, 2007; Kantrovich, 2010; Foster, Lawver, & Smith, 2014; Foster, Lawver, & Smith, 2015). Pre-service agricultural educator data shows that females broke the 50% barrier between 2001 and 2006 and although out ranking males, the pre-service agricultural educator gender ratios were nearly 1:1 through 2009 (Camp, et. al, 2002; Kantrovich, 2007; Kantrovich, 2010). However, National Survey of Agricultural Teachers data from 2014 and 2015 shows a spike in female pre-service teachers and a decline in male pre-service teachers (Foster et. al, 2014; Foster et. al., 2015). This is evidenced in figure 1.2.

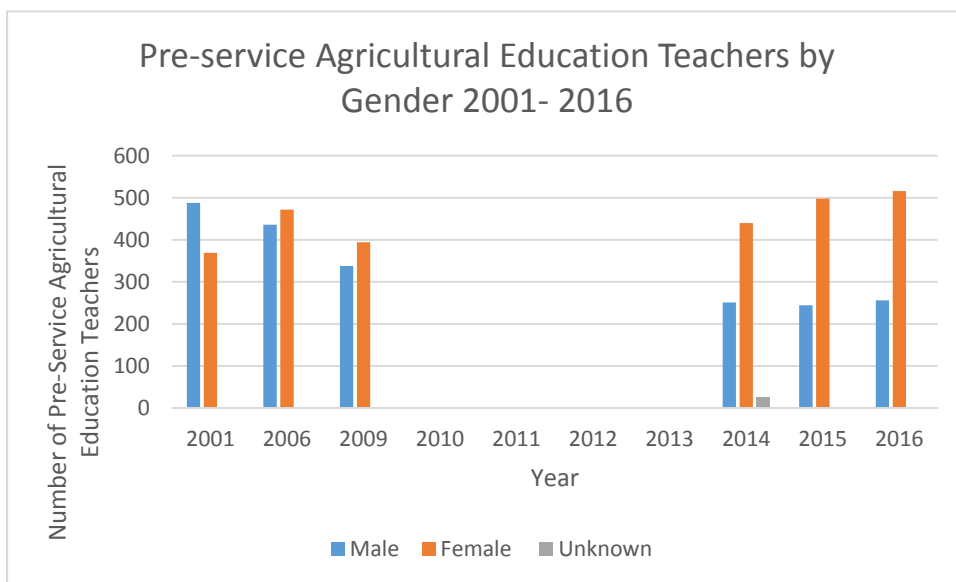


Figure 1.2: Pre-service Agricultural Education Teachers by Gender

The remaining focus of this project is to determine the pivotal events in history that have led to the current gender trends within agricultural education. More specifically, the project will analyze events from 2009 to 2014 that correlate with the decline in male pre-service agricultural teachers.

Purpose

It has been well documented that agricultural education experiences an annual shortage of qualified teachers to fill open teaching positions across the country (Camp et. al., 2002; Foster et. al., 2014; Foster et. al., 2015). However, in addition to an overall shortage of agricultural educators, recent years have also seen a decline in pre-service male agricultural educators. Agricultural teacher supply and demand data has shown that the number of male pre-service agricultural educators has reduced by half from 2001-2015 (Camp et. al, 2002; Foster et. al, 2015). This is shown in Figure 1.3.

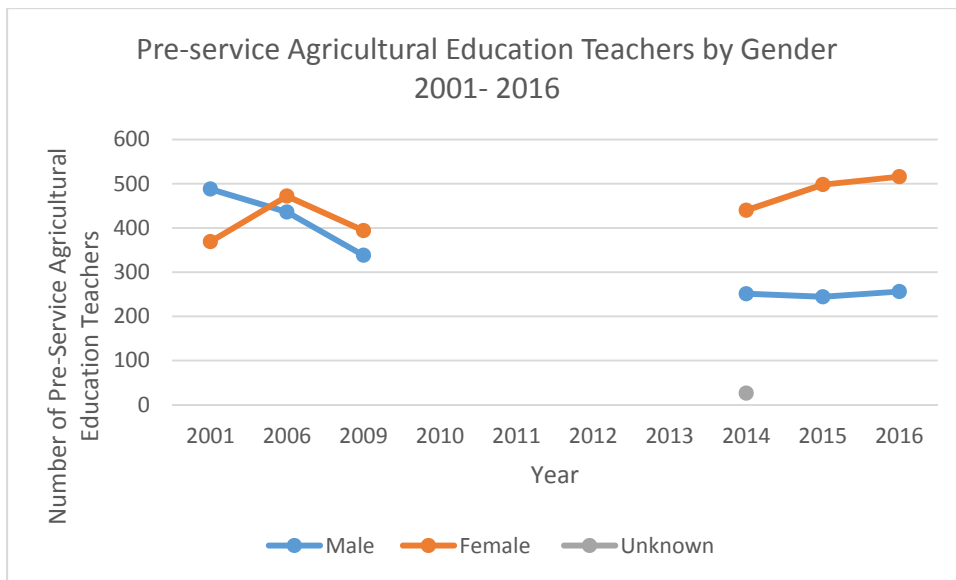


Figure 1.3: Pre-service Agricultural Education Teachers by Gender

The National Agricultural Education Supply & Demand Study was not published between 2009-2014 when the ratio of male to female pre-service agricultural educators shifted to 2:1 female to male. Because of the lack of agricultural teacher supply and demand data from years 2009- 2014, the purpose of this study is to document historical events between the years of 2009 to 2014 that have led to a reduction of male pre-service agricultural teachers. The specific objectives of the study are as follows:

1. Identify changes that have occurred in Agricultural Education between 2009-2014 with specific attention given to legislation regarding accountability, curriculum, and recruitment efforts.
2. Identify changes that have occurred outside of Agricultural Education between 2009-2014 with specific attention to major national and world events, educational attainment, agricultural economics, industry and rural gender demographics, and education salaries.
3. Describe how these events could have played a role in the decrease of male pre-service agricultural educators.

CHAPTER: TWO

Theoretical Framework

This study will broadly align its theoretical frame around the concept of gender gap. Gender gap is a frequently cited phrase that is found in many different disciplines (Legewie & DiPrete, 2012). Due to the wide use of the term, it is difficult to narrow it down to one standard definition as it changes from discipline to discipline. However, gender gap is typically assigned to label measurable differences between males and females in regards to achievement, ideologies, or behaviors (Legewie & DiPrete, 2012).

In educational studies, the term gender gap often refers to achievement differences between males and females. Historically, the educational gender gap referred to male's academic advantage over female students. Although not commonly known, females today typically outperform males academically at the secondary and post-secondary education levels in many western nations (Buchmann, DiPrete, & McDaniel, 2008; Esteve, García-Román, & Permanyer, 2012). There are still traditional achievement gaps that correspond to gender amongst the science, technology, engineering and math (STEM) subjects, but generally speaking today's educational gender gap is favorable towards female students (Miyake, Kost-Smith, Finkelstein, Pollock, Cohen, & Ito, 2010) .

A non-traditional gender gap can now be found within agricultural education teaching preparation programs. The latest findings of the National Agricultural Education Supply & Demand Study (Smith, Lawver, & Foster, 2017) show that 67% of newly qualified agriculture teachers are female, resulting in a 2:1 female to male ratio among

pre-service teachers. Again, due to the broad nature of the term, gender gap in this study will refer to the 2:1 female to male ratio that currently represents the pre-service agricultural education field.

Historically, agricultural education has been male dominated as it began as an all-male institution. Since the induction of females into agricultural education in the late 1960's, efforts have been made to right the gender imbalance to include more of both female students and male teachers. Given the current 2:1 female to male ratio of pre-service agricultural teachers, it would appear that this gender gap has since flipped.

National Agricultural Education Supply & Demand data from 2009 showed a nearly gender balanced field with 46% male 54% female pre-service teachers (Kantrovitch, 2010). There is a five year gap where this study was not published, but when the data returned in 2014 it showed the percentage of male pre-service teachers had dropped to 35%, or nearly one third (Foster, Lawver, & Smith, 2015). This proportion of 2:1 female to male pre-service teachers remained relatively constant in the following years (Smith, Lawver, & Foster, 2017). Because the gender equaling trend did not stop at roughly a 1:1 ratio, we can assume that other factors have taken place within agricultural education that have led to the current inverted gender gap. This inversion of the gender gap has led the study to consider theories that better explain the reversal of gender gaps.

Reaching outside the parameters of education, the political science field has conducted many studies on the reversals, or changes, in gender specific behavior (Inglehart, 1997; Abramowitz & Saunders, 1998; Norris, 1999; Kaufmann, 2002; Campbell, 2002). Often these studies focus on voting behaviors and why males or females vote the way they do and how these patterns have changed over time. Many of

these studies refer to the change in political ideology by gender to a “re-alignment” (Inglehart, 1997; Abramowitz & Saunders, 1998; Norris, 1999; Kaufmann, 2002; Campbell, 2002). The seemingly most common found example of this is female voters in the United States. Several studies note that females, after becoming eligible to vote, voted for very conservative candidates, while males voted for more liberal candidates. As time has progressed and although their findings are not representative of the entire population, females now tend to vote for more liberal candidates, whereas males now vote conservative (Inglehart, 1997; Abramowitz & Saunders, 1998; Norris, 1999; Kaufmann, 2002; Campbell, 2002). The concept of realignment has been discussed in several studies within the political science discipline, all of which attempt to answer why the aforementioned example of gender voting habits have changed, or “re-aligned”. Most of the findings within these studies cite changes between generational cohorts and changes within the voting culture over time as reasons for the reversal of gender based voting (Inglehart, 1997; Abramowitz & Saunders, 1998; Norris, 1999; Kaufmann, 2002; Campbell, 2002). These various concepts have since been combined to generate the Theory of Gender Re-Alignment (TGRA) (Inglehart & Norris, 2000).

The Theory of Gender Re-Alignment stems from an initial study which again analyzed a gender gap amongst voters in the United States (Inglehart & Norris, 2000). Their study too showed that females had changed their voting habits in our post-industrialized society in a fashion that was contrary to their previous conservative voting habits. Because of this, the authors proposed the TGRA as a way to explain the anticipated change in sex roles and reversal in gender based voting habits (Inglehart & Norris, 2000).

The TGRA outlines three reasons for a “re-alignment” of gender based values which led to changes in both female and male voting habits. The three factors are as follows: 1) Level of political and economic development 2) Effects of generational cohorts and 3) Structural and Cultural changes (Inglehart & Norris, 2000).

Inglehart and Norris (2000), discuss the initial factor of gender realignment, the level of political and economic development, and the extent a culture has progressed during their postindustrial era. For example, many western nations have progressed further economically which allows for change in job markets and opportunities for both sexes to join the labor force. This advancement past traditional gender roles has allowed females to develop an interest in different political views that align more towards their advantage (Inglehart & Norris, 2000), or helped to begin the gender realignment process.

Inglehart and Norris (2000), explain the second component of the TGRA, generational cohorts, by describing how in correlation with the advancement of a post-industrial society, the views within the generation changes. For example, in a political frame, the first generation of female voters tended to vote more conservatively which correlated with the needs of their particular time in relation to the economic climate. However, as time progressed and the economy became more favorable for females, the newer or younger generations would now be interested in different views that more align to their particular time in history. According to Inglehart and Norris (2000), this played out as the younger female generations aligning with more liberal, feminist views as opposed to the conservative views of the older generations.

The third factor of structural and cultural change outlined in the TGRA (Inglehart & Norris, 2000) has seemingly the largest impact on the realignment of a genders roles in

voting behavior. The TGRA outlines structural changes in post-industrialized nations to represent changes in job opportunities, availability for education, and family dynamics (Inglehart & Norris, 2000). With this in mind, factors from the initial two factors of economic development and generational differences converge with structural and cultural changes. As a society begins to move away from traditional gender roles where males serve as the main bread winner and females work in the home, opportunities for females to serve in the workforce increases. This effects both genders, thus realigning the tradition structure. Inglehart and Norris (2000), further explain that as structural changes occur, such as opportunities for females in the labor force, the change leads to overall cultural changes. At this point the generational effects take place and measurable differences in cultural characteristics overtime can be documented. In reference to the initial study for the TGRA, the cultural change led to female voters aligning more to the left as they sought new personal and professional opportunities that were not on the political radar in the earlier generations (Inglehart & Norris, 2000).

Inglehart and Norris (2000), also cite changes in the educational structure of a post- industrial society to further affect future cultural changes which includes voting behavior. The increased availability to a post-secondary education often correlates with professional and career advancement and further explains the impact structural changes can have on both the culture and the realignment of gender roles.

Naturally, the factors mentioned above of structural changes in both the labor market and educational attainment will lead to structural differences of family dynamics. Traditional gender roles within the home itself will realign as females join the work force and thus are out of the home (Inglehart & Norris, 2000). Beyond the examples of

structural change of both the labor force, education, and family dynamics, Inglehart and Norris (2000), also draw on prior studies of value change and post-modernization to further explain the more liberal views of females in the younger generations (Inglehart, 1997; Inglehart & Norris, 2000).

Due to the impact that changes in structure and culture have on gender based voting behaviors, this study will utilize the third factors outlined by the TGRA in an attempt to better understand the drop in male pre-service agricultural educators. By analyzing the structural and cultural components of agricultural education and external factors, identifying the changes in either structural or cultural components could help explain the decline in male pre-service agricultural teachers.

CHAPTER: THREE

Methods

This research project outlined how agricultural education experiences an annual shortage of qualified teachers to fill open teaching positions across the country (Camp et. al., 2002; Foster et. al., 2014; Foster et. al., 2015). It was stated previously beyond an overall shortage of agricultural educators, recent years have also seen a decline in pre-service male agricultural educators. Agricultural teacher supply and demand data has shown that the number of male pre-service agricultural educators has reduced by half from 2001- 2015 as shown in figure 3.1 (Camp et. al, 2002; Foster et. al, 2015).

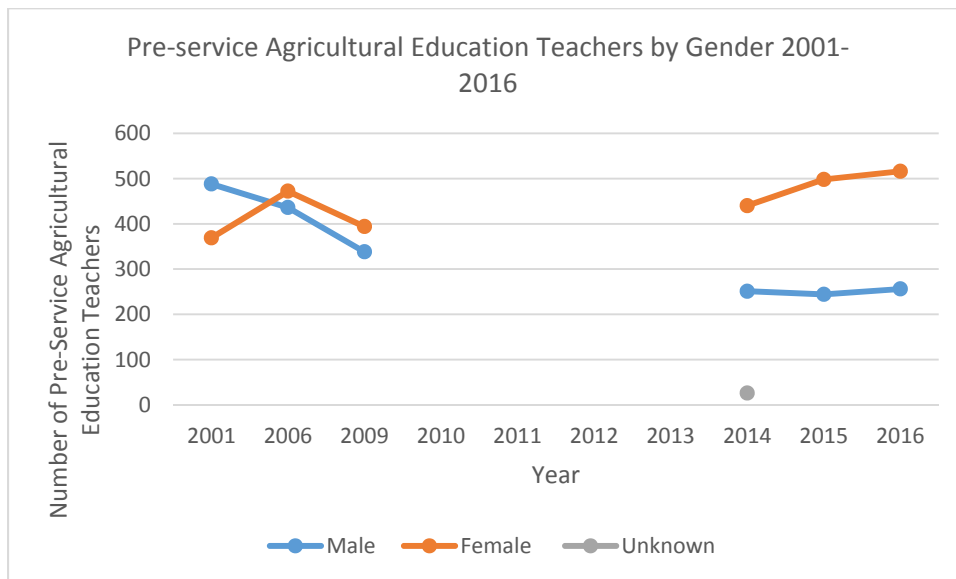


Figure 3.1: Pre-service Agricultural Education Teachers by Gender

As previously outlined, the specific objectives of the study are to:

1. Identify changes that have occurred in Agricultural Education between 2009-2014 with specific attention given to legislation regarding accountability, curriculum and recruitment efforts.

2. Identify changes that have occurred outside of Agricultural Education between 2009-2014 with specific attention to major national and world events, educational attainment, agricultural economics, industry and rural gender demographics and education salaries.
3. Describe how these events could have played a role in the decrease of male pre-service agricultural educators.

This study used historical research methods to advance the research objectives (Borg & Gall, 1983). Furthermore, the study followed the six steps of qualitative research outlined by Creswell (2014) which are as follows: organizing data collected for analysis, examining all of the data collected, coding the data, determining demographical information, advancing the findings and creating an interpretation. This combination of historical qualitative methods were followed throughout this project.

As historical documents are collected, primary and secondary sources were used to gather data pertaining to the research question. According to Borg & Gall (1983), primary sources are original documents that pertain to a specific subject and were the majority type of data used in this study. Similarly, secondary sources of data are not initial forms of documentation, such as books and information found on websites, and were used subsequently within this project (Creswell, 2014). Primary sources of data for this study included articles published in the *Agricultural Education Magazine*, articles published in the *Journal of Agricultural Education*, research agendas of the American Association for Agricultural Education, communication documents within the National Association of Agricultural Educators and policy documents of the National FFA Organization.

Secondary sources included various documented means of communication such as newspaper articles and books pertaining to the research question as a method of filling in the gaps left by the primary sources.

The validity of the data collected was analyzed to ensure credible and authentic information is used. According to Creswell (2014), validity is a positive aspect of qualitative research that ensures findings are appropriate for the study at hand. Creswell (2014), also recommends the use of multiple validity methods to insure more accurate results. With this in mind, data collected in this study were subjected to external criticism as well as triangulation.

According to Borg & Gall (1983), external criticism of historical documents allows the researchers to determine the source authenticity of the document and whether or not it should provide quality data for the study. The use of external criticism allowed the researcher to select both appropriate and quality documents that advanced the research. In addition to external criticism, the researcher followed principles of triangulation via the use of various sources of data in an effort to produce trustworthy findings and results (Creswell, 2014). According to Creswell (2014), trustworthiness is established by collecting data from various sources before establishing themes within the findings. Creswell (2014), also recommends the use of multiple validity and trustworthiness measures to strengthen qualitative research. With this in mind, Peer Debriefing of documents was utilized during the research process and Member Checking of the finalized document by the thesis committee was used to clarify themes and findings within the study (Creswell, 2014).

After the validity of the documents had been analyzed, internal criticism, via further reading of the documents, was used to test the reliability of the data (Borg & Gall, 1983; Creswell, 2014). Reliability in qualitative research is synonymous with consistency meaning data collected and its interpretation is the same throughout in relation to the research objectives (Creswell, 2014). The internal criticism process ensured that the documents selected for use in this study were appropriate and focused within the specific parameters of the research question.

After ensuring the validity and reliability of the data collected, the researcher used a process of coding to further organize and begin interpreting the data. The coding process allowed the researcher to identify the major themes emerging from the historical data. As themes become clearer, the researcher will organize descriptive data in an effort to begin the narrative process (Creswell, 2014).

Data collected for this study was first broadly selected by the date of publication in regards to the study. The study was analyzing the changes in agricultural education and public education between the years of 2009 through 2014. This five year range was decided upon due to the lack of agricultural teacher supply and demand census data during this time. However, when data again became available in 2014, the number of male pre-service agricultural teachers had fallen to roughly one third of the population of teachers (Foster, Lawver, & Smith, 2014). Due to the lack of census data available and the drop in number of male pre-service agricultural teachers, the study examined documents between this time period to evaluate the change, if any, to education at the time. Documents outside of the five year span of 2009- 2014 were considered to better explain the starting characteristics of both agricultural education and public education,

yet they were not considered when answering the research questions. However, it is likely for an article published between 2009- 2014 to contain data that predates this qualification due to potentially lengthy research and publication processes. Yet, the published article was used due to its contributions to the scholarly conversation of the time.

Documents adhering to the date qualifications of the study were then arranged by special attention factor pertaining to each research question. In regards to the first research questions, articles from the Journal of Agricultural Education (JAE) and Agricultural Education Magazine (AEM) were organized separately by relevance to the subcategories of each section. For example, articles from the JAE referenced changes in curriculum were initially grouped together and separate from articles found in the AEM that also reference changes in curriculum. Articles were then arranged chronologically by source and read to determine the validity and reliability of the document. Articles which did not pertain to either the main question or its subcategories were discarded. However, documents that directly addressed the current state of the said subcategories or called for changes were used for this study's findings.

Furthermore, at the onset of data collection in regards to the first research question, identifying changes within agricultural education, the archives of both the Journal of Agricultural Education (JAE) and Agricultural Education Magazine (AEM) were viewed within the parameters of the study years of 2009-2014. Articles found in the archives that pertained to the research question and were within the time parameters were pulled for further investigation. Documents were organized separately by individual source, read and recorded in the annotated bibliography. Because the Journal of

Agricultural Education and Agricultural Education Magazine are written to different audiences, the articles were filed and reported separately for consistency and clarity within the findings. In addition to articles obtained from the JAE and AEM, government publications and other secondary sources were used to answer the research questions.

Again, after the final selected documents per research questions and subcategories were organized, the documents were logged within the annotated bibliography (Appendix), listing their major findings or calls for action. At this point, the findings from all sources were combined to answer the research questions.

The same process was used to answer the second research question which sought to identify changes outside of agricultural education from 2009-2014. However, a wider array of primary sources were used to better understand the vast changes outside of agricultural education. Similar sources were subjected to the same scrutiny as those used to answer the initial research question, and sources were considered separately until found valid and reliable. Again, after being admitted into the findings, these documents were combined to answer the research question.

The third research question was answered via the use of the theoretical framework. As previously stated, the Theory of Gender Re-Alignment (TGRA) (Inglehart & Norris, 2000) was used to consider the drop in number of male pre-service agricultural teachers between 2009- 2014. The TGRA explains that gender gaps can be the result of a change in structural and cultural factors within a population (Inglehart & Norris, 2000). With this in mind, the third research question was answered by identifying the structural and cultural changes stated in the findings of the prior questions and concluding how these changes in factors could have led to the decline of male pre-service teachers. Both

the findings and implications are documented in the concluding chapters of the final written product.

CHAPTER: FOUR

Findings

The findings within this study are broken into two major categories which are followed by several sub-categories. These categories align with the overall purpose of this study which is to explore the reasoning for a lack of males choosing to enter pre-service agricultural education programs. With this in mind, the first finding category focuses on changes within agricultural education between 2009- 2014 and the second identifies changes outside of agricultural education during the same time frame. The sub-categories following each of these major categories will further answer the research questions.

Findings 1: *Changes in Agricultural Education between 2009- 2014.*

To fully identify the changes within agricultural education between 2009– 2014, this study specifically looked at changes in legislation, curriculum and recruitment efforts. These three identifiers will be presented in the sub-categories of the first finding.

Changes in Legislation Pertaining to Agricultural Education between 2009- 2014

While collecting data pertaining to changes in legislation, it quickly became apparent that many changes had occurred across the country at the national, state, and local levels. However, to consolidate this data to see the larger picture of legislative change, the study specifically analyzed changes brought forth by the federal government and describe the effects this had on agricultural education specifically.

To better understand the federal educational legislation, the study went outside of the studies parameters of 2009-2014 to explain and discuss the No Child Left Behind Act (NCLB) of 2001 (U.S Department of Education, 2004). Although this legislation predates the study specific time frame, it does set the stage for many of the legislative amendments that drive the changes in curriculum discussed later in the findings. The NCLB act was an educational reform focused on improving the quality of education every student received across the country (U.S Department of Education, 2004). Although there are many facets to the act itself, one of the primary changes it implemented was an increase in accountability for schools and teachers (U.S Department of Education, 2004). Although there was state flexibility to create accountability systems that best fit their needs, schools were still required to meet the national achievement goal or ramifications such as a possible removal of school administration and staff would ensue (U.S Department of Education, 2004). Because of these accountability measures and the high stakes associated with them, standardized tests become the measuring stick for accountability and spearheaded the later changes in curriculum. At the national level, other than small discussions of educational policy, the NCLB Act of 2001 remained in place until the passing of the Every Student Succeeds Act of 2015 by President Obama (U.S Department of Education, 2015), which realigns and updates NCLB. Although these legislative changes are both outside of the studies parameters, it is worth noting their effects are not immediate and it guides the legislative changes during the studies time frame of 2009-2014.

Again on the cusp of the study's parameters, in 2008 Congress extended the Higher Education Act of 1965 which continued funding for post-secondary education

through 2015 (U.S. Department of Education, 2009). The ramifications of this reissuing of the Higher Education Act of 1965 is that many students seeking a post-secondary degree had greater access to financial resources to help them do so (U.S. Department of Education, 2009). Because of this, it is presumed that total university enrollment would increase and the population of pre-service agricultural educators could rise as well throughout the study's parameters.

Moving within the timeframe of the study and in regards to national educational legislative change, President Obama signed into law the American Reinvestment and Recovery Act (ARRA) of 2009 (U.S. Department of Education, 2009) in an effort to jump start the nation's economy and spare educational funding from national budget cuts. This Act builds upon previous accountability measures and initiates the major push for specific accountability measures that are congruent from state to state (U.S. Department of Education, 2009). Also referred to as the Race to the Top Initiative (U.S. Department of Education, 2009), the ARRA provided financial incentives for states to adopt common core standards and sets in places similar incentives for career and technical national standards and assessments. As the effects of the ARRA were taking stride across the nation, in 2011 President Obama, with the U.S. Department of Education, began accepting flexibility waivers from states that allowed states to vary from specific factors and ramifications of accountability still associated with the No Child Left Behind Act (U.S. Department of Education, 2009).

Rounding out the national education legislative changes within our study parameters of 2009-2014, it was observed that President Obama had begun composing and discussing the aforementioned Every Student Succeeds Act (ESSA) of 2015 (U.S.

Department of Education, 2015). Although the passing of the act was not within the studies parameters, it punctuates the changing climate of the national educational legislation landscape. The ESSA builds upon the Elementary and Secondary Act of 1965 and provides outlines for again, more accountability measures and student success opportunities. On the national level, we have found that beginning slightly before the study dropping point of 2009, though the end in 2014, a legislative push and action for increased educational quality via high stress on accountability occurred.

Looking into more Career and Technical Education specific legislative changes, we again move outside the study parameters of 2009-2014 to set the legislative stage with the Perkins Act. The Perkins Act of 2006 is a large provider of funding for career and technical education (Advance CTE, 2017). More so than funding, the Perkins Act of 2006 intended to boost career readiness of students and promoted the creation of national academic standards for career and technical education programs (Advance CTE, 2017). This act seemingly follows the accountability trends set by the previously discussed No Child Left Behind Act of 2001 and sets in motion new accountability measures and funding incentives to meet the higher expectations.

Broadly looking at Career and Technical legislation on the national level, not much transpired until 2013 when the Perkins Act was revamped and better defined (Advance CTE, 2017). The revisions to the Perkins Act included more stress towards “rigor and relevance” which has become a buzz word and common trend in many educational circles (Advance CTE, 2017). The increase of rigor and relevance was organized through four parts which are as follows: alignment of curriculum and standards, collaboration between teachers and industry, creation of accountability

measures, and the promotion of innovation (Advance CTE, 2017). State funding was tied to these four themes of the Perkins Act, however, states still had a level of flexibility to tailor certain aspects of the curriculum and accountability measures to best fit their needs (Advance CTE, 2017). Nevertheless, even with the flexibility, states not choosing to adopt and conform to aspects of the Perkins Act did not receive funding (CTE, 2017).

Lastly in regards to CTE, the Workforce Innovation and Opportunity Act was signed in 2014 by President Obama, but did not go into effect until 2015, which is outside of the study parameters (U.S. Department of Education, 2014). Yet, the act was an additional attempt to strengthen career readiness and provided additional incentives for quality career and technical education programs.

Following suit with the overarching national education legislation, CTE also experienced changes in legislation that called for national standards and higher quality accountability measures. Although too broad to cover in this study, state specific legislation pertaining to CTE programs also changed drastically in efforts to adhere to national policies. With this in mind, according to Advance CTE (2017), between 2013 and 2016, all 50 states and the District of Columbia have passed at least one legislative action that affected Career and Technical Education within that state to some degree. More specifically, it was stated that over 500 state based CTE policies have been changed between 2013 and 2016, seemingly aligning with the revisions of the Perkins and similar national acts (Advance CTE, 2017).

Agricultural education, although under the umbrella of Career and Technical Education based legislation, began to align with national legislative initiatives in 2003 with the creation of the first national Agricultural, Food, and Natural Resources (AFNR)

standards that stemmed from the U.S. Department of Education's Career Cluster Initiative (The Council, 2015). The Council, an advisory component of the National FFA Organization, created the national AFNR standards to be used for accountability purposes within agricultural education (The Council, 2015). This first set of national agricultural education standards were revised in 2009, at the beginning of our study, to better reflect agricultural industry needs and to again improve the quality of education students were receiving (The Council, 2015). The 2009 AFNR standards remained in place and served as a building block for state agricultural education programs that tailored the national standards to their specific state based needs. However, straddling the concluding dates of our study, The Council began the revision process of the 2009 AFNR standards in 2014, via collaboration with industry and educational leaders to again better align the standards to meet student career preparedness needs (The Council, 2015). The revision process concluded and went into effect in 2015 (The Council, 2015). Although the creation of the national Agriculture, Food and Natural Resources (AFNR) standards are not specifically legislative based, it does provide the connection and effect national educational legislation had on agricultural education curriculum, which will be identified in the next findings section. Additionally, these changes in legislation begin the structural and cultural shift within agricultural education that may have created a less appealing environment for male students at both the secondary and post-secondary levels.

Changes in Agricultural Education Curriculum between 2009- 2014

To identify the changes in curriculum within agricultural education, this study examined articles published in the Journal of Agricultural Education (JAE) and articles published in the Agricultural Education Magazine (AEM). These two periodicals

provided adequate data to analyze as they serve as a “conversation block” for both researching teacher educators and educational practitioners. With this in mind, the two sources provided insight to the changes in agricultural education curriculum between 2009– 2014, yet were written to different audiences. Because of this, the articles pertaining to curriculum changes are grouped by source. However, conversations in both sources seemingly run parallel to one another in terms of the curriculum discussion of the time.

Additionally, the legislative change timeline should be referenced in regard to the curriculum discussion. At the onset of the year 2009, the American Reinvestment and Recovery Act of 2009 had just been signed by President Obama, which called for improved accountability and the adoption of state common core standards (U.S. Department of Education, 2009). The Perkins Act of 2006 is also coming to fruition with accountability based funding initiatives for Career and Technical Education (Advance CTE, 2017) and The Council has just released a revised set of national Agricultural, Food and Natural Resource standards for secondary agricultural programs (The Council, 2015). It should also be noted that various state CTE based legislation is also changing (Advance CTE, 2017), all of which drives the curriculum conversations to come.

Changes in Agricultural Education curriculum between 2009-2014 according to the Journal of Agricultural Education (JAE)

Beginning with articles retrieved from the JAE, it is apparent that the curriculum for agricultural education at both the secondary and post-secondary levels has indeed changed. In short, 2009 began a transitional period from the traditional production-based

curriculum, to a modernized science-based curriculum by 2014. The following will present the JAE articles pertaining to curriculum chronologically from 2009- 2014.

French and Balschweid (2009), published a study in which they examined the preparedness of pre-service agricultural teachers to implement science inquiry lessons. Within their study, they found that 95% of teacher educators felt comfortable teaching via conventional methods, but only 65% felt competent to implement inquiry-based teaching methods in science. Because of this, French and Balschweid (2009) recommended that changes occur within the curriculum of pre-service agricultural teachers and faculty teaching the methods of teaching course be competent in science. This article from 2009 shows the beginning of the structural change involving curriculum at the post-secondary level with a switch from more traditional methods to conventional science based curriculum.

During the same time, Theriot and Kotrlik (2009), published an article which stated the effects of standardized test performance of secondary students when enrolled in agriscience classes. Their study found these students performed equally to those in non-agricultural science classes and as a result called for expanding secondary agricultural programs to offer more agriscience classes. Furthermore, the study called for updated agricultural curriculum to remain “relevant” (Theriot & Kotrlik, 2009).

The curriculum discussion in 2009 concludes with a study published by Myers, Thoron & Thompson (2009), which looked at the perceptions of pre-service agricultural education student’s attitude towards science based agricultural curriculum. The study concluded there was interest in creating more science based agricultural curriculum and for changes to be made to the pre-service curriculum to better prepare students for

teaching science. This study further identifies the structural change beginning to occur at the onset of the time period in question of 2009-2014.

The conversation of curriculum change in the JAE continues into 2010 with an additional study pertaining to the perceptions of practicing agricultural teachers towards science based curriculum. According to Washburn and Myers (2010), practicing agricultural teachers requested more science based pre-service preparation courses. Furthermore, this study found secondary students enjoy the science based classes and the teachers feel external pressures from sources such as legislation and administration to update their curriculum.

Thoron and Myers (2010), again show pre-service teachers believe integrating science into the tradition agricultural curriculum is positive. Because of this, the study calls for changes in the teacher preparation curriculum to include more science based instruction (Thoron & Myers, 2010). This study also suggests the incorporation of science-based curriculum could also help recruit higher performing students.

An additional study published in 2010 looks at expanding agricultural pre-service curriculum to better prepare teachers to teach students with learning disabilities. Stair (2010), claims changes in the teacher preparation programs are needed to help pre-service teachers meet the needs of students with learning disabilities. Although not a change towards science-based curriculum, this article still highlights the calls for changes in pre-service curriculum of agricultural education students.

Similarly, Pense, Watson, and Wakefield (2010), published a study which called to redesign the Illinois core agricultural curriculum to better accommodate students with

learning disabilities. In addition to redesigning the state secondary agricultural curriculum, the authors too call for changes in pre-service teacher curriculum to better prepare teachers to work with students with disabilities (Pense, Watson, & Wakefield, 2010). Furthermore, the study also called for more professional development events for practicing teachers to assist with changes in the curriculum.

In 2010, a study promoting agricultural literacy curriculum was published by Park, Van Der Mandele and Welch (2010). The article simply discusses teaching literacy in agricultural education classes as it is tied into accountability. However, the article does continue to highlight the changing conversation regarding agricultural curriculum in 2010.

Saucier and McKim (2011), published a JAE article that encourages movement towards a more traditional agricultural mechanics curriculum. The authors call for more pre-service training to prepare future teachers to properly teach agricultural mechanics. Yet, it is noted in the study that if pre-service curriculum cannot be changed, that instead teacher educators should motivate their students towards self-directed learning of agricultural mechanics practices (Saucier and KcKim, 2011). This study demonstrated a slight switch in the conversation. The previous two years had been dominated by discussion to redesign pre-service curriculum to include more science. This study, which had a slight majority of female participants at 55% (Saucier & McKim, 2011), steers the conversation back to traditional curriculum pre-service teacher preparation. This article seems to call for “tapping the brakes” on the push for sciences and highlights a shift in gender roles as more female pre-service agricultural teachers are preparing to teach the traditionally male dominated agricultural mechanics courses.

The push for science-based curriculum is reignited in 2012. Articles published in the JAE by Curry, Wilson, Flowers and Farin (2012) and Haynes, Robison, Edwards and Key (2012) continue the science based conversation. These authors call for more science-based instruction at the secondary level as well as a push for more science-based professional development events for practicing teachers.

In 2013, the promotional conversation for science-based curriculum continued with articles written by Nolin and Parr (2013) and Pearson, Young and Richardson (2013). Both of these studies validate the need for more science-based curriculum and make the argument the science-based curriculum could lead to better results on standardized assessments tied to accountability. In a different direction than science, King, Rucker and Duncan (2013), issued a recommendation that professional development and pre-service training be changed to meet the more diverse needs of female and minority teachers. Although not adding to the science-based discussion, this article still calls for a change in the structure or the curriculum provided to pre-service agricultural teachers.

Wrapping up the JAE curriculum discussion in 2014, it was observed the conversation had seemed to shift once more. No longer was there just a push for science-based curriculum, but there is now tangible science-based curriculums being discussed. For example, Lambert, Velez, and Elliott (2014), published an article stating the perceptions of practicing agricultural teachers use of the Curriculum for Agricultural Science Education (CASE). Per their study, the teachers preferred the curriculum and the study recommends CASE professional development events be implemented into pre-service curriculum. Similarly, Haynes, Gill, Chumbley and Slater (2014), state pre-

service teachers agree that science concepts should be integrated into agricultural classes and recommend more science-based pre-service training and resources, such as CASE.

The change in agricultural education curriculum, as outlined in the research discussions of the JAE, show that 2009 seemingly was near the beginning of the push for more science based curriculum. More so, a need for more science-based curriculum in both secondary and post-secondary agricultural education programs is present throughout the early findings in the JAE. Years 2010- 2013 highlight more of this discussion as the research field seems to struggle with a solution. Lastly, 2014 seems to produce a tangible solution for the “need” for science-based agricultural education curriculum via the implementation of CASE or similar programs.

When considering the previously mentioned legislative changes and the curriculum discussion within the JAE, it appears that the urgency to change the curriculum from production-based to science-based was a reactionary response to the legislation as opposed to a proactive response. Because of this, the change in agricultural curriculum represents a structural change within the organization that could insight a gender imbalance among secondary students and pre-service teachers.

Changes in Agricultural Education curriculum between 2009- 2014 according to the Agricultural Education Magazine (AEM)

As previously stated, articles in the Agricultural Education Magazine (AEM) mirror the curriculum conversation outlined by researchers in the JAE. However, the audience is primarily practicing teachers as opposed to researchers, which appears to lead to differences in the curriculum conversation. Additionally, the AEM tends to publish

“themed” volumes which leads to a different chronological displacement of curriculum based articles than those published in the JAE. Yet, as observed in the JAE, the AEM shows an onset push for science-based curriculum in 2009 stemming from recent legislation and concludes with improved teaching practices to best reach these standards.

Issue four of volume 81 of the Agricultural Education Magazine is devoted to the discussion of agricultural education standards and the potential impacts they will have on the agricultural education field. Pentony (2009), wrote an article outlining the creation of the “new” Agricultural, Food, and Natural Resources (AFNR) standards that had recently been created for secondary agricultural education programs. Pentony (2009), further discussed the new national standards for agricultural education and suggests individual states should use the national standards to best fit their needs. Pentony (2009), continued to describe the legislative effects concerning the national standards and ultimately solidifies the traditional secondary agricultural education curriculum is changing. Similarly, Molina (2009) and Hall (2009), also contributed articles which identified the new changes in the secondary agricultural education curriculum and further explained how they are derived from the Career and Technical Education national career clusters.

In addition to just outlining the creation of the new national agricultural education standards, authors also published articles in defense of the curriculum change and state how the standards are needed to stay viable in the modern public education system. Chason and Hutchinson (2009), further elaborated on the need for the new standards and Stump (2009) continued the supporting conversation as well as outlining the history of “Standards” in agricultural education. Both sets of authors describe the need for quality

and a new chance for accountability from the new standards (Chason & Hutchinson, 2009; Stump, 2009).

Following both the creation outline of the new national agricultural standards and their defense, the need for assessment was also introduced in 2009. The first mention of assessment is by Gratz (2009), who identified the need for quality forms of assessment for the newly minted standards. Gratz is further supported by Womochil (2009), who also identified the need for and calls for more forms of quality assessments to help with the educational and curriculum reform. These curriculum based AEM articles from 2009 solidify the fact that the curriculum has begun the process of changing to more of a science and standards based curriculum.

Again, given the themed nature of the AEM publications, articles from 2010 are not strongly correlated with the change in agricultural education curriculum. However, Shoulders and Myers (2010), published an article pertaining to the internationally based Supervised Agricultural Experiences (SAEs) to better prepare students globally. Although not a strong tie to curriculum change, the article still highlights the changes occurring within agricultural education.

In 2011, the curriculum discussion returns to the AEM by means of teaching practices that can help teachers meet the still new national agricultural education standards discussed in 2009. An article by Clark, Ewing, and Foster (2011), detailed more reasons for teaching science-based agricultural curriculum and explored teaching methods for better instruction. Additionally, many of the articles discuss the use of technology in the classroom to better facilitate instruction and meet the standards taught (Warner & Jones, 2011; Silva 2011; De Lay 2011).

Beyond the scope of teaching methods alone, 2011 articles also highlight the need to change teacher education to better prepare teachers to teach the science-based curriculum. Filson and Whittington (2011), call for a change in pre-service teacher education curriculum to better meet the needs of all students. Dormody, Skelton, Pint and O’Byrne (2011), also call for advancing teacher professional development to center more on how to implement science-based curriculum. With this in mind, we can observe a continued conversation of change in both the curriculum of secondary and post-secondary agricultural education.

Moving forward to 2012, the conversation continues including more teaching practices to meet the newly established national standards. Science-based teaching strategies are outlined by several different authors and provide additional support for the change in agricultural education curriculum (Crutchfield & Lyder, 2012; Lawrence & Rayfield, 2012; Everett & Raven, 2012; Snyder, Cathey & Queensberry, 2012). However in addition to teaching practices, Gruis (2012), is among the first to begin proposing the benefits of the CASE curriculum compared to traditional techniques for the national standards. Although this is a continuation of the teaching practices trend, it does begin to indicate how the practitioner discussion is starting to identify a tangible method to teach the new curriculum effectively.

Curriculum discussion in the AEM returns in 2014 with two different issues with one pertaining to assessment and the other the use of laboratories. Thoron (2014), starts the conversation concerning assessment by explaining how the “standards are not going anywhere” and the assessment should be brought to task and improved. Sanok and Stripling (2014), continue discussing assessments through their article by means of how

to conduct assessments. More so than just the need and how to use assessments, Clark, Ferguson and Delay (2014), further define and explain what accountability means within agricultural education.

Again, the third issue in 2014 revolved around the use of laboratories to teach new science standards. Anderson (2014), discussed revamping traditional laboratory spaces such as agricultural mechanics labs to better teach standards. Similarly, multiple articles in this volume discussed using traditional laboratory settings to teach new science-based content (Fowler, Fowler, Tometich, Paul, Wiebe, & Crews, 2014; Wells, 2014; Emig, 2014; Collins, 2014). Eddy (2014), published an article that identified and explained the use of CASE laboratory settings to further advance science based-curriculum. However, this was observed as yet another stance on the use of laboratories to teach the modernized science-based agricultural curriculum.

Again, the curriculum conversation between 2009-2014 within the AEM evolved similarly to the conversation found in the JAE. Beginning in 2009, articles discussed the creation and its effects of the new national agricultural education standards and the effect they have on secondary agricultural education curriculum. Years 2010- 2013 roughly present a multitude of teaching practices to help teach this new curriculum effectively. Lastly, 2014 documented the permanence of the new science-based curriculum and presented ideas for the next step of assessment in addition to the use of labs. It should also be noted again that the changes in the agricultural education curriculum appear to be reactionary following the changes in legislation. Because of this, the change in agricultural education curriculum represents a structural change that may have pushed

male students at both the secondary and post-secondary levels out of agricultural education programs.

Changes in Agricultural Education Recruitment between 2009-2014 According to the Journal of Agricultural Education (JAE)

As presented in earlier sub-themes, documents from both the JAE and AEM have been collected to answer the research question. Because of the nature and audience of the two publications, articles from each resource will be organized independently and presented in chronological order.

The year 2009 presents a series of articles closely related to the discussion of the recruitment of future agricultural educators. Roberts, Harlin, and Briers (2009) present a study of the effect the student teaching experience has on an individual's desire to teach. The study was encouraged by the noted and continued deficit of quality agricultural teachers to fill vacant teaching positions annually (Roberts et. al., 2009). The authors found there was no connection between student teaching and teaching desire, but instead one's desire to teach developed earlier in the pre-service process (Roberts et. al., 2009). The researchers also state the pre-service agricultural education curriculum did play a role in teaching desire, but future research should further investigate when exactly an individual's decision to teach becomes solid. This initial study in 2009 serves as the starting point to our investigation where we have observed that researchers have identified there is an overarching recruitment deficit in pre-service agricultural teachers and they are beginning to try and solve the problem.

Following the initial recruitment study in 2009; Roberts, Greiman, Murphey, Ricketts, Harlin and Briars (2009) published a similar article investigating pre-service student changes in their decision to teach during their student teaching experience. Again, the authors found there was no correlation between student teaching and desire to teach, but still recommend future research to determine when the decision to teach is made. Roberts et. al., (2009), also recommend implementation of systematic early detection of teaching desire in students to essentially foster and further develop those students who are genuinely interested in teaching and dropping students who are not. Although still early in the examined time frame, this second article solidifies the deficit in pre-service agricultural teachers and researchers are attempting to find solutions.

Moving into 2010, several articles are published in the JAE that appear to be searching for solutions to the recruitment and retaining issues facing agricultural educators. Arnold and Place (2010), released a study examining the factors needed to recruit extension employees and it can be assumed their findings can transcend to formal agricultural educators. The study cited the need for extrinsic motivators, such as a defined career ladder, fair salaries and advancement opportunities, to help increase the number of interested individuals applying (Arnold & Place, 2010). Yet, the study also claims more “self-directed” individuals should be recruited to better fit the job description.

Similarly, Warnick, Thompson, and Tarpley (2010) called for extrinsic motivators for formal classroom agricultural educators as well. Extended contracts for agricultural teachers were sought after in their study (Warnick et. al., 2010). Although additional articles related to recruitment were published in 2010, this article seems to best sum up the conversation as researchers have agreed there is a problem, but they still do not know

what is motivating agricultural teachers to teach or how to better improve recruitment efforts.

Simonsen and Birkenholz (2010), also added to the conversation in a slightly different manor by calling for a higher quantity and quality of leadership courses being taught to pre-service teachers. According to their study, at the time there was a wide array of “leadership” content being taught at the secondary level that was more “fun” interactions than actual leadership content (Simonsen & Birkenholz, 2010). Although this study does align itself more so with the changes in curriculum, it is worth noting the leadership courses could potential be indirectly recruiting agricultural students from different demographics than the traditional students.

Along with the previous studies connection to curriculum and recruitment, Altman (2010), published a study which called for more outreach programs specifically for females and minorities in agriculture. Again, although not a solid connection to recruitment of agricultural pre-service recruitment specifically, it does show general recruitment efforts of the time were shifting towards a different population.

More in line with specific recruitment efforts for pre-service agricultural teachers, Foor and Connors (2010), comprised a historical analysis of the forerunners of agricultural education prior to the passing of the Smith-Hughes Act in 1917. Within this study, the authors highlight the first teacher-educators for agricultural education had very little connection to and lacked formal degrees in agricultural, yet were graduates of various ivy-league schools. Although looking at the past, the gist of the article was to call for the recruitment of more non-traditional pre-service agricultural education students (Foor & Connors, 2010). It is interpreted that this article highlights the start of shifting

perspectives in regards to recruitment in the sense of looking outside of the majority to find quality future agricultural teachers.

In 2011, the recruitment discussion reverts back to the question of determining when students decide they want to teach. Lawver and Torres (2011), conducted a study that again aimed to decipher when pre-service educators decided to teach. Major findings from their study stated a student's former participation in agricultural education has no effect on their decision to teach and instead their beliefs pertaining to the profession are more influential (Lawver & Torres, 2011). From their findings, the researchers made recruitment recommendations that teacher educators should promote more positive experiences for pre-service teachers and identify and target the specific needs of the individual students (Lawver & Torres, 2011).

Continuing into 2012, Vincent, Henry, and Anderson (2012), generated a model for reaching and recruiting minority students into agricultural education degree programs. The authors highlighted the specific needs and values minority students assess when making degree choices and these findings led to the previously discussed model (Vincent, Henry, & Anderson, 2012). This article indicates two different changes in the recruitment conversation in the fact it is a specific call for the recruitment of minority agricultural education students and a tangible model for recruitment had been produced.

An article published in 2013, highlighting recruitment strategies for all students in colleges of agriculture, recommended degree programs should clearly identify job availability and positive career benefits that are associated with their program (Baker, Settle, Chiarelli, & Irani, 2013). The authors suggest producing evidence of these career qualities provided the best opportunity to recruit high quality students (Baker et. al.,

2013). Furthermore, although not mentioned in the publication, the findings are continuing to build upon the recruitment model of Vincent et. al., (2012) and are providing solid answers to the recruitment problem.

Similarly, Estep and Roberts (2013), also published a recruitment focused article which determined the effects of professor rapport with students and their motivation and academic success. The authors suggested there was a correlation between professor rapport and student success and recommend agricultural teacher educators assert an effort to build more personal relationships with their students to improve recruitment and retention (Estep and Roberts, 2013). Likewise, Tippens, Ricketts, Morgan, Navarro, and Flanders (2013), provided insight into retention issues of Georgia practicing agricultural educators. Although the authors did not provide solid recruitment techniques, they do call for more research on the other end of the recruitment spectrum which is retention.

Rounding out 2013, Calvin and Pense (2013) publish an article that addressed the specific factors pre-service agricultural educators weigh in regards to their decision to follow the agricultural education degree path. Much like the model for recruiting minority students in 2012 (Vincent, et. al., 2012), the authors outline specifically the following as issues effecting agricultural education student recruitment: time, economy, family, technology, image and perceived local issues (Calvin & Pense, 2013). After identifying these factors, the researchers again recommend agricultural teacher educators and recruiters become more involved at a more personal and individual level to increase the quantity and quality of students. The recommendations of this article are showcasing the change in recruitment efforts as more specific methods of recruiting students are being researched and published.

Concluding the JAE recruitment conversation in 2014, two articles specific to the recruitment conversation were published. The first discusses the future of post-secondary agricultural education and highlights the recruitment issues are still noteworthy (Wardlow, 2014). The second article, though, provides yet more insight to specific recruitment practices that can help teacher educators recruit and retain more post-secondary agricultural education students (Irlbeck, Adams, Akers, Burris & Jones, 2014). The authors of this study focus more on first-generation college students and campus-specific support systems, or involvement, which can positively influence a students' academic success (Irlbeck, et. al., 2014). However, the article adds to the agricultural education discussion by stating the influence secondary agricultural education teachers have on their student's post-secondary choices and that teacher educators should capitalize on this by using the high school agricultural teacher as a link for recruitment (Irlbeck, et. al., 2014).

In all, the agricultural education recruitment discussion between 2009- 2014 within the Journal of Agricultural Education (JAE) demonstrates a change in recruitment has occurred. In 2009, it was clearly defined by several researchers there was indeed a recruitment issue facing post-secondary agricultural education and there was a need to determine how to better recruit and retain future agriculture teachers (Roberts, et. al., 2009; Roberts, et. al., 2009). Seemingly after the recruitment problem had been identified, researchers further explored problem areas and began to present tangible recruitment solutions such as the Vincent et. al., (2012) recruitment model for minority students. The concluding years of 2013 and 2014 provided more solutions and rounded out the recruitment conversation with recommendations for building individual and more

personal relationships with both prospective and current post-secondary agricultural education students (Calvin & Pense, 2013; Irlbeck, et. al., 2014). It should be noted, though, that minus the few articles aimed at recruitment efforts for specific demographics, the recruitment discussion at the end of 2014 was broad in nature and did not intentionally target a specific demographic. Yet, the techniques for recruitment in general had appeared to change over the period of time in question. This change in agricultural education teacher recruitment highlights cultural changes within the organization that could have led to a gender imbalance if the newer recruitment techniques were more appealing to prospective female students.

Changes in Agricultural Education Recruitment between 2009-2014 According to the Agricultural Education Magazine (AEM)

As mentioned in previous findings regarding articles obtained from the Agricultural Education Magazine (AEM), the publication tends to publish themed volumes that contain multiple articles related to a specific subject. This is true with regards to recruitment based articles as well and will lead the following findings similarly. Again, the recruitment based findings from the AEM run seemingly parallel with those found in the Journal of Agricultural Education (JAE). However, it was observed that the progression from “identified recruitment problem” to “solution” was accelerated in the AEM. It is assumed this is in part due to the nature, style and audience of the AEM compared to the JAE as it is geared towards practicing agricultural teachers and not specifically teacher educators or fellow researchers.

Given the study time parameters of 2009-2014, by pure chance the initial 2009 issue of the AEM was dedicated to recruitment issues within agricultural education.

Within this issue were many articles relating to recruitment of secondary and post-secondary agricultural education students. However, beyond defining there was indeed a recruitment problem, within the issues itself, three themes emerged in regards to the recruitment conversation.

The first theme within the initial 2009 volume of the AEM was future agricultural teachers will likely be different than those currently teaching, but should still be heavily recruited (Washburn & Warner, 2009; Disberg, 2009; Vincent & Board, 2009). Washburn and Warner (2009), begin by identifying there is a deficiency of qualified agricultural teachers to fill open teaching positions and recruitment efforts should be revamped. These authors further suggest it takes efforts from multiple parties, including agricultural teachers at both the secondary and post-secondary level, to recruit quality teachers and the new generation of agricultural teachers should reflect the new demographics of students they will be teaching (Washburn & Warner, 2009). Similarly, Disberger (2009), adds to the previous point by encouraging teachers and recruiters to look beyond recruiting secondary agricultural students that excel at career development type events and instead look for prospective teachers that exhibit teacher-esque qualities in class. In essence, this article calls for teachers to not recruit students that just win agricultural education contests, but instead recruit students that are natural teachers within the classroom sphere. Furthermore, Disberger (2010) provides the second mention that both the future students and teachers will and should “look” differently than the current demographics of agricultural teachers at the time.

Adding to the discussion of the new “look” of agricultural educators, Vincent and Board (2009), present a model to overcome recruitment issues and again mention

recruiting students that may not fit the tradition mold. Furthermore, Vincent and Board (2009), present the accelerated recruitment conversation as they begin introducing recruitment solutions via their model and call for a more “salesman” based approach to recruitment.

The second major recruitment theme to emerge within the initial 2009 AEM volume is agricultural teachers should be involved in the recruitment process (Delay, 2009; Jimenez, 2009; Buckley, 2009). Delay (2009), calls for more collaboration between agricultural educators within and across both secondary and post-secondary levels to create higher levels of support that will lead to higher levels of recruitment. Building on the collaboration aspect of recruitment, Jimenez (2009), outlines the influence secondary agricultural teachers have on their students to both choose and remain in an agricultural education degree path. Following these statements, Jimenez (2009) stated agricultural teachers should be recruiting future agricultural teachers. Buckley (2009), appears to follow the previous points by outlining more specifically the subconscious role an agricultural teacher plays in recruitment as students observe a teacher’s apparent job satisfaction daily. Simply put, Buckley (2009), stated to “love your job” in efforts to promote the positive aspects of teaching agriculture and how this can further improve recruitment efforts for the entire profession.

The second 2009 volume of the AEM was again devoted to recruitment, but took a different angle that had not yet been discussed in either the AEM or JAE. This specific issue revolved around branding and marketing agricultural education as a whole. With this in mind, given the nature of the source, again several major themes around branding appeared within the issues.

The first theme was to identify the need for branding and how to create a “brand” for different aspects of secondary agricultural education (McDonald, 2009; Elliot, 2009; White, 2009). McDonald (2009), identified the need for branding and marketing within agricultural education and discussed how such marketing could help with the recruitment process. Furthermore, McDonald (2009) also discussed factors involved in creating a successful brand within a chapter program. Elliott (2009), continued the brand creation conversation and outlined more specific details for creating an image within a chapter’s program. Following suit, White (2009), also discussed techniques for creating a brand within a specific class. Although not written as so, the discussion of branding does seem to direct recruitment efforts towards specific demographics. It is assumed these “brands” would look different at different schools and hopefully reflect an accurate reflection of the school population, but it does appear to lend itself to specific clientele.

The second theme from the AEM associated with branding is the effects it has on agricultural education programs (Dubois, 2009; Vlasin, 2009; Mack, 2009). Countering the aforementioned assumptions of a brand lending itself to a specific population of students, Vlasin (2009), published an article that challenged practicing agricultural teachers to analyze the “brand” they have created within their program and determine if it is inclusive to a larger audience of students. With this in mind, Vlasin (2009), further explains the positive and potentially negative effects branding can have on recruitment of both secondary and post-secondary agricultural education students. DuBois (2009), similarly discusses the effects of branding and how an individual’s perceptions towards the organization can change based upon certain experiences. Lastly, Mack (2009),

explains the long-term benefits of successful secondary agricultural education program branding by means of longevity through positive standings within the community.

Again, given the nature of the AEM to publish themed volumes, discussions of recruitment do not reoccur with much substance until 2011. With this in mind, much like previous AEM volumes, themes emerged within the issues relating to different elements of the recruitment discussion. However, a major theme presented throughout the volume is there is still a shortage of quality teachers and recruitment still needs to be improved.

Within this volume, Lawver and Smith (2011), present a different and standalone approach to recruitment. In their article, the authors recommend concentrated efforts on recruiting, preparing and simply getting future teachers into classrooms at which time retention factors will be addressed (Lawver & Smith, 2011). It should be noted though, the authors do not merely suggest recruiting quantity over quality, but instead the approach that if proper preparation and support is provided for pre-service teachers, it is more likely a higher number will remain in the field once they have begun their career (Lawver & Smith, 2011).

In more traditional recruitment terms, the topic of the teacher's role is reintroduced by Lawrence and Rayfield (2011). Within their article, Lawrence and Rayfield again outline the deficit of quality agricultural teachers entering the field and recommend current teachers should present their profession in a positive light to their students. In turn, the authors suggest this will spark more interest and provided assurance to future teachers that teaching agriculture is a worthy profession (Lawrence & Rayfield, 2011). In line with this thought, Killingsworth, Bird, and Martin (2011), also propose practicing agricultural teachers should "love" their jobs and help promote the positive

aspects of the career. Additionally, Killingsworth, et. al. (2011), recommend new and additional incentives for recruiting quality agricultural teachers.

Lastly in 2011, the discussion of pre-service teacher characteristics and needs were discussed in regards to recruitment. Lawver (2011), wrote an article which addressed more specifically what type of students are being recruited and how to keep them in the program. Following the previous article's points, Bellah (2011), added to the recruitment discussion by calling for changes in the pre-service agricultural education program to better address the needs of students and prepare them for their future career.

Unfortunately, due to the themed nature of the AEM, volumes or articles discussing recruitment efforts are not substantially found again within the research parameters of 2009- 2014. Because of this, it is still observed that changes in recruitment, or at least the conversation, have changed from 2009- 2011. Again, 2009 seemed to start with identifying clearly there is a deficit of quality agricultural teachers and recruitment techniques need to be advanced to address the issue. Similarly, it is identified the recruiters should seek students who do not fit the norm of the time and various recruitment techniques are introduced. Ending the conversation in 2011, the recruitment issue is still present, and again a large net is being cast in terms of suggested recruitment techniques to find quality future teachers. As previously mentioned, this change in recruitment techniques reflects cultural changes within the agricultural education organization which could insight a gender imbalance if the new recruitment techniques were more welcomed by female students.

Findings 2: Changes outside of Agricultural Education between 2009- 2014

As mentioned at the beginning of this chapter, the second major findings set will describe the changes occurring outside of agricultural education between 2009-2014 which will in turn help explain the reduction of male pre-service agricultural educators. Much like in the first set of findings, this set will also further breaking down the changes outside of agricultural education by addressing four separate sub-themes. The sub-themes are as follows: Major U.S and world events between 2009- 2014, U.S Educational Attainment, Agricultural Economics, Industry and Rural Demographics, and Education Employment Salaries.

Major U.S and World Events between 2009- 2014

The initial sub-theme of the second findings serves to help explain the national climate during the study parameters of 2009-2014. Although it is not an all-encompassing list of national and world events, selected events were chosen to both recap the era and highlight events involving the U.S. economy, political and global landscapes.

Much like the legislative discussion earlier in the findings, this study extended beyond the starting date due to the carry over effect of the first event which was the Global Financial Crisis of 2008, or better known as the burst of the housing bubble (Erkens, Hung & Matos, 2012). This breakdown of the U.S. economy is referenced as the worst economic event in the United States' history since the Great Depression in the early twentieth century (Erkens, et. al., 2012). Over lending by banks and other financial institutions created a false inflation effect within the housing market and when it reached its peak the "real" capital "popped" and seemingly overnight the U.S. and global

economies crashed (Erkens, et. al., 2012). Although this did occur before the study start date of 2009, the implications and economic effects remained in place for much of the study's duration.

Also on the cusp of the study's start date, Barack Obama, against an unpopular Republican party politically tainted by the ongoing war in Iraq, was elected as the first African-American President of the United States (Bligh & Kohles, 2009; Jacobson, 2010). In addition to becoming the first African-American President of the United States, President Obama also led the more liberal Democratic Party that took much of the political power from the more conservative Republican administration that had been in place under former President George W. Bush (Bligh & Kohles, 2009; Jacobson, 2010). President Obama's first term in office covered nearly half of our study parameters from being sworn into office in 2009 through his second election in 2012. As mentioned before, during this time, the Democratic Party had much of the political control in Washington and led a more progressive agenda guiding our nation at the time (Erkens, et. al., 2012).

Shortly after taking office in 2009, to counter balance the negative economic factors inherited from the previous administration, President Obama signed a Stimulus Package that aimed to help rebound the U.S. and global economy (U.S. Department of Education, 2009). This stimulus package is better known as the American Recovery and Reinvestment Act of 2009 (ARRA) and its effects on education were discussed earlier in the findings (U.S. Department of Education, 2009). However, in addition to educational provisions, the ARRA also provided many financial and tax based initiatives to help soften the current economic hardships (U.S. Department of Education, 2009).

Following economic issues, in 2011 the U.S. Congress passed budget cuts for a total \$38 Billion for the 2010-2011 physical year (Congressional Budget Office, 2011). These cuts were the result of growing national debt that was well into the trillions of dollars. Many of these cuts effected governmental agencies and programs (Congressional Budget Office, 2011).

Running parallel with the economic woes facing the United States, ongoing military conflicts stemming from the terrorist attacks on the world trade centers in 2001 were still present in the Middle East (Compton, 2011). However, in 2011, President Obama declared an end to the War in Iraq via a methodical withdrawal of U.S Troops from the region (Compton, 2011). Yet, U.S. military personal were still active in other areas of the Middle East and have remained there through present day.

In 2012, President Obama was re-elected and beat out the opposing Republican opponent Mitt Romney (Federal Election Commission, 2013). However, the political power holdings in Washington began to shift as more Republicans were elected into office which lead to much political dead lock through the duration of the study timeline (Federal Election Commission, 2013).

Later viewed as a hallmark of his administration, President Obama signed into law the Affordable Care Act in 2010 (U.S. Department of Health and Human Services, 2010). This act, although highly contested and debated, was the first attempt at assuring health benefits to all American citizens (U.S. Department of Health and Human Services, 2010). Through the act many health care based factors were re-aligned and many effects were felt for both employees and employers (U.S. Department of Health and Human

Services, 2010). Much of the Act's original provisions remains in place through present day.

The national climate of the United States during the timeline of the study centered around civil rights via race, gender, and sexual orientation (Baude, 2013). A prime example of this was the U.S. Supreme Court's decision in 2013 to strike the Defense of Marriage Act which did not recognize the legitimacy of same-sex marriages (Baude, 2013). Although again outside the parameters of the study, this Supreme Court Decision in 2013, helped further make possible the legalization of same- sex marriages in 2015 (Yoshimo, 2015).

Lastly, as it has been a constant throughout the studies time line, the U.S. military conflicts in the Middle East continue in 2014 with the start of U.S. led coalitions against the Islamic State in Iraq and Syria (Milne, 2015). Much of these conflicts and missions continue through the study to present day (Milne, 2015).

As outlined in this sub- theme of finding two, much of the studies' duration was shadowed by economic strife and recovery with constant undertones of military involvement against terrorism. Furthermore, the political landscape was shaped in part by the Democratic Party as President Obama was in office through the duration of the study and as a result, several legislative policies were passed which reflected more democratic ideologies.

U.S. Educational Attainment between 2009- 2014

Over the duration of the study's time frame of 2009- 2014, no significant changes occurred in regards to educational attainment within the U.S., but several smaller themes

did occur. It should be noted though that educational attainment data was typically found to be published by school year and not calendar year, but certain data points were published at calendar year intervals. Also, there were discrepancies found in the educational attainment data for the 2009-2010 school year and this data will not be discussed in these findings. With this in mind and given the use of school years data compared to calendar years, this portion of the findings will use data from both 2008 and 2015 to analyze the full scope of educational attainment within the study years of 2009-2014.

Beginning with high school attainment, the data showed that from the 2008-2009 school year through the 2013-2014 school year high school enrollment and expected graduation fluctuated from a high of 541,000 students in 2013 to a low of 401,000 students the year prior (U.S. Department of Education, 2013; U.S. Department of Education, 2015). During the same time frame the high school dropout rate dropped from 8 percent in 2009 to 6.8 percent in 2014 (U.S. Department of Education, 2009; U.S. Department of Education, 2015). Additionally during this time span, General Education Development (GED) credentials were awarded to roughly 3,300,000 individuals each year (U.S. Department of Education, 2009, U.S. Department of Education, 2010; U.S. Department of Education, 2011; U.S. Department of Education, 2012; U.S. Department of Education, 2013; U.S. Department of Education, 2014; U.S. Department of Education, 2015; U.S. Department of Education, 2016). The number of individuals receiving either a high school diploma or GED can be viewed in figure 4.1: U.S. High School Attainment

2008-2009 through 2014-2015.

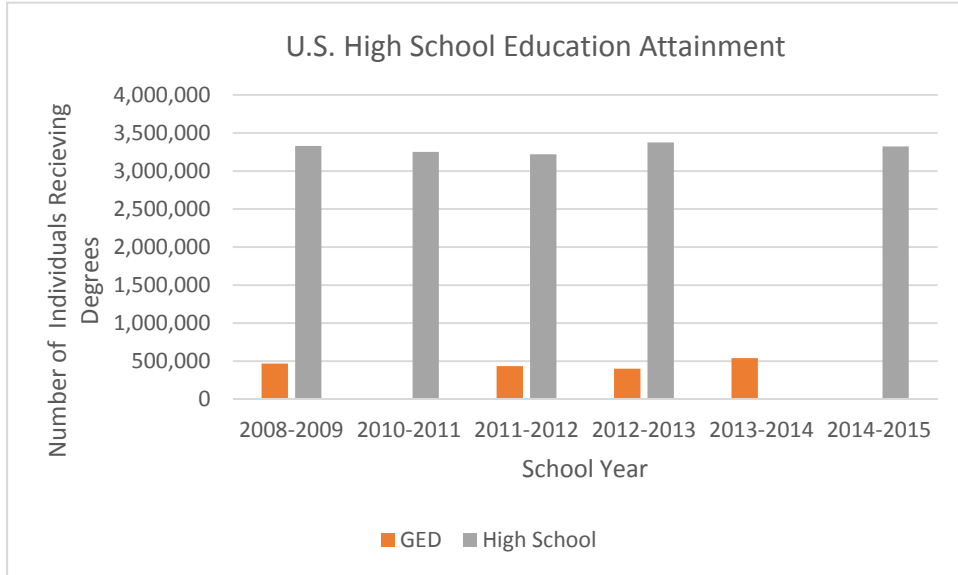


Figure 4.1: High School Attainment 2008-2009 through 2014- 2015

Beyond high school educational attainment, this study further identified the trends of post-secondary educational attainment during the same schools years which included 2008- 2015. It should be noted that the specific attainment numbers per degree level are projections based on enrollment for that school year. It is assumed that there is not a 100% completion rate of all enrolled students, but the data still provides quality insight to the educational landscape at the time.

With this in mind, over the course of the years observed, it was noted there were annual increases in the number of degrees across all levels of post-secondary education with the exception of associate and master degrees during one school year respectively (U.S. Department of Education, 2009, U.S. Department of Education, 2010; U.S. Department of Education, 2011; U.S. Department of Education, 2012; U.S. Department of Education, 2013; U.S. Department of Education, 2014; U.S. Department of Education, 2015; U.S. Department of Education, 2016). Furthermore, the second highest number of

degrees were associate degrees with 731,000 in 2008- 2009 and 949,000 in 2014- 2015 (U.S. Department of Education, 2009; U.S. Department of Education, 2014). More students were expected to receive bachelor degrees over any other post-secondary degree level. Again, the rate of expected bachelor degrees steadily increased over the years in question starting with 1,603,000 in the 2008- 2009 school years and ending with an expected 1,852,000 in the 2014- 2015 school year (U.S. Department of Education, 2009; U.S. Department of Education, 2016). Master level degrees ranked third highest beginning with 649,000 expected in the 2008-2009 school year and ending with 778,000 in the 2014-2015 school year (U.S. Department of Education, 2009; U.S. Department of Education, 2016). Lastly, doctoral degrees made up the smallest proportion of expected degrees awarded with 155,000 expected in 2008-2009 and 178,000 expected in 2014-2015 (U.S. Department of Education, 2009; U.S. Department of Education, 2016). It should be noted though that early doctoral degree expectations were derived from adding first professional degrees and doctoral degrees together. The levels of post-secondary educational attainment per degree and year can be viewed in figure 4.2: Expected Number of Post- Secondary Degrees Awarded by School Year.

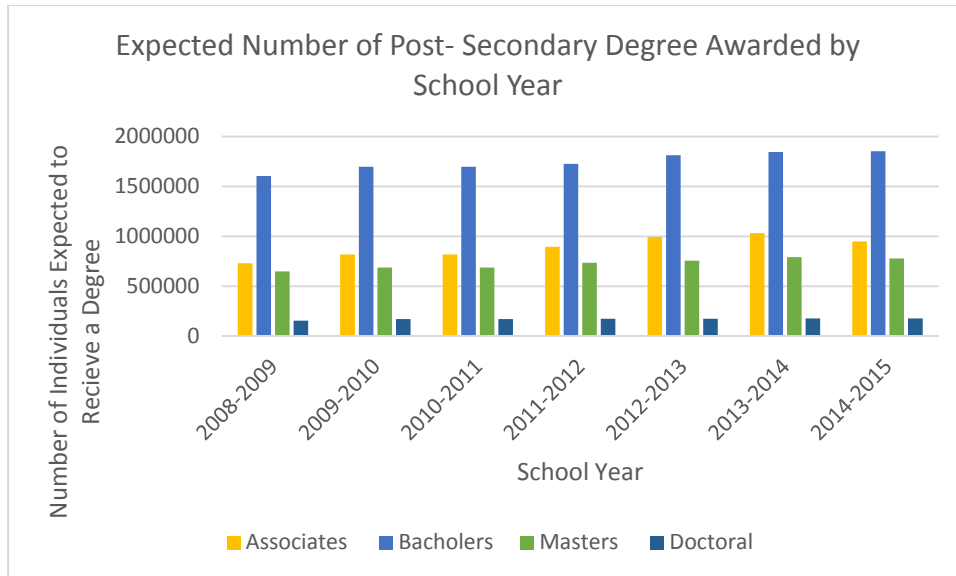


Figure 4.2: Expected Number of Post- Secondary Degrees Awarded by School Year

In terms of educational attainment, the study sought to find the difference of degree attainment by gender. Due to the overall purpose of the study to examine changes within and outside of agricultural education and to understand how these changes relate to why less males are choosing a degree in agricultural education, the study focused on the gender differences of those obtaining a bachelor’s degrees. With this in mind, it was found that in comparison to past decades males had a larger increase of bachelor degrees obtained, but females still outranked males in current bachelor degree obtainment at 57% female to 43% male (U.S. Department of Education, 2009, U.S. Department of Education, 2010; U.S. Department of Education, 2011; U.S. Department of Education, 2012; U.S. Department of Education, 2013; U.S. Department of Education, 2014; U.S. Department of Education, 2015; U.S. Department of Education, 2016). Furthermore, this percentage was found to remain constant throughout the study years in question (U.S. Department of Education, 2009; U.S. Department of Education, 2016). This ratio of

bachelor degrees awarded can be viewed in figure 4.3: Bachelor Degree Percentage by Gender.

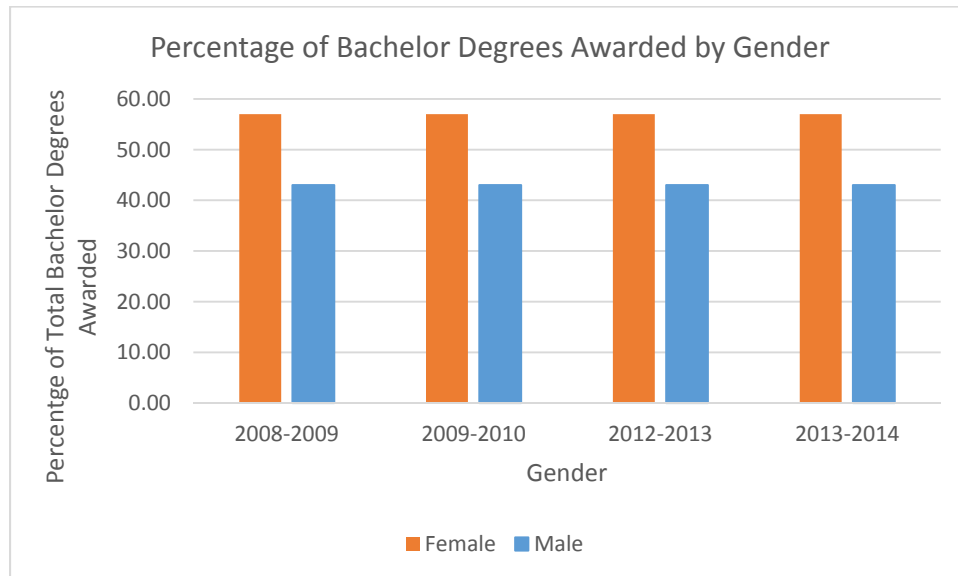


Figure 4.3: Bachelor Degree Percentage by Gender

U.S. Agricultural Economics between 2009-2014

When considering the lack of male pre-service agricultural teachers, broad scale U.S. agricultural economics were also noted. With this in mind, U.S. agricultural commodity prices rose across the board during the study years of 2009- 2014 (U.S. Department of Agriculture, 2017). More specifically, during this time prices received for corn and soybeans peaked at near record highs in 2012 and 2013 (U.S. Department of Agriculture, 2017). The rise in agricultural commodity prices stemmed from several supply and demand factors including U.S. legislative initiatives for ethanol production and a severe drought experienced in the mid-west during the same time (Carter, Rausser & Smith, 2012).

This increase of crop prices, followed by a rise in livestock prices towards the end of the study time frame (U.S. Department of Education, 2017), possibly created more

financial stability in traditional agricultural production. Because of this, it is possible young men decided to stay on the farm or chose a different degree path due to the possibility of financial prosperity in agricultural production. However, agricultural commodity prices have since leveled out and these effects on pre-service agricultural teachers have yet to be determined.

U.S. Labor Force and Rural Demographics between 2009- 2014

This sub-theme aimed to build upon the previous educational attainment data and analyzed the gender distribution in the U.S. labor force within the study time frame of 2009-2014. The study compiled the employment status of the civilian noninstitutional population by sex, age, and race data sets from the current population survey produced by the U.S. Department of Labor to create a simple gender distribution of the entire U.S. working population 16 years old and older. From our analysis, the study has found with the exception of a total decrease among both genders in 2010, small annual increases per gender occurred in the overall labor force. Furthermore, females comprised nearly 47 percent of the total labor force for the duration of the study years and males made up the additional 53 percent during the same time frame (U.S. Department of Labor, 2010; U.S. Department of Labor, 2011; U.S. Department of Labor, 2012; U.S. Department of Labor, 2014, and U.S. Department of Labor, 2014). This distribution can viewed in figure 4.4: Gender Distribution of Labor Force (16 years and Older).

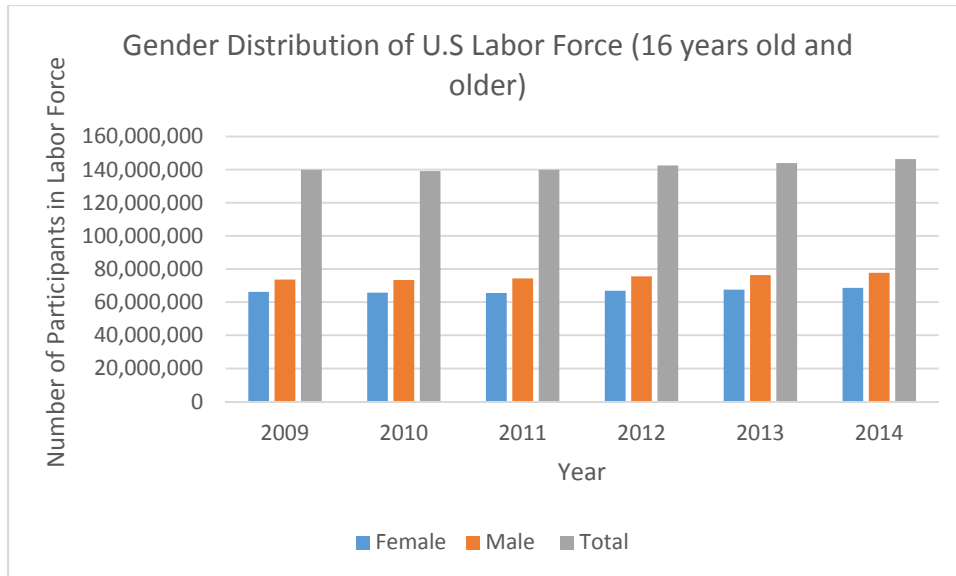


Figure 4.4: Gender Distribution of Labor (16 years old and Over)

Contrary to the entire distribution of the workforce, it was found the females make up 52 percent of management and professional level jobs and this remained constant over the study years (U.S. Department of Labor, 2010; U.S. Department of Labor, 2014). This level of female participation in higher level jobs had also increased from 51 percent in recent decades (U.S. Department of Labor, 2010).

In regards to the rural labor force, it has been documented the average age of laborer is higher and pay wage lower than a similar laborer in an urban setting (Wang & Findeis, 2004; Day, Hays & Smith, 2016). These economic gaps between rural and urban laborers are often more profound for women due to an increased gender wage gap with less job opportunities available (Wang & Findeis, 2004). However, a career as an agricultural educator in a rural community could offer financial stability and family flexibility which may be more attractive to females in such areas. These factors could also contribute to the lack of males enrolled in pre-service agricultural education programs if the career path has become more attractive economically for females.

As mentioned previously in regards to military involvement, a higher percentage of enlistees in the U.S. military are from rural areas (O'Hare & Bishop, 2006). Lack of economic opportunity in such rural areas has led to the attractiveness of the military for many young rural men (O'Hare & Bishop, 2006). With this in mind, the constant U.S. military conflict could have put a strain on the number of rural males who might have sought a degree in agricultural education.

U.S. Education Salaries between 2009-2014

The concluding sub-theme of the second objective sought to identify the salaries of public educators in the United States over the course of the years in question 2009-2014. Although several states do have additional forms of financial benefits for agricultural teachers that often exceed that of core discipline teachers, these findings analyzed averaged education salaries across the board to better understand a more accurate picture. The average public teacher salaries were derived from the U.S. Department of Education which highlighted educational attainment within the U.S. and were compiled for further analysis.

The public teacher salary data showed slight annual increases over the study time frame starting with an average salary of \$53,910 in the 2008-2009 school year and ending at \$56,689 in the 2014-2015 school year (U.S. Department of Education, 2009, U.S. Department of Education, 2010; U.S. Department of Education, 2011; U.S. Department of Education, 2012; U.S. Department of Education, 2013; U.S. Department of Education, 2014; U.S. Department of Education, 2015; U.S. Department of Education, 2016). It should be noted that these dollar amounts represent the raw dollar figure per year and do not account for inflation. However, it was stated in the data that education salaries of this

time were nearly 2 percent lower than those of in previous decades (Snyder, Brey & Dillow, 2016). The change in teaching salaries can be viewed in figure 4.5: Changes in Education Salaries from School Years 2008-2009 through 2013- 2015.

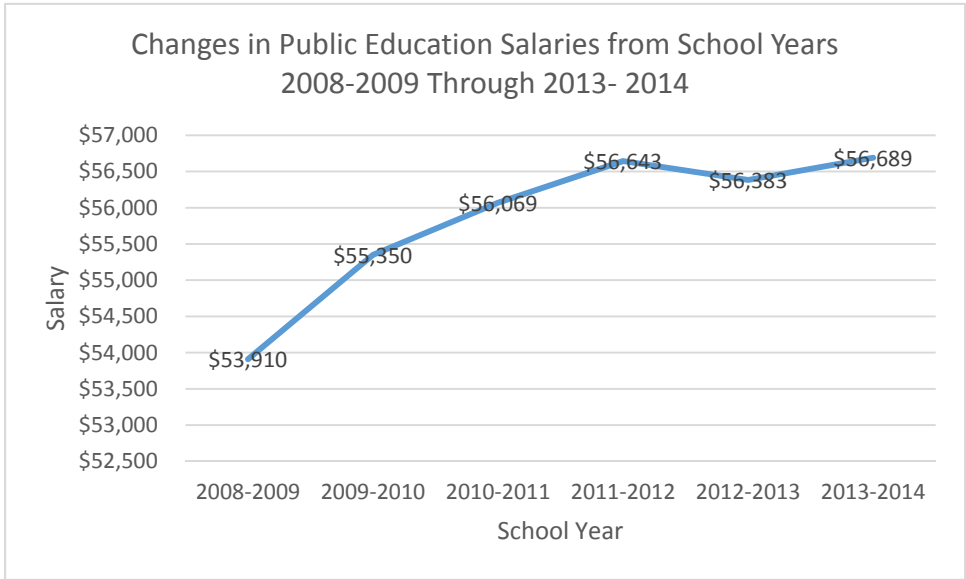


Figure 4.5: Changes in Public Education Salaries Between 2008-2014

In all, the findings of this study provide data which addressed the three leading research objectives. In order to better understand the lack of male pre-service agricultural teachers, this study sought to identify changes within and outside of agricultural education between 2009-2014 and to explain the possible connections between these changes and the pre-service agricultural teacher gender ratio.

Agricultural education experienced changes in terms of legislation, curriculum and recruitment efforts between the years of 2009-2014. The passing of various national education reform acts changed legislation to add an emphasis on teaching national academic standards from which were tested to yield accountability results. These legislative changes influenced the agricultural education curriculum to change from more traditional production based courses to science-based courses. At the same time, teachers

and teacher educators of agricultural education pushed for changes in both recruitment tactics and those being recruited as future teachers. It was recommended that new agricultural education recruits represented a more diverse population and the recruiters used more individually focused recruitment techniques.

Outside of agricultural education, the United States also experienced several events that were notable in our findings. Directly before the start of our study year, the U.S. experienced a negative economic event that led to economic recession. Although this heightened the financial stress of many Americans, the passing of legislation provided additional funding to seek higher education. For the majority of the study years of 2009-2014, the Democratic Party controlled the majority of elected governing positions in Washington, D.C. which also impacted legislative changes. The U.S. was also involved in military actions throughout the study as well. The study also examined U.S. labor demographics and found that although total working males outranked females, there was nearly an even distribution of genders among higher level jobs. Also, after identifying changes in public teaching salaries, it was found that after a short spike at the start of the study, teacher salaries remained stagnant throughout the duration of the study years. These factors all represent structural and cultural changes within the U.S. that could have led to a decline in the number of male pre-service agricultural teachers. The connections of these events and the decrease of male pre-service agricultural teachers will be outlined in the following chapter.

CHAPTER: FIVE

Conclusions, Implications and Future Recommendations

Conclusions

This study sought to identify changes within and outside of agricultural education between the years of 2009-2014 to better understand why the number of male pre-service agricultural teachers declined during the same time.

With this in mind, the study did find there were indeed changes within agricultural education that included legislation, curriculum and recruitment techniques. The study identified legislative changes throughout the study parameters that led to changes in educational accountability. These accountability factors were typically measured via standardized test of which scores were tied to funding. Because of these legislative changes, career and technical education and specifically agricultural education, created national standards to better meet the accountability needs. This legislative push and creation of standards also fueled curriculum changes within agricultural education that switched from more traditional agricultural production practices to more science based. Both the accountability legislation and curriculum fed off of each other as agricultural teachers began, in a reactionary response to the legislation, teaching the modernized curriculum to essentially score better on standardized accountability tests. Running parallel with the changes in legislation and curriculum, agricultural education leaders also began addressing the deficit of agricultural teachers entering the profession annually. It was found in this study recruitment efforts of future agricultural teachers changed from broad terms of recruiting traditional agricultural

students to becoming more personalized in the recruitment of a more diverse future teacher population.

In conjunction with the changes in agricultural education between 2009–2014, the study also identified changes outside of agricultural education to better understand the lack of males in the field. The study identified during 2009–2014, the United States endured one of the worst economic collapses since the Great Depression. The U.S. was led by a primarily democratic controlled national government and was involved in at least one foreign military conflict throughout the study. It was also found educational attainment of U.S. citizens grew steadily over the years in question and females received the majority of bachelor degrees annually. Similarly, the U.S. labor force was analyzed by gender and although males still dominate the entire working population, females occupy over half of professional and higher level positions across the country. Educational salaries were analyzed and found to remain nearly constant throughout the duration of the study years. These changes both within and outside of agricultural education within the study timeframe highlight structural and cultural changes that could have led to a reduction in the number of male pre-service teachers.

The third research question sought to describe how these events could have played a role in the decrease of male pre-service educators. The remainder of this section will attempt to address this research question.

As mentioned in chapter two, this study utilized the Theory of Gender Re – Alignment (TGRA) (Inglehart & Norris, 2000) as a lens of which to analyze the gender change in pre-service agricultural educators. The TGRA outlines three factors leading to a “re-aligning” of gender specific rolls which include political and economic

development, generational cohorts, and structural and cultural changes (Inglehart & Norris, 2000). Although arguments could be made for all three of these factors, this study specifically analyzed the structural and cultural changes both within and outside of agricultural education to better understand the change in gender based participation.

From our findings it is apparent that agricultural education did experience both structural and cultural changes throughout the years analyzed. The structural changes were found within the changes in legislation and curriculum. As previously stated, the study era saw a change in educational accountability legislation that led to structural changes of the agricultural curriculum at both the secondary and post-secondary levels. Legislation, via funding incentives, pushed the agricultural curriculum to change from traditional production based agriculture to a new science based curriculum drawn from and tested by national standards.

As noted in the findings, the change in agricultural education curriculum appeared to be a reactionary response to the changes in legislation as opposed to a proactive approach. During this process, as a whole, it seemed that agricultural education disposed of the traditional production-based curriculum although it could be argued that many of the “new standards” were currently being taught via the traditional curriculum. The traditional curriculum seemingly was attractive to males given the longstanding prior male participation rates, but when dismissed by agricultural education, so were the males. It is possible this structural change of legislation and curriculum could have led to gender re-alignment within agricultural education if more female students were apt to succeed in such an environment.

Furthermore, agricultural education experienced cultural changes in regards to recruitment. As mentioned in the findings, between 2009–2014 agricultural education recruitment efforts changed from the broad recruitment of traditional agriculture students to individualized recruitment efforts which targeted a more diverse population. Because of this, both the culture of recruitment and cultures being recruited for agricultural education changed. Again, this cultural change in agricultural recruitment efforts could have added to the gender re-alignment of the field were females were more apt to enroll in pre-service agricultural education programs.

Events outside of agricultural education between 2009–2014 also indicated structural and cultural changes in our nation as a whole. The state of the economy indicated one of the larger structural changes as many Americans struggled financially during this time of 2009-2014. The financial burdens could have changed the labor structure and forced once college bound students to search for jobs instead. However, legislative changes counteracted this by providing financial aid to students seeking higher education via the extension of the Higher Education Act. This signing served as an additional structural change in the nation's ability to obtain a post-secondary degree. This was noted in the educational attainment findings with an increase in total degrees awarded, and a higher percentage of females receiving bachelor's degrees. The gender ratio of bachelor degree attainment showcases positive effects of gender realignment from recent history when females did not often obtain post-secondary degrees, but further solidifies that a change has occurred and males may have migrated elsewhere.

Structural changes in the United States induced cultural changes that run parallel as well. For example, the financial crisis could have cultural impacts on both genders as it

forced individuals and families to find additional means of income to support themselves. Similarly, the additional access to educational funding generates a cultural change as more members of the society have access to obtain degrees than before. This could have implications on future educational attainment expectations for both genders.

The U.S. agricultural economy during the study years could also have had a profound structural impact on agricultural education. Again, U.S. agricultural commodity prices surged in the middle of the study's time frame of 2009-2014 and may have incentivized many young males to stay on the farm. Similarly, the potential for production based financial prosperity could have pushed males towards other business focused degrees as opposed to agricultural education.

The presence of a constant military conflict also presents structural and cultural changes as more individuals choose the military over higher education. Yet, the inverse could be true and the higher volume of active military personnel could have led to more individuals eligible for educational support under the G. I Bill. Furthermore, the attractiveness of enlisting in the military for individuals in rural communities could have led to more males opting out of a degree in agricultural education in pursuit of military based economic benefit.

Although there was little change noted in the U.S labor force demographics over the years examined, the equal distribution of upper level jobs by both genders indicates that gender re-alignment has occurred in at least that sector, and could highlight future changes to come in other industries, much like that of agricultural education.

Even though the labor gender distribution is balancing, economic prosperity in rural communities can be harder to obtain than in an urban setting. Even more difficult for females, a career as an agricultural educator maybe a stable choice for career and family minded rural women. Because of this, it is possible that the overall economic benefit of teaching agriculture is higher for females than males and has contributed to the gender imbalance in pre-service agricultural educators.

The average public education salary should also be considered when analyzing the structural changes outside of agricultural education. After a small initial increase in the average teaching salary, it remained stagnate throughout the duration of the study. Coupled with the effects of the financial crisis, this could have also re-aligned gender roles and driven males away who were expecting to receive higher levels of pay.

In sum, the study identified both structural and cultural changes within and outside of agricultural education which could have led to the reduction of male pre-service agricultural educators. Again, the TGRA highlights how structural and cultural changes across societies can lead to re-alignment of gender roles and behaviors, and this is thought to have happened within agricultural education.

Implications

The implications of this study are multi-faceted and can be utilized by practitioners of agricultural education, agricultural education teacher educators and pre-service agricultural teachers.

Practicing teachers of agriculture can use the findings of this study to better understand the current state of agricultural education and how it has changed in recent

years. From there, practicing teachers can analyze aspects of their current programs and determine if they are more attractive to one gender over another. This would allow the practicing teacher to adjust elements of the program to initiate more balanced gender ratios that would in turn feed into the post-secondary agricultural education programs.

Teacher educators can use these findings as to better understand both the current state of agricultural education and its recent changes to address recruitment needs to attract more male pre-service teachers. Furthermore, teacher educators can use the findings of this study as a building block for future research. Essentially, this study identifies different factors of agricultural education that have changed which coincide with the reduction of male pre-service agricultural teachers. From there, teacher educators and researchers could further investigate these different elements to recommend adjustments that promote a more balanced gender ratio of pre-service teachers.

Pre-service teachers can also use this study to analyze their own reasoning for choosing the profession and how that relates to the changes found in the study. After making personal connections, pre-service teachers can assist both teacher educators and practicing agricultural teachers to make adjustments within agricultural education to attract more male students.

Future Research and Recommendations

Being descriptive by nature, this study identified specific changes within agricultural education that run parallel with the reduction in male pre-service agricultural teachers. It did not, however, specifically test the effect each factor had on gender

specific involvement. Because of this, the study is left with several questions that should further be investigated by future researchers.

First and foremost, future research should identify where the male population of pre-service agricultural teachers has migrated to. Although this study analyzed different aspects of agricultural education and U.S. educational attainment in general, it did not identify where these individuals have gone. Because of this it is unclear if more males have left agricultural education to pursue other agricultural professions, if they have migrated more towards industry and trade careers or if they have voided higher education all together. By first analyzing specifically where males are going to instead of agricultural education programs, researchers could then analyze more details and make additional recommendations to balance the field.

After determining where the male population has gone, the next need for future research would be to analyze why the migrated males have chosen to leave or not enter the agricultural education field. This study identified specific changes both inside and outside of agricultural education that coincide with the lack of male pre-service agricultural teachers. However, it does not pursue the effect of each factor individually. Although this study identified a change in agricultural education curriculum, further qualitative studies could find that the change in curriculum had little effect on why males were not entering the field, but instead concerns with stagnant teacher salaries were of higher concern. Future researchers can and should use the identified changes within and outside of agricultural education to better understand the impact each specific factor has on gender involvement in the field.

As future research begins to shed light on where and why males have left agricultural education, future research also should further investigate the specific changes outlined in this study and how they contribute to the where and why of males leaving the profession. More specifically, via quantitative and qualitative methods, researchers should analyze and arrange the effect the changes in legislation, curriculum, and recruitment, in addition to the external factors, by order of which they had the most effect on potential male's decision to enter the field. Again, this would build upon the findings of this study, and the first two identified future research needs, at which point researchers could begin making tangible recommendations of methods to reverse the trend and create more gender balanced pre-service agricultural education programs.

APPENDIX

Annotated Bibliography

Lack of Male Pre-service Teachers in Agricultural Education

General Education:

1. Carney, C. (2016). The Status of Male Teachers in Public Education Today. Retrieved September 9, 2016, from http://www.menteach.org/mens_stories/the_status_of_male_teachers_in_public_education_today
 - This Editorial article summaries another article that should be referenced during the begging of the introduction. However, the article provided little scholastic advancement for this thesis.
 - Thesis Use: Low
2. Fast Facts (2016). National Center for Education Statistics. Retrieved September 9, 2016, from <http://nces.ed.gov/fastfacts/display.asp?id=28>
 - This document has complied raw statistics from the U.S Department of Education to be presented in a more easily attainable format. The document highlights the number of schools, teacher characteristics by gender, and pupil to teacher ratios. The numbers are similar to other documents cited and will be used in the introduction.
 - Thesis Use: Mod- Low
3. Goldin, C., Katz, L. F., & Kuziemko, I. (2006). The homecoming of American college women: The reversal of the college gender gap. *The Journal of Economic Perspectives*, 20(4), 133-133.
 - This study examines the gender gap among college attendees and graduates in the United States and abroad. The study identifies that over the past century, minus a few moments, the ratio of male to female college graduates has been either equal or swayed in favor of females. The study cites specifically that females have “caught up to” and “Leapfrogged” males over the past fifty years. The article cites various reasons for these results, but sums up the study by stating that the playing field has been leveled for females in the labor force and that the economic benefit of obtaining a degree is higher for females than males. More so, females outperform male students in high school preparation for college. In addition to being out performed by females, males were cited to have more “Behavioral issues, later maturation and impatience.” This led to higher discipline issues both in and out of school and less effort put forth to school work. This study will be highly useful in the introduction as it helps to explain the overarching gender gap of undergraduate students and

degree recipients. The study also briefly explains the role education as a profession has played in this gender gap.

- Thesis use: High
4. Houston, W.R. (2009). Teachers in history. L.J. Saha & A.G. Dworkin (Eds.), *International Handbook of Research on Teachers and Teaching*. Springer Science+Business Media.
 - This article provides overarching historical background for teachers in general. It briefly explains characteristics of teachers throughout history from the ancient Greeks to present. It highlights the swift and dramatic shift of gender roles as teachers in the U.S and explains how education and teachers reflect the society and culture which they serve. The article explains the three major changes of the U.S school and compares this to historical changes in other societies. In all, the article provides great insight to teachers historical and can be cited in the introduction.
 - Thesis Use: Moderate
 5. Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational leadership*, 60(8), 30-33.
 - This brief study examines teacher attrition rates among beginning teachers. Although a general teacher shortage still exist, the authors do not suggest that simply recruiting more teachers will make an impact. They use the metaphor of a bucket of water with holes in it to represent the current teacher attrition problem. The studied followed up on exit- surveys of teachers leaving the field whom said they were dissatisfied and found the top reason for being so. Of these reason, low salaries were cited highest and followed by overall working conditions. The authors suggest administrators focus on work conditions over salaries due to the sheer expense that would put on the educational system. However, the authors believe that if administrators put in the effort to improve work conditions, the level of begging teacher attrition would be lowered. Overall, this studied can be utilized to confirm teacher shortage in the early 2000's and piggy back off the 1986 article. The study also helps frame administrative and school changes seen throughout the late to current 2000's. in regards to gender, the study does not provide much data, however, the reasons for leaving could again correlate with the same findings of the 1986 article where men were not attracted to the profession because of low salaries and an ideal working conditions compared to that of similarly qualified individuals.
 - Thesis Use: Moderate
 6. Ingersoll, R., Merrill, L., & Stuckey, D. (2014). Seven trends: The transformation of the teaching force, updated April 2014. CPRE Report (#RR-80). Philadelphia: Consortium for Policy Research in Education, University of Pennsylvania.

- This publication will serve as a very important document for the introduction of the thesis. The document identifies seven of the major trends in U.S education with data through 2011. Although not completely to date, it will lay a solid ground work for the introduction. Furthermore, it explains the trend of gender in education as it is becoming even more female dominated. However, it predicts that this is largely due to the fact that female administrator rates have greatly increased which could lead to increased female rates across the board. However, it also sites that the total number of male teachers have increased, but by percentages, females still make up 76% of the educational force. It should be looked into further why the male number has increased as well.
 - Thesis use: High
7. Data About Men Teachers. (2014). Retrieved September 9, 2016, from http://www.menteach.org/resources/data_about_men_teachers
- This document has gathered data from the U.S Bureau of Labor Statistics and compiled it in one central location. The document can be used for fast facts and shows that in 2014, 43% of secondary teachers were male. Can be used in the introduction.
 - Thesis use: Mod- Low
8. Sedlak, M., & Schlossman, S. (1986). *Who will teach? Historical perspectives on the changing appeal of teaching as a profession*. Publication Sales, The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138.
- This study analyses the desirability of teaching from a historical perspective. The study focuses on both reward structures and social origins of teachers in the United States. Through a historical lens, this study identifies how public education has become dominated by female teachers and male administrators. It Identifies how in the mid- nineteenth century, large numbers of female teachers were recruited due to the ability for communities and administrators to pay them less than male teachers. This has led to other social perceptions whereas education does not compare to other professional fields in regards to payment and reward. Although dated, the study provides quality trend data from the early 1900's- 1980's and should be referenced greatly during the introduction.
 - Thesis Use: High
9. Bureau of Labor Statistics, U.S. Department of Labor, *The Economics Daily*, Women in the labor force, 1970–2009 on the Internet at http://www.bls.gov/opub/ted/2011/ted_20110105.htm (visited September 9, 2016)
- U.S Bureau of Labor statistics survey of women in the work place. Survey is dated for serious use in thesis, but highlights the fact that

women's labor force participation peaked in 1999 @ 60%. This seems to have some correlation with gender and teachers. Intended for use in introduction.

- Thesis use: Mod- Low

10. Bureau of Labor Statistics, U.S. Department of Labor, *The Economics Daily*, Educational attainment of women in the labor force, 1970–2010 on the Internet at http://www.bls.gov/opub/ted/2011/ted_20111229.htm(visited September 9, 2016)

- This publication highlights the advancement of educational attainment for women from 1970- 2010. The rate of women with a college degree in the workforce has risen from 11% in 1970- 36% in 2010. Although dated, this information helps solidify the trend in other studies that do not include data through this date. Can be referenced in introduction.
- Thesis use: Mod – Low

Title II Numbers:

11. U.S Department of Education, Office of Postsecondary Education, Preparing and Credentialing the Nation's Teachers: The Secretary's Eighth report on Teacher Quality; Based on Data Provided for 2008, 2009 and 2010, Washington, D.C., 2011.

- This is the first year that gender statistics of pre-service teachers have been documented via Title II.
- Results:
 - i. Female: 532,867= 74%
 - ii. Male: 181,662= 25%

12. U.S Department of Education, Office of Postsecondary Education, Preparing and Credentialing the Nation's Teachers: The Secretary's Ninth Report on Teacher Quality, Washington, D.C., 2013.

- This is the second report including gender of pre-service teachers published through Title II.
- The results are as follows:
 - i. Female: 541,459 = 74.3%
 - ii. Male: 179,637 = 24.7%

13. U.S. Department of Education, Office of Postsecondary Education, Preparing and Credentialing the Nation's Teachers: The Secretary's 10th Report on Teacher Quality, Washington, D.C., 2016.

- This is the most recent publication of Title II numbers from the department of education.
- The results are as follows:
 - i. Female: 374,239 = 76%

ii. Male: 119,712 = 24%

CTE:

14. Asunda, P. (2012). Career and technical education teacher preparation trends: A pilot study. *Online Journal for Workforce Education and Development*, 5(3), 3.
 - This study focused on identifying a five year trend in CTE teacher preparation. In regards to gender, this study proclaims that many of the gender stereotypes still exists, males enter male dominated and females enter female dominated fields, except for in agricultural and business education. It expands in the conclusions to discuss how recruitment efforts should be altered to recruit both minorities and females/ males to the opposite fields.
 - Thesis use: Moderate (Introduction)

15. Daggett, W. R. (2003) The future of career and technical education. Retrieved September 24, 2016, from <http://www.daggett.com/pdf/CTE%20white%20paper.pdf>
 - This is an opinion article focusing on the impacts of the No Child Left Behind Act and the implications it will have on CTE.
 - Thesis use: Low

16. Gordon, H. R. (2014). *The history and growth of career and technical education in America*. Waveland press.
 - This book will serve as a great resource for this thesis. Chapter 6 greatly outlines the gender roles that have played out through the years in regards to career and technical education. It identifies how the Smith Hughes Act of 1917 allotted funds for gender specific roles- Males = ag. Ed & females= Home economics. It states that this trend held true until the discrimination act of 1963 in which no one could be discriminated against due to race or gender. However, strides towards equity were not met until the passing of title 4 in 1972 which stated that any federally funded educational program could not discriminate against female students. However, it further explains that even 30 years after its passing, trends are still very sex role modeled. Lastly, it explains how the passing of the Perkins act in 1984 allocated money for gender equity in CTE, but there still seems to be a gender divide.
 - Thesis Use: VERY HIGH!

17. Toglia, T. V. (2013). Gender equity issues in CTE and STEM education. *Tech Directions*, 72(7), 14.
 - This article is extremely informative towards both the introduction and body of the Thesis. The article identifies that females are still largely not represented in career and technical education. It also Identifies both title 4 and Perkins as sources of legislative push towards gender equality, although

many results have not been seen since their passings. This article should be accessed to its fullest to pull as much information as possible from it.

- Thesis Use: High
18. Wilkin, T., & Nwoke, G. (2011). Career and technical education teacher shortage: A successful model for recruitment and retention.
- This article provided more or less a case study type view towards a successful CTE recruitment strategy in New York. One high light from the article is that it briefly explains that the program focuses on minority groups, including females, to enter the CTE through non traditional certification venues. However, the study does not provide quality statistics on the rate or trends of gender in CTE.
 - Thesis Use: Mod- Low (Introduction)

Agricultural Education:

19. FFA History. (2015). Retrieved September 05, 2016, from <https://www.ffa.org/about/what-is-ffa/ffa-history>
- a. FFA history timeline. Dates to remember.
 - b. 1930- Females denied access @ national delegate meeting
 - c. 1969- Female granted full access to FFA
 - i. Many states had allowed access before this
 - Use in Thesis: HIGH
20. Hoover, T. S., & Scanlon, D. C. (1991). Enrollment issues in agricultural education programs and FFA membership. *Journal of Agricultural Education*, 32(4), 2-10.
- d. This article identifies enrollment perspectives of students in secondary schools. The study identifies reasons why student either decide to or not to enroll in agricultural education courses.
 - e. The study cites the following reasons to enroll:
 - f. Parents, guidance counselors and peers approved/ recommended.
 - g. Students saw value in course for future use
 - h. Saw potential for growth for both male and female students
 - i. The study cites following reasons not to enroll:
 - j. Ag. Ed = White male farm kids
 - k. Not use towards graduation requirements
 - l. Little/ no benefit for post-secondary academic achievement
 - m. Negative/ no perspective
 - n. Recommendations from study:
 - o. Recruitment efforts need to be towards a wider audience
 - i. Females and minorities
 - p. Change perceptions of Ag. Ed.
 - q. “more than cosmetic change”- need to change the “whole package”

- r. Overall: Good study to show spur in interest towards diverse recruitment. Study is conducted in late 80's- early 90's. Would start trend in less male secondary students which in theory would lead to less male Ag. Teachers. Potential bias, written by female author, need for diverse/ push towards acceptance of female.
 - s. Use in research: HIGH
21. Camp, W. G. (1995). A National Study of the Supply and Demand for Teachers of Agricultural Education in 1994.
- t. Teacher supply and demand info. First year for gender data. No gender data available for newly qualified teachers. However, there is data for ethnicity of newly qualified teachers.
 - u. Thesis Use: HIGH
22. Camp, W. G. (2000). A National Study of the Supply and Demand for Teachers of Agricultural Education in 1996-1998.
- v. More statistical data from late 90's on teacher demographics. Both male newly qualified and practicing out rank females.
 - w. Thesis use: HIGH
23. Camp, W. G., Broyles, T., & Skelton, N. S. (2002). A national study of the supply and demand for teachers of agricultural education in 1999-2001. Blacksburg, VA: Virginia Polytechnic Institute and State University.
- Thesis = High
24. Kantrovich, A. J. (2007). A national study of the supply and demand for teachers of agricultural education from 2004-2006. *American Association for Agricultural Education*. Retrieved September, 5, 2016.
- x. This study outlines the figures of agricultural teacher supply and demand for the years of 2004-2006. The study is very useful by providing numbers. It outlines that the ratio of male to female newly qualified ag. Ed teachers is at nearly 50%, but doesn't indicate a difference at the actual practicing rate. There is still a much higher ratio of male to female teachers practicing, 3:1.
 - y. The study makes recommendations for ag education to increase the number of ag teachers to fill the deficit. Also, it recommends the teacher educators due more to recruit diverse students to become teachers. It also recommends studies to find why teachers are not entering the profession.

- z. Uses for thesis include stats comparison of early 2000's. Indicators for push in diversity. Should be referenced, but newer numbers should be utilized if available.
 - aa. Use in Study: HIGH
25. Kantrovich, A. J. (2010). The 36th volume of a national study of the supply and demand for teachers of agricultural education 2006-2009. West Olive, MI: Michigan State University. American Association for Agricultural Education.
- bb. Study shows statistical data of agricultural education. Continuation of 2004-2006 study by same author.
 - cc. Thesis Use: HIGH
26. KNIGHT, J. A. (1987). Current status of women teachers of vocational agriculture in Ohio and their perceptions of their place in the profession. *DOCUMENT RESUME CE 049 209 Mannebach, Alfred J., Comp. Attaining Excellence in the 80's. Research in Agricultural Education. Proceedings of the Annual*, 80.
- dd. Look into female perspectives in the field of agricultural education during late 80's. Explains stereotypes/ bias towards female teachers. Identifies Titles/ legislation important to indicatives to increased female recruitment into ag. Ed.
 - ee. Thesis Use: HIGH
 - ff.
27. Foster, B. (2001, December). Women in agricultural education: Who are you. In *Proceedings of The 28 th Annual National Agricultural Education Research Conference*.
- gg. Article explaining "glass Ceiling" in late 90's- early 2000's.
 - hh. Thesis Use: HIGH
28. Foster, D. D., Lawver, R. G., & Smith, A. R. (2014) National Agricultural Education Supply & Demand Study. *Health*, 9, 1-1.
- ii. Statistical data for Ag Ed. Shows teacher numbers as well as graduates. Continues a trend of fewer male Ag Ed students.
 - jj. Thesis Use: HIGH
29. Foster, D. D., Lawver, R. G., & Smith, A. R. (2015). National Agricultural Education Supply and Demand Study, 2014 Executive Summary. Retrieved from The American Association for Agricultural Education Website:
http://aaaeonline.org/Resources/Documents/NSD_Summary_1_22_2015_Final.pdf
- kk. Statistical Ag. Ed data for 2014. Very important. Shows start of trend towards heavy graduation rates of female Ag Ed students.

ll. Thesis Use: HIGH

30. Smith, A. R., Lawver, R. G., & Foster, D. D. (2017). National Agricultural Education Supply and Demand Study, 2016 Executive Summary. Retrieved from: <http://aaaeonline.org/Resources/Documents/NS D2016Summary.pdf>

- Most updated Ag. Ed. Teacher supply and demand data

Thesis Use : High

31. The National Strategic Plan and Action Agenda for Agricultural Education. *Reinventing Agricultural Education for the Year 2020. (2000)* The National Council for Agricultural Education. Retrieved from https://www.ffa.org/SiteCollectionDocuments/alum_plan2020.pdf#search=mm.number%20of%20agricultural%20education%20programs

- Briefing provides insight to indicatives proposed in the early 2000's for changes in ag. Education from the national ffa. Highlights = goals/ action plans to be measured by 2005. Correlations due not seem as if goals were met between this action plan and data retrieved from 2004-2006 document.

nn. Key players Identified: The National Council & The Kellogg Foundation

oo. Use: Moderate- High

32. L.M (2006). More Women Teaching Ag Classes. Retrieved September 05, 2016, from http://www.cleburnetimmesreview.com/news/local_news/more-women-teacing-ag-classes/article_44b18618-fdf5-5375-8ffd-448d82e13639.html
pp. News paper article "Ag is Girly". Transition/ shift in perceptions.
qq. Thesis Importance: HIGH

33. T. (2013). 2013 Fact Sheet [Pamphlet]. Indianapolis, IN: The National FFA.
rr. Useful fact sheet for recent comparisons. Pictures can be taken from this document to show the change in "appearances" of the FFA. Document shows traditional type FFA Students. Mostly white males.

34. T. (2016). 2015-2016 Fact Sheet [Pamphlet]. Indianapolis, IN: The National FFA.
ss. Useful fact sheet. Shows closing of gender gap. Still more males than females. Changes in demographics, more diversity/ gender identification. Use pictures. More diversity. One white student, only two male students, and non-white teacher. (Shows changing face of FFA).

35. Members- Awards. (n.d). Retrieved September 05, 2016 from <http://www.naae.org/resources/awards/2002awards/ot.cfm>

- tt. Bio for first female ag teacher in Oklahoma. Need to find more stories if possible. Good picture for use as well as dates to help set timeline.
- uu. Thesis Use: HIGH

36. John Martino, W. (2008). Male teachers as role models: Addressing issues of masculinity, pedagogy and the re-masculinization of schooling. *Curriculum inquiry*, 38(2), 189-223.

37. Marsh, H. W., Martin, A. J., & Cheng, J. H. (2008). A multilevel perspective on gender in classroom motivation and climate: Potential benefits of male teachers for boys?. *Journal of educational Psychology*, 100(1), 78.

RESEARCH DESIGN

38. Borg, W. R., & Gall, M. D. (1983). Educational research: An introduction (4th ed.). White Plains, NY: Longman.

- Educational Research Design

****Thesis Use****: Very High. Outlines methods for educational historical research.

39. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

- For use in methods section. Mainly validity of data collected and information on triangulation.

THEORY

Gender Gap: Term to describe the “gap” between males and female pre-service agricultural teachers.

40. Cullen, D. L., & Luna, G. (1993). Women mentoring in academe: Addressing the gender gap in higher education. *Gender and Education*, 5(2), 125-137.

- Female mentoring in higher education
- Calls to restructure / redesign mentoring format to better accommodate females
- “reversal of good old boy system”

****Thesis Use****: 1) Theory- Redesigning of mentor structure - Culture in academia 2) calls for the redesigning of higher education structure

41. Buchmann, C., DiPrete, T. A., & McDaniel, A. (2008). Gender inequalities in education. *Annu. Rev. Sociol*, 34, 319-337.

- States gender disadvantages for women have reversed
- Explains changes in primary and secondary landscape
- Discussed the effect the military has on educational recruitment

Thesis Use: 1) Realignment/ changes in educational landscape 2) using for military comparison in findings

42. Legewie, J., & DiPrete, T. A. (2012). School context and the gender gap in educational achievement. *American Sociological Review*, 77(3), 463-485.

- How to define the gender gap in education
- Proposes that the environment of schools leads to the gender gap

Thesis Use: 1) Defines gender gap 2) role of classroom environment in gender gap

- Use as lead in/ additional support to TGRA – Cultural and structural effect

43. Goldin, C., Katz, L. F., & Kuziemko, I. (2006). The homecoming of American college women: The reversal of the college gender gap. *The Journal of Economic Perspectives*, 20(4), 133-133.

- Helps to further explain the gender gap in the U.S
- Uses lens of Human Capital to explain the structural differences in educational attainment

Thesis Use:

- Shows an early closing in higher education gender gap
- Ties in to the “now closing” gender gap in Ag. Ed.

44. Esteve, A., García-Román, J., & Permanyer, I. (2012). The Gender Gap Reversal in Education and Its Effect on Union Formation: The End of Hypergamy?. *Population and Development Review*, 38(3), 535-546.

- Discussion of closing gender gap
- Females are out performing males
- Discusses this effect on marriages

Thesis Use: Structural and cultural changes within education

Gender Realignment Theory: Change in sex roles in postindustrial societies. (Change in overall education attainment- Change in face of agricultural education).

45. DiPrete, T. A., & Buchmann, C. (2006). Gender-specific trends in the value of education and the emerging gender gap in college completion. *Demography*, 43(1), 1-24.

- Gender gap within higher education in U.S
- Explains incentives and Returns on Investment for Higher education
- Reasons stated for higher levels of female educational attainment
 1. Returns in labor market (Although not wages)
 2. Higher probability of Marriage
 3. Higher standard of living
 4. Insurance against poverty
 - Above rates rose faster/ are more valuable for females than males
- States many factors effect educational attainment- typically molded while young

- Incentive hypothesis could have a big impact
39. Miyake, A., Kost-Smith, L. E., Finkelstein, N. D., Pollock, S. J., Cohen, G. L., & Ito, T. A. (2010). Reducing the gender achievement gap in college science: A classroom study of values affirmation. *Science*, 330(6008), 1234-1237.
- Use of Value affirmation to close gender gap between males and females in STEM college course
 - Study showed value affirmation did help close gender gap on sociological front
 - TIE IN: stereotype that men aren't as good at teaching agriculture or in general.
 - Could similar practices been used in recruiting female agricultural educators and created a stereotype leading to gender gap?
40. Inglehart, R., & Norris, P. (2000). The developmental theory of the gender gap: Women's and men's voting behavior in global perspective. *International Political Science Review*, 21(4), 441-463.
- Development Theory of Gender Realignment
 - Changes in sex roles in postindustrial societies
 - Theory = 3 differences
 - i. Level of political and economic development
 - ii. Generational cohorts
 - iii. Structural and cultural factors
41. Inglehart R. (1997). *Modernization and Post-Modernization: Cultural, Economic and Political Changes in 43 Societies*. Princeton, NJ: Princeton University Press.
- Cited in Theoretical framework
42. Norris, P. (1999). A gender-generation gap?. *Critical Elections: British Parties and Voters in Long-Term Perspective*, 743-58.
- **Thesis Use**:
- Model for explain the gender gap
 - i. G.G is a catchall phrase, but in this study it means...
43. Campbell, D. E. (2002). The young and the realigning: A test of the socialization theory of realignment. *Public Opinion Quarterly*, 66(2), 209-234.
- **Thesis Use**: Another study to supplement gender realigning\
- Religious context
44. Kaufmann, K. M. (2002). Culture wars, secular realignment, and the gender gap in party identification. *Political Behavior*, 24(3), 283-307.
- **Thesis Use**: Another political study to support gender realignment
- Male and female perspectives on politics have changed over time

45. Abramowitz, A. I., & Saunders, K. L. (1998). Ideological realignment in the US electorate. *The Journal of Politics*, 60(3), 634-652.

Thesis Use: Introduces realignment theory.

- Serves as a precursor to TGRA
- Realignment of political view among white males and females

Reasons for Not Using Expectancy – Value Theory

46. Roberts, T. G., Greiman, B. C., Murphy, T. H., Ricketts, J. C., Harlin, J. F., & Briers, G. E. (2009). Changes in Student Teachers' Intention to Teach during Student Teaching. *Journal of Agricultural Education*, 50(4), 134-145.

-Thesis Use: Reason for not using EVT in this thesis.

- TGRA = “Story of what is happening with in ag. ed”
- EVT= “Why” (Motivation)
- EVT = Future research after factors have been identified through this

thesis

Research Questions:

1. Changes in Agricultural Education between 2009-2014

a. AG. Ed Curriculum

47. French, D., & Balschweid, M. (2009). Scientific Inquiry in Agricultural Education Teacher Preparation: A Look at Teacher Educators' Perceptions. *Journal of Agricultural Education*, 50(4), 25-35.

- i. 2009
- ii. Recommends change in who is teaching “teaching methods courses”
 1. Need to be competent and up to date in both conventional ag and science based.
- iii. States that 95% of teacher educators felt comfortable teaching conventional methods, but only 65% felt competent with science instruction

** Thesis Use**: shows structural change in teacher educators with a focus for more science based instruction vs. conventional.

48. Theriot, P. J., & Kotrlik, J. W. (2009). Effect of Enrollment in Agriscience on Students' Performance in Science on the High School Graduation Test. *Journal of Agricultural Education*, 50(4), 72-85.

- i. 2009

- ii. States students perform equally on standardized test when enrolled in agriscience
- iii. Recommends
 - 1. Expanding agriscience in programs – more classes offered/ teachers to teach them
 - 2. Change and update curriculum to stay “relevant” and meet accountability
 - 3. Educate counselors to recruit college bound students

****Thesis Use****: Call for curriculum change from conventional to science based. Recruitment for college bound students.

49. Myers, B. E., Thoron, A. C., & Thompson, G. W. (2009). Perceptions of the National Agriscience Teacher Ambassador Academy toward Integrating Science into School-Based Agricultural Education Curriculum. *Journal of Agricultural Education*, 50(4), 120-133.

- i. 2009
- ii. Call for more science based ag curriculum
- iii. Call for changes to pre-service teacher curriculum for more science based courses
- iv. $\frac{3}{4}$ of NATAA were female
- v. Connection to No- Child Left Behind

****Thesis Use****: Call for structural change towards science for both secondary and pre-service ag-education. High rate of female teachers teaching/ participating in professional development for science curriculum.

50. Washburn, S. G., & Myers, B. E. (2010). Agriculture teacher perceptions of preparation to integrate science and their current use of inquiry based learning. *Journal of Agricultural Education*, 51(1), 88.

- i. 2010
- ii. Call for more science based pre-service prep
- iii. Students enjoy the science integration
- iv. External pressure to integrate
 - 1. Legislation
 - 2. Administration
 - 3. Etc.
- v. Cross- Reference for legislation

****Thesis Use****: Call for structural change of ag. ed. curriculum for both secondary and pre-service. Explains legislative pull at time. Discusses need for Ag Ed to change and keep up with newer science based curriculum.

51. Thoron, A. C., & Myers, B. E. (2010). Perceptions of pre-service teachers toward integrating science into school-based agricultural education curriculum. *Journal of Agricultural Education*, 51(2), 70.

- i. 2010
- ii. Pre-service teachers believe integrating science is good

- iii. 2/3 of participants were female
- iv. Calls for change in teacher prep for science based teaching methods
- v. Pre-service teachers suggest that science integration will help recruit higher achieving students

Thesis Use: Matches 2009 study of in-service teachers. Calls for change in teacher prep program and highlights that there may be a different group of secondary students recruited into the program (thus maybe leading to changes in Ag Ed pre-service teachers).

52. Stair, K. S. (2010). *Identifying confidence levels and instructional strategies of high school agriculture education teachers when working with students with special needs*. ProQuest.

- i. 2010
- ii. Call for change in teacher prep programs to teach pre-service teachers strategies of teaching students with special needs.

Thesis Use: Low- However, it does call for a change in the teacher prep program.

53. Pense, S. L., Watson, D. G., & Wakefield, D. B. (2010). Learning disabled student needs met through curriculum redesign of the Illinois agricultural education core curriculum. *Journal of Agricultural Education*, 51(2).

- i. 2010
- ii. Redesign of Illinois core ag curriculum lead to higher scores for both students with and without learning disabilities.
- iii. Calls for change in total state secondary curriculum
- iv. Calles for change in the teacher prep program at university/ pre-service levels
- v. Calls for PD for in-service teachers

Thesis Use: Calls for change in secondary curriculum. Calls for change in Pre-service teacher curriculum

54. Park, T. D., van der Mandele, E. S., & Welch, D. (2010). Creating a culture that fosters disciplinary literacy in agricultural sciences. *Journal of Agricultural Education*, 51(3), 100.

- i. 2010
- ii. Discussion of teaching literacy in Ag. Education
- iii. No Calls other that for future research

Thesis Use: Highlights discussion and start of change towards literacy focused secondary curriculum. Tied to accountability.

55. Saucier, P. R., & McKim, B. R. (2011). Assessing the Learning Needs of Student Teachers in Texas regarding Management of the Agricultural Mechanics Laboratory: Implications for the Professional Development of Early Career Teachers in Agricultural Education. *Journal of Agricultural Education*, 52(4), 24-43.

- i. 2011
- ii. Hits back to traditional curriculum training in ag ed (Ag mechanics)
- iii. Calls for more pre-service training in ag mechanics
- iv. 55% female pre-service teachers
- v. If pre-service cannot change, teacher educators should direct students in self- directed learning
- vi. Calls for future research on relation of mechanics training to proportion of pre-service students entering the teaching field

Thesis Use: “tapping of breaks” to revisit conventional training. Seems to be to prepare female students, even though they have participated in undergraduate mechanics prep. Not change in curriculum rather than change in gender roles and who is teaching ag mech. Interesting call for future research of who is actually going in to the teaching field based on training in ag mech.

56. Curry Jr, K. W., Wilson, E., Flowers, J. L., & Farin, C. E. (2012). Scientific Basis vs. Contextualized Teaching and Learning: The Effect on the Achievement of Postsecondary Students. *Journal of Agricultural Education*, 53(1), 57-66.

- i. 2012
- ii. Discussion of use of contextualized Teaching in other disciplines than agricultural education.
- iii. Results = comparable between contextualized and traditional teaching methods. Needs more data.

Thesis Use: Relatively low. Discusses relevance of ag ed approach vs. more traditional teaching methods. Adds to curriculum discussion.

57. Haynes, J. C., Robinson, J. S., Edwards, M. C., & Key, J. P. (2012). Assessing the Effect of Using a Science-Enhanced Curriculum to Improve Agriculture Students' Science Scores: A Causal Comparative Study. *Journal of Agricultural Education*, 53(2), 15-27.

- i. 2012
- ii. Use of integrated science based curriculum
- iii. No significant difference in scores
- iv. Limitations suggest that integration could still improves scores
- v. 55% of students in ag science classes were female
- vi. Calls for more PD and training for science based instruction

Thesis Use: Discussed more calls for use of science based curriculum in secondary education. Also telling of secondary student populations enrolled in the more advanced level courses. Majority female- goes with trend of the times.

58. Nolin, J. B., & Parr, B. (2013). Utilization of a high stakes high school graduation exam to assess the impact of agricultural education: A measure of curriculum integration. *Journal of Agricultural Education*, 54(3), 41-53.

- i. 2013

- ii. CURRICULUM and LEGISLATION
- iii. Accountability
- iv. Curriculum
 - 1. No significant results
 - 2. More sciences based/ rigorous standards to be taught to meet standardized testing scores

****Thesis Use**:** More use for legislation discussion. However, still highlights discussion for improvement/ integration of science based principles

59. Pearson, D., Young, R. B., & Richardson, G. B. (2013). Exploring the technical expression of academic knowledge: The science-in-CTE pilot study. *What a Degree in Agricultural Leadership Really Means: Exploring Student Conceptualizations*, 54(4).

- i. 2013
- ii. Integration of Science based curriculum increased scores

****Thesis Use**:** More discussion of science based curriculum and the benefits in test score- tied to possible accountability

60. King, D. L., Rucker, K. J., & Duncan, D. W. (2013). Classroom instruction and FFA/SAE responsibilities creating the most stress for female teachers in the Southeast. *Journal of Agricultural Education*, 54(4), 195-205.

- i. 2013
- ii. Profile of female teachers in GA
- iii. Identifies stressors
- iv. Calls for changes in PD/ Pre-service training to meet needs of females (diverse) teachers
 - a. No more single uniform approach to training

****Thesis Use**:** Calls for structural change of pre-service and PD to meet different needs of diverse teachers

61. Lambert, M. D., Velez, J. J., & Elliott, K. M. (2014). What are the teachers' experiences when implementing the Curriculum for Agricultural Science Education?. *Journal of Agricultural Education*, 55(4), 100-115.

- i. 2014
- ii. Use of CASE curriculum- science based
- iii. Recommends implementing in to undergraduate pre-service programs

****Thesis Use**:** recommendations for change coming to fruition with a grounded model of how to incorporate case curriculum in pre-service training. (Maybe a stretch).

62. Haynes, J. C., Gill, B. E., Chumbley, S. B., & Slater, T. F. (2014). A cross-case comparison of the academic integration human capital pre-service agricultural

educators retain prior to their teaching internship. *Journal of Agricultural Education*, 55(5), 191-206.

- i. 2014
- ii. Pre-service Teachers agree science should be incorporated into agricultural curriculum – not independently taught
- iii. Calls for more pre-service sciences based training and resources – (CASE/ “academically enhanced Textbooks)

****Thesis Use****: Shows progression in understand/ change of curriculum and in now provided examples of how to better train pre-service teachers. Questions if this is because of population change?

**** NOTES ON JAE ARTICLES RELATING TO CURRICULUM****

- 2009 = We should change pre-service to include more science based training
- 2014 = Now pre-service teachers agree and there are concrete examples to change teacher education (CASE, etc.)
- Overall – Demonstrates a change in structure of the pre-service and in-service curriculums – Follows structural change of Gender Realignment)

b. Changes in Curriculum – (AEM)

63. Pentony, D. J. (2009). At long last national content standards for agricultural education. *The Agricultural Education Magazine*, 81(4), 8.

- i. Explains the creation of AFNR Standards
- ii. Suggests that states should use national standards to best fit their needs
- iii. Briefly discusses legislation changes
- iv. Curriculum change at secondary level

****Thesis Use****: Highlights the begging conversation of standards in secondary ag ed. things have changed from the old ag. 1,2,3,4 to nationally standardized.

64. Molina, Q. (2009). Program & Curriculum Standards: Mapping the Future of Agricultural Education. *The Agricultural Education Magazine*, 81(4), 11.

- i. Change in curriculum has occurred
- ii. Discussed “realigning” of curriculum
- iii. Career clusters lead to content standards

****Thesis Use****: More conversation of the “new standards”

65. Hall, D. (2009). National Ag Ed Content Standards. *The Agricultural Education Magazine*, 81(4), 12.

- i. Highlights the creation of content standards

65. Gratz, S., (2009). Content Standards. *The Agricultural Education Magazine*, 81 (4), 15.

- i. First Mention of Assessment
- ii. “Have Standards, now we need assessment”
- iii. Changing of curriculum

****Thesis Use:**** Discussion of new standards and now how to assess them. Highlights the change of curriculum and now assessment techniques.

66. Chason, B., & Hutchinson, K. (2009). The Value of Quality Program Standards for Agriscience Education. *The Agricultural Education Magazine*, 81(4), 19.

- i. Defense for science based curriculum

****Thesis Use**:** Solidifies new curriculum

67. Stump, S. (2009). Content Standards-Positioning Agricultural Education as a Key Component of Education Reform. *The Agricultural Education Magazine*, 81(4), 21.

- i. Outlines need for standards to keep ag ed viable in future
- ii. Outlines the history of standards in ag ed.

****Thesis Use**:** Continues conversation. Standards aren't that new of a concept to ag. ed. Standards are needed with the new education reforms.

68. Womochil, M. (2009). STANDARDS-Program, Content or Both: How Will This Affect Agricultural Education Practice?. *The Agricultural Education Magazine*, 81(4), 26.

- i. First time for “national Ag standards”
- ii. Now we need an assessment tool

****Thesis Use**:** More calls for assessment to help with reform.

69. Shoulders, C. W., & Myers, B. E. (2010). Globally-based SAEs-Encouraging students to experience international agriculture. *The Agricultural*, 83(1), 5.

- i. Use of international based SAE's
- ii. Changing of curriculum
- iii. Loose ties to change

****Thesis Use**:** Low

70. Warner, W., & Jones, J. (2011). The wonder of words: Using technology to support vocabulary instruction. *The Agricultural Education Magazine*, 83(6), 7-9.

- i. Strategies for implementing technology
- ii. Teaching techniques to help reach standards

****Thesis Use**:** Start of practitioner discussion for teaching the standards.

71. Filson, C. H., & Susie, M. (2011). Looking Through a Peephole or an Open Door?: Insights into Inclusion. *The Agricultural*, 83(6), 10.
- i. Calls for changes in pre-service curriculum to better address the need of students with learning disabilities.

****Thesis Use****: Seeing the effects of standards on post- secondary curriculum.

72. Silva, D. (2011). Do You Google?... It's More Than Just a Search Engine. *The Agricultural Education Magazine*, 83(6), 12.
- i. New technology and how to implement in the classroom.

****Thesis Use****: More teaching techniques

73. Clark, M., Ewing, J. C., & Foster, D. D. (2011). Inquiry Based Instruction in Agricultural Education Programs: How it Can be Done!. *The Agricultural Education Magazine*, 83(6), 14.
- i. Calls for how and why to implement science based instruction
 - ii. Catching up with JAE in terms of suggested new curriculum changes and how to implement

****Thesis Use****: finally starting to see solid techniques for the new standards based curriculums.

74. De Lay, A. M. (2011). A Future-Proofing Plan for Agricultural Education. *The Agricultural Education Magazine*, 83(6), 17.
- i. More technology practices in the classroom
 - ii.

75. Dormody, T., Skelton, P., Pint, A., & O'Byrne, K. (2011). A Course to Develop Agriscience Teachers. *The Agricultural Education Magazine*, 83(6), 25.
- i. Call for advancing teacher professional development around science curriculum

****Thesis Use****: More Curriculum advancement discussion on how to teach standards

76. Crutchfield, N., & Lyder, L. (2012). Agriscience Practically Teaches Itself. *The Agricultural Education Magazine*, 84(4), 5.
- i. New teaching practices
 - ii. Changes in structure of curriculum at secondary level

****Thesis Use****: More on curriculum change discussion among practitioners- more teaching practices.

77. Lawrence, S. G., & Rayfield, J. (2012). School Gardens: Ripe with STEM and Experiential Learning; Fertile Soil for Agricultural Program Growth. *The Agricultural Education Magazine*, 84(4), 7.
- i. Teaching practices – STEM
 - ii. How to teach new curriculum

78. Everett, M. W., & Matt, R. (2012). Incorporating Conservation Education in Agricultural Education. *The Agricultural Education Magazine*, 84(4), 9.
- i. Methods for teaching new standards
 - ii. Change in structure

****Thesis Use****: More discussion of how to teach to new standards

79. Snyder, L. U., Cathey, S., & Quesenberry, K. (2012). Creating a Fun Game (Feast or Famine) to Help Students Learn about the Importance of Seed Identification Related to World Food Crops. *The Agricultural Education Magazine*, 84(4), 15.
- i. More teaching methods
 - ii. New Standards

****Thesis Use****: More standards discussion

80. Gruis, D., (2012). Brain-based Learning: BQLTN vs. CASE. *The Agricultural Education Magazine*, 84(4), 25
- i. New curriculum
 - ii. Teaching methods to meet new content needs

Thesis Use*: Same

82. Thoron, A., (2014). Accountability in Education: It's Not Going Away, and Achool-Based Agricultral Education has aRole, Meet it head- on! *The Agricultural Education Magazine*, 87 (1), 4.

- i. Introduction to assessment
- ii. New standards aren't going anywhere, now we need to assess correctly

****Thesis Use****: New standards aren't going anywhere, now we need to assess correctly

82. Sanok, D. E., & Stripling, C. T. (2014). Incorporating Mathematical Formative Assessments in the Agricultural Classroom. *The Agricultural Education Magazine*, 87(1), 5.

- i. How to use assessment
- ii. More assessment discussion

****Thesis Use****: More assessment discussion

83. Clark, S., Ferguson, A., & Delay, A. M., (2014). Accountability: A Tale of Two Teachers. *The Agricultural Education Magazine*, 87(1), 8.

- i. Definitions of accountability

****Thesis Use****: More Assessment discussion

84. Anderson, R. (2014). Extreme Agricultural Mechanics Makeover: A Model for Revitalizing a Laboratory. *The Agricultural Education Magazine*, 87(3), 5.

- i. Revamping traditional content labs to teach new standards and assessments

****Thesis Use****: Now figured out how to handle standards and stay to traditional ag as well via the use of labs

85. Fowler, D., Fowler, C., Tometich, D., Paul, S., Wiebe, A., & Crews, A. (2014). Not Your Ordinary Laboratory. *The Agricultural Education Magazine*, 87(3), 7.
 - i. Same as above
86. Eddy, M. B. (2014). CASE Curriculum Changes Classroom Culture. *The Agricultural Education Magazine*, 87(3), 9.
 - i. Science with traditional curriculum
87. Wells, T. (2014). Skill Development and Retention through Multiple Laboratory Environments. *The Agricultural Education Magazine*, 87(3), 11.
 - i. Use of labs for new standards with higher skill sets
88. Emig, R. (2014). Land Labs as a Financial and Educational Resource. *The Agricultural Education Magazine*, 87(3), 13.
 - i. Resurgence of traditional production based to meet the needs of new science curriculum
89. Collins, M. (2014). Livestock Teaching Farms: Students Combine Mind with Muscle. *The Agricultural Education Magazine*, 87(3), 16.
 - i. Tradition to meet new science

AEM Notes on Curriculum Change

2009 = “We now have new national standards”

Mid-way = techniques to teach the new standards- Science based shift

2014 = Standards are staying, now we need to focus on assessing & use of traditional production agriculture to meet new science based standards

b. Changes in Legislation pertaining to Ag. Ed from 2009- 2014.

90. U.S Department of Education,. *No Child Left Behind Act Of 2001*. Washington, D.C: Senate and House of Representatives in the United States, 2004. Online. <https://www2.ed.gov/policy/elsec/leg/esea02/beginning.html#sec2>
 - i. Outlines No Child Left Behind
91. U.S Department of Education,. (2015). *Elementary and Secondary Education Act*. Washington, D.C: Senate and House of Representatives of the United States, 2015. Online. <https://www2.ed.gov/documents/essa-act-of-1965.pdf>
 - i. Outlines ESEA Act

92. The U.S Department of Education,. *Higher Education Opportunity Act of 2009*. Washington, D.C: Senate and House of Representatives of the United States of America, 2009. Online. <https://www.gpo.gov/fdsys/pkg/PLAW-110publ315/pdf/PLAW-110publ315.pdf>
 - i. Outlines HEOA
93. U.S Department of Education,. *American Reinvestment and Recovery Act Of 2009*. Washington, D.C: Senate and House of Representatives of the United States of America, 2009. Online. <https://www.gpo.gov/fdsys/pkg/BILLS-111hr1enr/pdf/BILLS-111hr1enr.pdf>
 - i. Outline ARRA
94. U.S Department of Education,. (2015). *Every Student Succeeds Act of 2015*. Washington, D.C: Senate and House of Representatives of the United States of America. Online. <https://www.ed.gov/essa?src=policy>
 - i. Outlines ESSA
95. Perkins Act. (2017). *Advance CTE*. Retrieved 23 March 2017, from <https://careertech.org/Perkins>
 - i. Outlines Perkins Act of 2006
96. U.S Department of Education,. (2014). *Work Force Innovation and Opportunity Act*. Washington, D.C: Senate and House of Representatives of the United States of America. Online. http://edworkforce.house.gov/uploadedfiles/wioa_sa_hr803.pdf
 - i. Outlines WFIOA
97. *State Policies Impacting CTE Year in Review*. (2017). *Advance CTE*. Retrieved 23 March 2017, from <https://careertech.org/state-policies-impacting-cte-year-review>
 - i. Summary page for state legislation regarding CTE
98. The National Council of the FFA,. (2015). *Agriculture, Food and Natural Resource Content Standards*. Indianapolis, IN: The National FFA Organization. Retrieved from https://www.ffa.org/SiteCollectionDocuments/council_afnr_career_cluster_content_standards.pdf
 - i. The Council publication for AFNR Standards

Overall Education

2001 = NCLB

2008 = Higher Education Act –extended through 2015

2009 = American Reinvestment and Recovery Act of 2009 & Common Core State Standards Initiative

2011 = Obama and U. S ed. allowing flexibility waivers for states against NCLB

2014= Obama and bipartisan bill (restores educational funding)

CTE (Ag. Ed.)

2006 = Perkins, start of accountability

2013= Revamp of Perkins = 4 parts —alignment, collaboration, accountability, and innovation (Rigor and Relevance)- State funding etc.

2014 = Workforce Innovation and Opportunity Act (WIOA) signed- education portion not in effect until 2015

** “Between 2013 and 2016, all 50 states and DC have passed at least one policy, board action, executive order or budget appropriations impacting CTE, for a total of over 500 policies passed in that four-year span.” - <https://www.careertech.org/state-policies-impacting-cte-year-review>

CCTC = Common Career and Technical Core- Developed in 2011. Adopted by 42 states in 2012. Sets common standards out of career clusters for CTE.

2009 = AFNR National Standards originally created by The Council

c. Changes in Ag. Ed Recruitment – (JAE)

99. Roberts, T. G., Harlin, J. F., & Briers, G. E. (2009). Predicting Agricultural Education Student Teachers' Intention to Enter Teaching. *Journal of Agricultural Education*, 50(3), 56-68.

- i. 2009
- ii. How much effect student teaching has on desire to teach? = No effect
- iii. Desire to teach was established before student teaching
- iv. University structure (curriculum) played a role in a student’s desire to teach
- v. Future research should “look” for when decision to teach is firm.

** Thesis Use**: Researchers are again acknowledging that this is a deficit of ag. ed. Teachers and are looking to determine when students actually decide to teach. It is assumed that after this is established, changes could be made to help recruit more students and help them decided to teach agriculture.

100. Roberts, T. G., Greiman, B. C., Murphy, T. H., Ricketts, J. C., Harlin, J. F., & Briers, G. E. (2009). Changes in Student Teachers' Intention to Teach during Student Teaching. *Journal of Agricultural Education*, 50(4), 134-145.

- i. 2009
- ii. Student teaching has no effect on intention to teach
- iii. Article provides reasons not to use EVT- (See Ch. 2)
- iv. Highlights article to use in ch.2
- v. Recommends the “catch early” approach
 - i. “drop those not interested”

Thesis Use: Identifies that there is an issue, now we need to figure out why students are changing/ not showing intentions to teach- Precursor to recruitment.

101. Arnold, S., & Place, N. (2010). Career influences of agricultural extension agents. *Journal of Agricultural Education*, 51(1), 11.
- i. 2010
 - ii. Extension needs for recruitment
 - iii. Extrinsic motivators are needed
 - i. Career ladder, salary, advancement, etc.
 - iv. Need to recruit self-directed individuals that can complete the job requirements

Thesis Use: Stretch with extension. However, it does highlight the conversation that there is a need to both recruit more and better quality candidates

102. Warnick, B. K., Thompson, G. W., & Tarpley, R. S. (2010). Characteristics of beginning agriculture teachers and their commitment to teaching. *Journal of Agricultural Education*, 51(2), 59.
- i. 2010
 - ii. Many teachers are deciding to leave
 - iii. Brief call for extended contracts
 - i. Extrinsic Motivators
 - iv. Sums up 2010
 - i. “We don’t know what is motivating people to teach ag.”

Thesis Use: Researchers are still looking for how to better recruit and retain ag teachers, but they still haven’t found out why!

103. Foor, R. M., & Connors, J. (2010). Pioneers in an Emerging Field: Who Were the Early Agricultural Educators?. *American Association for Agricultural Education*, 111.
- i. 2010
 - ii. Article outlines the historical founders of ag. education prior to the smith-hughes act.
 - iii. “looking back to look ahead”
 - i. Original ag. educators and teacher educators did not have formal ag. backgrounds
 - iv. Calls for recruiting “non-traditional” ag teachers
 - i. Just like those of the beginning

Thesis Use: The recruitment conversation among teacher educators and recruiters is that we may need to look beyond what is “normal” to find high quality ag. teachers for the future. The trend has been “there is a problem” now its “lets look outside of the box to recruit”

104. Simonsen, J. C., & Birkenholz, R. J. (2010). Leadership courses required in agricultural teacher education programs. *Journal of agricultural education*.
- i. 2010
 - ii. Ag. Ed Pre-service should be taught content for leadership

- iii. Wide array of “leadership” being taught in secondary ag. ed. Classrooms.
 - i. Where we get games from
- iv. Calls for a realignment of leadership curriculum to be taught in pre-service
- v. Does cross with “changes in Curriculum”

****Thesis Use****: Could this increase in leadership be more addressed to girls?

105. Altman, I. (2010). The Effectiveness of Women’s Agricultural Education Programs: A Survey from Annie’s Project. *The Effectiveness of Women’s Agricultural Education Programs: A Survey from Annie’s Project*, 51(4), 1-9.
- i. Calls for more outreach to female and minority groups in agriculture
 - ii. Side effect= Recruitment efforts and discussion changed to females and minorities

****Thesis Use****: Conversation focus away from males

106. Lawver, R. G., & Torres, R. M. (2011). Determinants of Pre-Service Students' Choice to Teach Secondary Agricultural Education. *Journal of Agricultural Education*, 52(1), 61-71.
- i. Still Looking for why students are choosing to teach
 - ii. Background in ag. ed. doesn’t matter
 - iii. “belief”- Teacher educators should promote more “good feeling” moments
 - iv. Recruitment Recommendations
 - i. Target the diverse needs of individuals

****Thesis Use****: Still trying to increase total enrollments and now needing to target the diverse needs or individuals rather than the group.

107. Vincent, S. K., Henry, A. L., & Anderson, J. C. (2012). College major choice for students of color: Toward a model of recruitment for the agricultural education profession. *Journal of Agricultural Education*, 53(4), 187-200.
- i. Determine why students of color choose agricultural education degrees
 - ii. Identifies these reasons as listed through article
 - iii. Provides model
 - iv. Calls for recruitment of diverse students
 - v. Promotion of ag. ed. to a wider array of students

****Thesis Use****: Solid model is created identifying recruitment needs of students of color. The discussions again progressing from “problem” towards “solution”.

108. Baker, L. M., Settle, Q., Chiarelli, C., & Irani, T. (2013). Recruiting strategically: Increasing enrollment in academic programs of agriculture. *Journal of Agricultural Education*, 54(3), 54-66.
- i. Methods of recruitment materials that are most effective for high qualified students of agriculture in college
 - ii. Whole college of ag, not just education
 - iii. Recommends strategic recruitment materials that show job availability and positive benefits from the career

****Thesis Use****: Furthering the discussion from “problem to solution”. Now in addition to the previous model, there is more information of recruitment techniques.

109. Estep, C. M., & Roberts, T. G. (2013). Exploring the relationship between professor/student rapport and students’ expectancy for success and values/goals in college of agriculture classrooms. *Journal of Agricultural Education*, 54(4), 180-194.
- i. Effects of professor rapport on student motivation and success
 - ii. AG. Ed Teacher educators should focus more on rapport within classes

****Thesis Use****: Stretch. Continue of “problem to Solution”. More specific details on how to better retain and recruit students of agriculture.

110. Tippens, A., Ricketts, J. C., Morgan, A. C., Navarro, M., & Flanders, F. B. (2013). Factors related to teachers’ intention to leave the classroom early. *Journal of Agricultural Education*, 54(4), 58-72.
- i. Looks at teacher attrition in GA ag ed.
 - ii. Need to focus on intention factors and perceptions as to why teachers are leaving profession

****Thesis Use****: Low- Retention and recruiting- still want to show the positive aspects of the career.

111. Calvin, J., & Pense, S. L. (2013). Barriers and Solutions to Recruitment Strategies of Students into Post-Secondary Agricultural Education Programs: A Focus Group Approach. *Journal of Agricultural Education*, 54(4).
- i. Identifies recruiting barriers to ag ed pre-service from interviews with practicing teachers in IL.
 - ii. Identifies following Issues: Time, Economy, Family, Technology, Image and perceived local issues.
 - iii. Calls for techniques for teacher educators to be more involved personally in recruiting efforts and getting to know the students

****Thesis Use****: High- Continues the solution conversation with more specific tangible results for recruiting across the spectrum and not just one demographic. More personal contact and interaction with potential students.

112. Wardlow, G. W. (2014). Walking With Giants. *Examining Camper Learning Outcomes and Knowledge Retention at Oklahoma FFA Leadership Camp*, 55(1), 1-7.

i. Discussion of the future of Ag. Ed higher ed.

****Thesis Use****: Shows the conversation is still prevalent in 2014

113. Irlbeck, E., Adams, S., Akers, C., Burris, S., & Jones, S. (2014). First generation college students: Motivations and support systems. *Journal of Agricultural Education*, 55(2), 154-166.

i. Needs of first generation ag. college students

ii. Importance of extra-curricular activities and campus involvement

iii. Agriscience teachers are very important to the students success

iv. University staff should capitalize on this and send packages to students via ag. Teacher.

****Thesis Use****: More solution talk. Again, very personalized interaction and education of experience and “what to expect on campus”.

JAE 2009-2014 Notes

1. 2009= “We have a recruitment issue- but, we don’t know how to fix it”
2. 2011= “Still have an issue, we now know we need to address the diverse needs of individuals, recruit modern students and promote good feelings
3. 2014= Specifics are emerging for the solution. Broadly categorized as more personal attention needs to be given to recruiting. One on one presence and help with the future students.

AEM Recruitment Changes

114. Washburn, S., & Warner, W. (2009). What Can YOU Do to Bring the Best and Brightest to Our Profession?. *The Agricultural Education Magazine*, 82(1), 4.

i. There is a teacher shortage

ii. It’ll take all efforts

iii. Recruiting new teachers that do not look like the old ones

****Thesis Use****: Start of the conversation on recruiting. Practicing teachers are just as involved as teacher educators and need to recruit modern students

115. Disberger, B. (2009). The Face (Book) s of the Next Generation of Agricultural Educators. *The Agricultural Education Magazine*, 82(1), 5.

i. Look for recruits

ii. Quality candidates aren’t always the ones that are good at CDE and SAE’s

iii. Future “looks” different

iv. Promotes ways for practicing teachers to stay in contact with recruited students

****Thesis Use****: continuing the conversation for teachers to recruit as well. Second mention that future “looks” different- Change in who is recruited

116. De Lay, A. M. (2009). Behold! The power of teacher collaboration. *The Agricultural Education Magazine*, 82(1), 7.

- i. Call for teacher collaboration for better recruitment

****Thesis Use****: Aligns with the need for support in JAE

117. Jimenez, M. (2009). 26 Hours of Recruitment for the Agricultural Industry. *The Agricultural Education Magazine*, 82(1), 11.

- i. Ag teachers are the most influential to ag. ed recruitment
- ii. Teachers should recruit teachers

118. Vincent, S. K., & Board, K. (2009). Slap-Chop, Sham Wow, & Oxy-Clean: Does Agricultural Education Need an Infomercial?. *The Agricultural Education Magazine*, 82(1), 17.

- i. Identifies a model to tackle recruitment barriers
- ii. Changes with the new face of ag ed
- iii. Sales people are needed to promote the career

****Thesis Use****: Model has been created to identify and begin solving the problem. Again, new face of ag.

119. Buckley, M. (2009). Want to Be an Ag Teacher???. *The Agricultural Education Magazine*, 82(1), 22.

- i. Role a teacher plays in recruiting other ag teachers
- ii. Students are watching you as the teacher- “love your job”

****Thesis Use****: more of teacher’s role in recruiting

120. McDonald, A. K. (2009). Branding for Agricultural Education. *The Agricultural Education Magazine*, 82(2), 6.

- i. How to create a brand for chapter
- ii. How branding helps with recruitment

****Thesis Use****: Conversation to “who are we”

121. Elliott, K. (2009). Is Your Agricultural Program Branded for Success?. *The Agricultural Education Magazine*, 82(2), 10.

- i. How to create a brand for your program

122. White, D. (2009). Name Brand Education. *The Agricultural Education Magazine*, 82(2), 12.

- i. How to build brand in class

123. DuBois, A. (2009). Brand Loyalty: What Happends When Experiences Allow Perceptions to Change?. *The Agricultural Education Magazine*, 82(2), 14.
- i. Effects of branding for ag ed
124. Vlasin, R. (2009). What" Branding" Do Students in Your Agricultural Education Experience?. *The Agricultural Education Magazine*, 82(2), 20.
- i. Effects of branding in classroom
125. Mack, J. (2009). The Long-Term Benefits of Promotional Branding: NOT Just a Flash in the Pan!. *The Agricultural Education Magazine*, 82(2), 22.
- i. The long-term effects of branding
 - ii. Program continues
126. Lawyer, B., & Smith, A. (2011). Gotta Get'Em There First. Then, Let's Worry about Keeping'Em!. *The Agricultural Education Magazine*, 84(1), 5.
- i. Need to just get teachers to the classroom first and support them
 - ii. Then try to keep them to stay
127. Lawrence, S., & Rayfield, J. (2011). Maintaining an Adequate Supply of Agricultural Teachers, What Is Your Role?. *The Agricultural Education Magazine*, 84(1), 8.
- i. Teachers should present the profession in a positive light
128. Lawver, B. (2011). Half the Battle. *The Agricultural Education Magazine*, 84(1), 13.
- i. Who are we recruiting and how do we keep them?
129. Bellah, K. A. (2011). Look Where You're Going, Not Where You've Been. *The Agricultural Education Magazine*, 84(1), 20.
- i. Call for changes in post-secondary teacher education programs to better prepare students to be teachers
130. Killingsworth, J. L., Bird, W. A., & Martin, M. J. (2011). Sifting for Teachers-New Practices for an Old Problem. *The Agricultural Education Magazine*, 84(1), 22.
- i. Need to love our jobs
 - ii. New incentives for recruiting quality teachers

Notes on AEM changes in recruitment

2009 = We need to recruit more. New teachers will be different than the old. Models and techniques presented.

2011= More conversation of the practicing teachers role

2014= Not mention as much for teacher recruitment

Question 2: Changes outside of Agricultural Education 2009-2014

A: Major U.S and World Events

131. Erkens, D. H., Hung, M., & Matos, P. (2012). Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, 18(2), 389-411.
 - i. Describes Housing bubble pop and market crash of 2008
132. Jacobson, G. C. (2010). George W. Bush, the Iraq War, and the Election of Barack Obama. *Presidential Studies Quarterly*, 40(2), 207-224.
 - i. Bush war and Obama
133. Bligh, M. C., & Kohles, J. C. (2009). The enduring allure of charisma: How Barack Obama won the historic 2008 presidential election. *The Leadership Quarterly*, 20(3), 483-492.
 - i. Obama's election
134. Congressional Budget Office,. (2011). Appropriations of Fiscal Year 2012. Washington, D.C.: Congress. gov.
<https://www.congress.gov/resources/display/content/Appropriations+for+Fiscal+Year+2012#AppropriationsforFiscalYear2012-budgetresolutions>
 - i. 2011 budget cuts
135. Compton, M. (2011). President Obama Has Ended the War in Iraq. The White House President Barack Obama. Retrieved from
<https://obamawhitehouse.archives.gov/blog/2011/10/21/president-obama-has-ended-war-iraq>
 - i. White house press release on remove of troops from Iraq
136. Federal Election Commission,. (2013). *FEDERAL ELECTIONS 2012 Election Results for the U.S. President, the U.S. Senate and the U.S. House of Representatives*. Washington, D.C: Federal Election Committee. Online.
<http://www.fec.gov/pubrec/fe2012/federaelections2012.pdf>
 - i. 2012 election results including house and senate
137. U.S Department of Health and Human Services,. (2010). Patient Protection and Affordable Care Act. Washington, D.C.: Senate and House of Representatives of the United States of America. Online.
<https://www.gpo.gov/fdsys/pkg/BILLS-111hr3590enr/pdf/BILLS-111hr3590enr.pdf>
 - i. Details Affordable Care Act

138. Baude, W. (2013). Interstate Recognition of Same-Sex Marriage After Windsor.
 - i. Analysis of same-sex marriage ruling by the supreme court
139. Yoshimo, K. (2015). A New Birth of Freedom?: Obergefell v. Hodges. *Harv. L. Rev.*, 129, 147.
 - i. Further analysis on same-sex marriage in 2015
140. Milne, S. (2015). Now the truth emerges: how the US fuelled the rise of Isis in Syria and Iraq. *The Guardian*, 3.
 - i. Evidence of military involvement in Middle East

B: Educational Attainment

141. U.S. Department of Commerce. (2008). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
142. U.S. Department of Commerce. (2009). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
143. U.S. Department of Commerce. (2010). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
144. U.S. Department of Commerce. (2011). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
145. U.S. Department of Commerce. (2012). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
146. U.S. Department of Commerce. (2013). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
147. U.S. Department of Commerce. (2014). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
148. U.S. Department of Commerce. (2015). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
149. U.S. Department of Commerce. (2016). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.

150. U.S. Department of Education. (2008). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
151. U.S. Department of Education. (2009). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
152. U.S. Department of Education. (2010). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
153. U.S. Department of Education. (2008). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
154. U.S. Department of Education. (2011). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
155. U.S. Department of Education. (2012). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
156. U.S. Department of Education. (2013). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
157. U.S. Department of Education. (2014). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.

158. U.S. Department of Education. (2015). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
159. U.S. Department of Education. (2016). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
160. Snyder, T.D., Dillow, S.A., and Hoffman, C.M. (2009). Digest of Education Statistics 2008 (NCES 2009-020). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
i. Education Stats
161. Snyder, T.D., and Dillow, S.A. (2010). Digest of Education Statistics 2009 (NCES 2010-013). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
ii. Ed. Stats
162. Snyder, T.D., and Dillow, S.A. (2011). Digest of Education Statistics 2010 (NCES 2011-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
iii. Ed. Stats
163. Snyder, T.D., and Dillow, S.A. (2012). Digest of Education Statistics 2011 (NCES 2012-001). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
iv. Ed. Stats
164. Snyder, T.D., and Dillow, S.A. (2013). Digest of Education Statistics 2012 (NCES 2014-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
v. Ed. Stats
165. Snyder, T.D., and Dillow, S.A. (2015). Digest of Education Statistics 2013 (NCES 2015-011). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
vi. Ed. Stats
166. Snyder, T.D., de Brey, C., and Dillow, S.A. (2016). Digest of Education Statistics 2014 (NCES 2016-006). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
vii. Ed. Stats

167. Snyder, T.D., de Brey, C., and Dillow, S.A. (2016). Digest of Education Statistics 2015 (NCES 2016-014). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
viii. Ed. Stats

Labor Statistics:

168. The United States Department of Labor. (2009). *Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race*. Washington D.C: Bureau of Labor Statistics.

169. The United States Department of Labor. (2010). *Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race*. Washington D.C: Bureau of Labor Statistics.

170. The United States Department of Labor. (2011). *Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race*. Washington D.C: Bureau of Labor Statistics.

171. The United States Department of Labor. (2012). *Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race*. Washington D.C: Bureau of Labor Statistics.

172. The United States Department of Labor. (2013). *Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race*. Washington D.C: Bureau of Labor Statistics.

173. The United States Department of Labor. (2014). *Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race*. Washington D.C: Bureau of Labor Statistics.

174. U.S Department of Labor,. (2010). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online.
<https://www.bls.gov/cps/wlf-databook-2010.pdf>
i. Labor Stats

175. U.S Department of Labor,. (2011). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online.
<https://www.bls.gov/cps/wlf-databook-2011.pdf>
ii. Labor Stats

176. U.S Department of Labor,. (2012). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online.

https://www.bls.gov/opub/reports/womens-databook/archive/womenlaborforce_2012.pdf

iii. Labor Stats

177. U.S Department of Labor,. (2014). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online.

https://www.bls.gov/opub/reports/womens-databook/archive/womenlaborforce_2013.pdf

iv. Labor Stats

178. U.S Department of Labor,. (2014). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online.

<https://www.bls.gov/opub/reports/womens-databook/archive/women-in-the-labor-force-a-databook-2014.pdf>

v. Labor Stats

REFERENCES

- Abramowitz, A. I., & Saunders, K. L. (1998). Ideological realignment in the US electorate. *The Journal of Politics*, 60(3), 634-652.
- Altman, I. (2010). The Effectiveness of Women's Agricultural Education Programs: A Survey from Annie's Project. *Journal of Agricultural Education*, 51(4), 1-9.
- Anderson, R. (2014). Extreme Agricultural Mechanics Makeover: A Model for Revitalizing a Laboratory. *The Agricultural Education Magazine*, 87(3), 5.
- Arnold, S., & Place, N. (2010). Career influences of Agricultural Extension Agents. *Journal of Agricultural Education*, 51(1), 11.
- Baker, L. M., Settle, Q., Chiarelli, C., & Irani, T. (2013). Recruiting Strategically: Increasing Enrollment in Academic Programs of Agriculture. *Journal of Agricultural Education*, 54(3), 54-66.
- Baude, W. (2013). Interstate Recognition of Same-Sex Marriage After Windsor.
- Bellah, K. A. (2011). Look Where You're Going, Not Where You've Been. *The Agricultural Education Magazine*, 84(1), 20.
- Bligh, M. C., & Kohles, J. C. (2009). The enduring allure of charisma: How Barack Obama won the historic 2008 presidential election. *The Leadership Quarterly*, 20(3), 483-492.
- Borg, W. R., & Gall, M. D. (1983). *Educational Research: An Introduction* (4th ed.). White Plains, NY: Longman.
- Buchmann, C., DiPrete, T. A., & McDaniel, A. (2008). Gender Inequalities in Education. *Annual Review of Sociology*, 34, 319-337.
- Buckley, M. (2009). Want to Be an Ag Teacher???. *The Agricultural Education Magazine*, 82(1), 22.
- Calvin, J., & Pense, S. L. (2013). Barriers and Solutions to Recruitment Strategies of Students into Post-Secondary Agricultural Education Programs: A Focus Group Approach. *Journal of Agricultural Education*, 54(4).
- Camp, W. G., Broyles, T., & Skelton, N. S. (2002). *A National Study of the Supply and Demand for Teachers of Agricultural Education in 1999-2001*. Blacksburg, VA: Virginia Polytechnic Institute and State University.

- Campbell, D. E. (2002). The Young and the Realignment: A Test of the Socialization Theory of Realignment. *Public Opinion Quarterly*, 66(2), 209-234.
- Carney, C. (2016). The Status of Male Teachers in Public Education Today. Retrieved September 9, 2016, from http://www.menteach.org/mens_stories/the_status_of_male_teachers_in
- Carter, C., Rausser, G., & Smith, A. (2012). The effect of the US ethanol mandate on corn prices. *Unpublished manuscript*, 9(12), 49-55.
- Chason, B., & Hutchinson, K. (2009). The Value of Quality Program Standards for Agriscience Education. *The Agricultural Education Magazine*, 81(4), 19.
- Clark, M., Ewing, J. C., & Foster, D. D. (2011). Inquiry Based Instruction in Agricultural Education Programs: How it Can be Done!. *The Agricultural Education Magazine*, 83(6), 14.
- Clark, S., Ferguson, A., & Delay, A. M., (2014). Accountability: A Tale of Two Teachers. *The Agricultural Education Magazine*, 87(1), 8.
- Collins, M. (2014). Livestock Teaching Farms: Students Combine Mind with Muscle. *The Agricultural Education Magazine*, 87(3), 16.
- Compton, M. (2011). President Obama Has Ended the War in Iraq. *The White House President Barack Obama*. Retrieved from <https://obamawhitehouse.archives.gov/blog/2011/10/21/president-obama-has-ended-war-iraq>
- Congressional Budget Office,. (2011). Appropriations of Fiscal Year 2012. Washington, D.C.: Congress. gov. <https://www.congress.gov/resources/display/content/Appropriations+for+Fiscal+Year+2012#AppropriationsforFiscalYear2012-budgetresolutions>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Crutchfield, N., & Lyder, L. (2012). Agriscience Practically Teaches Itself. *The Agricultural Education Magazine*, 84(4), 5.
- Curry Jr, K. W., Wilson, E., Flowers, J. L., & Farin, C. E. (2012). Scientific Basis vs. Contextualized Teaching and Learning: The Effect on the Achievement of Postsecondary Students. *Journal of Agricultural Education*, 53(1), 57-66.

- Day, J. C., Hays, D., & Smith, A., (2016). A Glance at the Age Structure and Labor Force Participation of Rural America. *Census Blogs*.
https://www.census.gov/newsroom/blogs/random-samplings/2016/a_glance_at_age_structure_and_labor_force_participation_of_rural_america
- De Lay, A. M. (2009). Behold! The power of teacher collaboration. *The Agricultural Education Magazine*, 82(1), 7.
- De Lay, A. M. (2011). A Future-Proofing Plan for Agricultural Education. *The Agricultural Education Magazine*, 83(6), 17.
- Disberger, B. (2009). The Face (Book) s of the Next Generation of Agricultural Educators. *The Agricultural Education Magazine*, 82(1), 5.
- Dormody, T., Skelton, P., Pint, A., & O’Byrne, K. (2011). A Course to Develop Agriscience Teachers. *The Agricultural Education Magazine*, 83(6), 25.
- DuBois, A. (2009). Brand Loyalty: What Happends When Experiences Allow Perceptions to Change?. *The Agricultural Education Magazine*, 82(2), 14.
- Eddy, M. B. (2014). CASE Curriculum Changes Classroom Culture. *The Agricultural Education Magazine*, 87(3), 9.
- Elliott, K. (2009). Is Your Agricultural Program Branded for Success?. *The Agricultural Education Magazine*, 82(2), 10.
- Emig, R. (2014). Land Labs as a Financial and Educational Resource. *The Agricultural Education Magazine*, 87(3), 13.
- Erkens, D. H., Hung, M., & Matos, P. (2012). Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, 18(2), 389-411.
- Estep, C. M., & Roberts, T. G. (2013). Exploring the relationship between professor/student rapport and students’ expectancy for success and values/goals in college of agriculture classrooms. *Journal of Agricultural Education*, 54(4), 180-194.
- Esteve, A., García-Román, J., & Permanyer, I. (2012). The Gender-Gap Reversal in Education and Its Effect on Union Formation: The End of Hypergamy?. *Population and Development Review*, 38(3), 535-546.

- Everett, M. W., & Matt, R. (2012). Incorporating Conservation Education in Agricultural Education. *The Agricultural Education Magazine*, 84(4), 9.
- Federal Election Commission,. (2013). *FEDERAL ELECTIONS 2012 Election Results for the U.S. President, the U.S. Senate and the U.S. House of Representatives*. Washington, D.C: Federal Election Committee. Online.
<http://www.fec.gov/pubrec/fe2012/federaelections2012.pdf>
- FFA History. (2015). Retrieved September 05, 2016, from
<https://www.ffa.org/about/what-is-ffa/ffa-history>
- Filson, C. H., & Susie, M. (2011). Looking Through a Peephole or an Open Door?: Insights into Inclusion. *The Agricultural Education Magazine*, 83(6), 10.
- Foor, R. M., & Connors, J. (2010). Pioneers in an Emerging Field: Who Were the Early Agricultural Educators?. *American Association for Agricultural Education*, 111.
- Foster, D. D., Lawver, R. G., & Smith, A. R. (2014) National Agricultural Education Supply & Demand Study, 2014 Executive Summary. Retrieved from the National Association of Agricultural Educators Website:
<http://www.naae.org/teachag/NSD%20Exec%20Summary%20Final%202014.pdf>
- Foster, D. D., Lawver, R. G., & Smith, A. R. (2015). National Agricultural Education Supply and Demand Study, 2014 Executive Summary. Retrieved from The American Association for Agricultural Education Website:
http://aaaeonline.org/Resources/Documents/NSD_Summary_1_22_2015_Final.pdf
- Foster, D. D., Lawver, R. G., & Smith, A. R. (2015). National Agricultural Education Supply and Demand Study, 2014 Executive Summary. Retrieved from The American Association for Agricultural Education Website:
http://aaaeonline.org/Resources/Documents/NSD_Summary_1_22_2015_Final.pdf
- Fowler, D., Fowler, C., Tometich, D., Paul, S., Wiebe, A., & Crews, A. (2014). Not Your Ordinary Laboratory. *The Agricultural Education Magazine*, 87(3), 7.
- French, D., & Balschweid, M. (2009). Scientific Inquiry in Agricultural Education Teacher Preparation: A Look at Teacher Educators' Perceptions. *Journal of Agricultural Education*, 50(4), 25-35.
- Gordon, H. R. (2014). The history and growth of career and technical education in America. Waveland press.

- Gratz, S., (2009). Content Standards. *The Agricultural Education Magazine*, 81 (4), 15.
- Gruis, D., (2012). Brain-based Learning: BQLTN vs. CASE. *The Agricultural Education Magazine*, 84(4), 25
- Hall, D. (2009). National Ag Ed Content Standards. *The Agricultural Education Magazine*, 81(4), 12.
- Haynes, J. C., Gill, B. E., Chumbley, S. B., & Slater, T. F. (2014). A cross-case comparison of the academic integration human capital pre-service agricultural educators retain prior to their teaching internship. *Journal of Agricultural Education*, 55(5), 191-206.
- Haynes, J. C., Robinson, J. S., Edwards, M. C., & Key, J. P. (2012). Assessing the Effect of Using a Science-Enhanced Curriculum to Improve Agriculture Students' Science Scores: A Causal Comparative Study. *Journal of Agricultural Education*, 53(2), 15-27.
- Houston, W.R. (2009). Teachers in history. L.J. Saha & A.G. Dworkin (Eds.), *International Handbook of Research on Teachers and Teaching*. Springer Science+Business Media.
- Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational leadership*, 60(8), 30-33.
- Ingersoll, R., Merrill, L., & Stuckey, D. (2014). Seven trends: The transformation of the teaching force, updated April 2014. CPRE Report (#RR-80). Philadelphia: Consortium for Policy Research in Education, University of Pennsylvania.
- Inglehart R. (1997). *Modernization and Postmodernization: Cultural, Economic and Political Changes in 43 Societies*. Princeton, NJ: Princeton University Press.
- Inglehart, R., & Norris, P. (2000). The developmental theory of the gender gap: Women's and men's voting behavior in global perspective. *International Political Science Review*, 21(4), 441-463.
- Irlbeck, E., Adams, S., Akers, C., Burriss, S., & Jones, S. (2014). First generation college students: Motivations and support systems. *Journal of Agricultural Education*, 55(2), 154-166.
- Jacobson, G. C. (2010). George W. Bush, the Iraq War, and the Election of Barack Obama. *Presidential Studies Quarterly*, 40(2), 207-224.

- Jimenez, M. (2009). 26 Hours of Recruitment for the Agricultural Industry. *The Agricultural Education Magazine*, 82(1), 11.
- Kantrovich, A. J. (2007). A national study of the supply and demand for teachers of agricultural education from 2004-2006. *American Association for Agricultural Education*. Retrieved September, 5, 2016.
- Kantrovich, A. J. (2010). The 36th volume of a national study of the supply and demand for teachers of agricultural education 2006-2009. West Olive, MI: Michigan State University. American Association for Agricultural Education.
- Kaufmann, K. M. (2002). Culture wars, secular realignment, and the gender gap in party identification. *Political Behavior*, 24(3), 283-307.
- Killingsworth, J. L., Bird, W. A., & Martin, M. J. (2011). Sifting for Teachers-New Practices for an Old Problem. *The Agricultural Education Magazine*, 84(1), 22.
- King, D. L., Rucker, K. J., & Duncan, D. W. (2013). Classroom instruction and FFA/SAE responsibilities creating the most stress for female teachers in the Southeast. *Journal of Agricultural Education*, 54(4), 195-205.
- Lambert, M. D., Velez, J. J., & Elliott, K. M. (2014). What are the teachers' experiences when implementing the Curriculum for Agricultural Science Education?. *Journal of Agricultural Education*, 55(4), 100-115.
- Lawrence, S. G., & Rayfield, J. (2012). School Gardens: Ripe with STEM and Experiential Learning; Fertile Soil for Agricultural Program Growth. *The Agricultural Education Magazine*, 84(4), 7.
- Lawrence, S., & Rayfield, J. (2011). Maintaining an Adequate Supply of Agricultural Teachers, What Is Your Role?. *The Agricultural Education Magazine*, 84(1), 8.
- Lawver, B. (2011). Half the Battle. *The Agricultural Education Magazine*, 84(1), 13.
- Lawver, R. G., & Torres, R. M. (2011). Determinants of Pre-Service Students' Choice to Teach Secondary Agricultural Education. *Journal of Agricultural Education*, 52(1), 61-71.
- Lawyer, B., & Smith, A. (2011). Gotta Get'Em There First. Then, Let's Worry about Keeping'Em!. *The Agricultural Education Magazine*, 84(1), 5.
- Legewie, J., & DiPrete, T. A. (2012). School context and the gender gap in educational achievement. *American Sociological Review*, 77(3), 463-485.

- Mack, J. (2009). The Long-Term Benefits of Promotional Branding: NOT Just a Flash in the Pan!. *The Agricultural Education Magazine*, 82(2), 22.
- McDonald, A. K. (2009). Branding for Agricultural Education. *The Agricultural Education Magazine*, 82(2), 6.
- Miyake, A., Kost-Smith, L. E., Finkelstein, N. D., Pollock, S. J., Cohen, G. L., & Ito, T. A. (2010). Reducing the gender achievement gap in college science: A classroom study of values affirmation. *Science*, 330(6008), 1234-1237.
- Molina, Q. (2009). Program & Curriculum Standards: Mapping the Future of Agricultural Education. *The Agricultural Education Magazine*, 81(4), 11.
- Myers, B. E., Thoron, A. C., & Thompson, G. W. (2009). Perceptions of the National Agriscience Teacher Ambassador Academy toward Integrating Science into School-Based Agricultural Education Curriculum. *Journal of Agricultural Education*, 50(4), 120-133.
- Nolin, J. B., & Parr, B. (2013). Utilization of a high stakes high school graduation exam to assess the impact of agricultural education: A measure of curriculum integration. *Journal of Agricultural Education*, 54(3), 41-53.
- Norris, P. (1999). A gender-generation gap?. *Critical Elections: British Parties and Voters in Long-Term Perspective*, 743-58.
- O'Hare, W. P., & Bishop, B. (2006). US rural soldiers account for a disproportionately high share of casualties in Iraq and Afghanistan. *Carsey Institution*. Fact Sheet No. 3
- Park, T. D., van der Mandele, E. S., & Welch, D. (2010). Creating a culture that fosters disciplinary literacy in agricultural sciences. *Journal of Agricultural Education*, 51(3), 100.
- Pearson, D., Young, R. B., & Richardson, G. B. (2013). Exploring the technical expression of academic knowledge: The science-in-CTE pilot study. What a Degree in Agricultural Leadership Really Means: Exploring Student Conceptualizations, 54(4).
- Pense, S. L., Watson, D. G., & Wakefield, D. B. (2010). Learning disabled student needs met through curriculum redesign of the Illinois agricultural education core curriculum. *Journal of Agricultural Education*, 51(2).
- Pentony, D. J. (2009). At long last national content standards for agricultural education. *The Agricultural Education Magazine*, 81(4), 8.

- Perkins Act. (2017). Advance CTE. Retrieved 23 March 2017, from https://careertech.org/Perkinspublic_education_today
- Roberts, T. G., Greiman, B. C., Murphy, T. H., Ricketts, J. C., Harlin, J. F., & Briers, G. E. (2009). Changes in Student Teachers' Intention to Teach during Student Teaching. *Journal of Agricultural Education, 50*(4), 134-145.
- Roberts, T. G., Harlin, J. F., & Briers, G. E. (2009). Predicting Agricultural Education Student Teachers' Intention to Enter Teaching. *Journal of Agricultural Education, 50*(3), 56-68.
- Sanok, D. E., & Stripling, C. T. (2014). Incorporating Mathematical Formative Assessments in the Agricultural Classroom. *The Agricultural Education Magazine, 87*(1), 5.
- Saucier, P. R., & McKim, B. R. (2011). Assessing the Learning Needs of Student Teachers in Texas regarding Management of the Agricultural Mechanics Laboratory: Implications for the Professional Development of Early Career Teachers in Agricultural Education. *Journal of Agricultural Education, 52*(4), 24-43.
- Sedlak, M., & Schlossman, S. (1986). Who will teach? Historical perspectives on the changing appeal of teaching as a profession. Publication Sales, The Rand Corporation, 1700 Main Street, PO Box 2138, Santa Monica, CA 90406-2138.
- Shoulders, C. W., & Myers, B. E. (2010). Globally-based SAEs-Encouraging students to experience international agriculture. *The Agricultural, 83*(1), 5.
- Silva, D. (2011). Do You Google?... It's More Than Just a Search Engine. *The Agricultural Education Magazine, 83*(6), 12.
- Simonsen, J. C., & Birkenholz, R. J. (2010). Leadership courses required in agricultural teacher education programs. *Journal of agricultural education.*
- Smith, A. R., Lawver, R. G., & Foster, D. D. (2017). National Agricultural Education Supply and Demand Study, 2016 Executive Summary. Retrieved from:<http://aaaeonline.org/Resources/Documents/NS D2016Summary.pdf>
- Snyder, L. U., Cathey, S., & Quesenberry, K. (2012). Creating a Fun Game (Feast or Famine) to Help Students Learn about the Importance of Seed Identification Related to World Food Crops. *The Agricultural Education Magazine, 84*(4), 15.

- Snyder, T.D., and Dillow, S.A. (2010). Digest of Education Statistics 2009 (NCES 2010-013). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., and Dillow, S.A. (2011). Digest of Education Statistics 2010 (NCES 2011-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., and Dillow, S.A. (2012). Digest of Education Statistics 2011 (NCES 2012-001). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., and Dillow, S.A. (2013). Digest of Education Statistics 2012 (NCES 2014-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., and Dillow, S.A. (2015). Digest of Education Statistics 2013 (NCES 2015-011). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., de Brey, C., and Dillow, S.A. (2016). Digest of Education Statistics 2014 (NCES 2016-006). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., de Brey, C., and Dillow, S.A. (2016). Digest of Education Statistics 2015 (NCES 2016-014). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Snyder, T.D., Dillow, S.A., and Hoffman, C.M. (2009). Digest of Education Statistics 2008 (NCES 2009-020). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Stair, K. S. (2010). Identifying confidence levels and instructional strategies of high school agriculture education teachers when working with students with special needs. ProQuest.
- State Policies Impacting CTE Year in Review.* (2017). Advance CTE. Retrieved 23 March 2017, from <https://careertech.org/state-policies-impacting-cte-year-review>
- Stump, S. (2009). Content Standards-Positioning Agricultural Education as a Key Component of Education Reform. *The Agricultural Education Magazine*, 81(4), 21.

- The National Council of the FFA,. (2015). Agriculture, Food and Natural Resource Content Standards. Indianapolis, IN: The National FFA Organization. Retrieved from https://www.ffa.org/SiteCollectionDocuments/council_afnr_career_cluster_content_standards.pdf
- The U.S Department of Education,. (2009). Higher Education Opportunity Act Of 2009. Washington, D.C: Senate and House of Representatives of the United States of America. Online. <https://www.gpo.gov/fdsys/pkg/PLAW-110publ315/pdf/PLAW-110publ315.pdf>
- The United States Department of Labor. (2009). Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race. Washington D.C: Bureau of Labor Statistics.
- The United States Department of Labor. (2010). Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race. Washington D.C: Bureau of Labor Statistics.
- The United States Department of Labor. (2011). Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race. Washington D.C: Bureau of Labor Statistics.
- The United States Department of Labor. (2012). Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race. Washington D.C: Bureau of Labor Statistics.
- The United States Department of Labor. (2013). Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race. Washington D.C: Bureau of Labor Statistics.
- The United States Department of Labor. (2014). Current Population Survey: Employment status of the civilian noninstitutional population by sex, age, and race. Washington D.C: Bureau of Labor Statistics.
- Theriot, P. J., & Kotrlik, J. W. (2009). Effect of Enrollment in Agriscience on Students' Performance in Science on the High School Graduation Test. *Journal of Agricultural Education*, 50(4), 72-85.
- Thoron, A. C., & Myers, B. E. (2010). Perceptions of pre-service teachers toward integrating science into school-based agricultural education curriculum. *Journal of Agricultural Education*, 51(2), 70.

- Thoron, A., (2014). Accountability in Education: It's Not Going Away, and Achool-Based Agricultral Education has aRole, Meet it head- on! *The Agricultural Education Magazine*, 87 (1), 4.
- Tippens, A., Ricketts, J. C., Morgan, A. C., Navarro, M., & Flanders, F. B. (2013). Factors related to teachers' intention to leave the classroom early. *Journal of Agricultural Education*, 54(4), 58-72.
- Toglia, T. V. (2013). Gender equity issues in CTE and STEM education. *Tech Directions*, 72(7), 14.
- U.S. Department of Agriculture. (2017). *Prices Received: Cattle Prices by Month*. Washington, D.C.: National Agricultural Statistics Service.
- U.S. Department of Agriculture. (2017). *Prices Received: Corn Prices by Month*. Washington, D.C.: National Agricultural Statistics Service.
- U.S. Department of Agriculture. (2017). *Prices Received: Soybean Prices by Month*. Washington, D.C.: National Agricultural Statistics Service.
- U.S Department of Education,. (2004). No Child Left Behind Act Of 2001. Washington, D.C: Senate and House of Representatives in the United States. Online. <https://www2.ed.gov/policy/elsec/leg/esea02/beginning.html#sec2>
- U.S Department of Education,. (2009). American Reinvestment and Recovery Act Of 2009. Washington, D.C: Senate and House of Representatives of the United States of America. Online. <https://www.gpo.gov/fdsys/pkg/BILLS-111hr1enr/pdf/BILLS-111hr1enr.pdf>
- U.S Department of Education,. (2014). *Work Force Innovation and Opportunity Act*. Washington, D.C: Senate and House of Representatives of the United States of America. Online. http://edworkforce.house.gov/uploadedfiles/wioa_sa_hr803.pdf
- U.S Department of Education,. (2015). Every Child Succeeds Act Of 2015. Washington, D.C: Senate and House of Representatives of the United States. Online. <https://www2.ed.gov/documents/essa-act-of-1965.pdf>
- U.S Department of Education,. (2015). Every Student Succeeds Act of 2015. Washington, D.C: Senate and House of Representatives of the United States of America. Online. <https://www.ed.gov/essa?src=policy>

- U.S Department of Health and Human Services,. (2010). Patient Protection and Affordable Care Act. Washington, D.C.: Senate and House of Representatives of the United States of America. Online. <https://www.gpo.gov/fdsys/pkg/BILLS-111hr3590enr/pdf/BILLS-111hr3590enr.pdf>
- U.S Department of Labor,. (2010). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online. <https://www.bls.gov/cps/wlf-databook-2010.pdf>
- U.S Department of Labor,. (2011). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online. <https://www.bls.gov/cps/wlf-databook-2011.pdf>
- U.S Department of Labor,. (2012). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online. https://www.bls.gov/opub/reports/womens-databook/archive/womenlaborforce_2012.pdf
- U.S Department of Labor,. (2014). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online. https://www.bls.gov/opub/reports/womens-databook/archive/womenlaborforce_2013.pdf
- U.S Department of Labor,. (2014). *Women in the Labor Force: A Databook*. Washington, D.C.: U.S. Bureau of Labor Statistics. Online. <https://www.bls.gov/opub/reports/womens-databook/archive/women-in-the-labor-force-a-databook-2014.pdf>
- U.S. Department of Commerce. (2008). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2009). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2010). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2011). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2012). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.

- U.S. Department of Commerce. (2013). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2014). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2015). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Commerce. (2016). *Educational Attainment in the United States*. Washington D.C.: Census Bureau-Education and Social Stratification Branch.
- U.S. Department of Education. (2008). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2009). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2010). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2011). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2012). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2013). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2014). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- U.S. Department of Education. (2015). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.

- U.S. Department of Education. (2016). *Postsecondary Institutional Studies Program*. Washington, D.C.: National Center for Education Statistics-Postsecondary Studies Division.
- Vincent, S. K., & Board, K. (2009). Slap-Chop, Sham Wow, & Oxy-Clean: Does Agricultural Education Need an Infomercial?. *The Agricultural Education Magazine*, 82(1), 17.
- Vincent, S. K., Henry, A. L., & Anderson, J. C. (2012). College major choice for students of color: Toward a model of recruitment for the agricultural education profession. *Journal of Agricultural Education*, 53(4), 187-200.
- Vlasin, R. (2009). What" Branding" Do Students in Your Agricultural Education Experience?. *The Agricultural Education Magazine*, 82(2), 20.
- Wang, Q., & Findeis, J. L. (2004, May). Do Women Earn Less In Rural Areas? An Empirical Analysis Of The Female Rural-Urban Wage Differential. In *2004 Annual meeting, August 1-4, Denver, CO* (No. 19982). American Agricultural Economics Association (New Name 2008: Agricultural and Applied Economics Association).
- Wardlow, G. W. (2014). Walking With Giants. *Examining Camper Learning Outcomes and Knowledge Retention at Oklahoma FFA Leadership Camp*, 55(1), 1-7.
- Warner, W., & Jones, J. (2011). The wonder of words: Using technology to support vocabulary instruction. *The Agricultural Education Magazine*, 83(6), 7-9.
- Warnick, B. K., Thompson, G. W., & Tarpley, R. S. (2010). Characteristics of beginning agriculture teachers and their commitment to teaching. *Journal of Agricultural Education*, 51(2), 59.
- Washburn, S. G., & Myers, B. E. (2010). Agriculture teacher perceptions of preparation to integrate science and their current use of inquiry based learning. *Journal of Agricultural Education*, 51(1), 88.
- Washburn, S., & Warner, W. (2009). What Can YOU Do to Bring the Best and Brightest to Our Profession?. *The Agricultural Education Magazine*, 82(1), 4.
- Wells, T. (2014). Skill Development and Retention through Multiple Laboratory Environments. *The Agricultural Education Magazine*, 87(3), 11.

White, D. (2009). Name Brand Education. *The Agricultural Education Magazine*, 82(2), 12.

Womochil, M. (2009). STANDARDS-Program, Content or Both: How Will This Affect Agricultural Education Practice?. *The Agricultural Education Magazine*, 81(4), 26.

Yoshimo, K. (2015). A New Birth of Freedom?: Obergefell v. Hodges. *Harv. L. Rev.*, 129, 147.

VITA

1. Place of Birth: Lexington, KY
2. Educational Institutions:
 - University of Kentucky, 2015
 - B.S. Career and Technical Education
 - University of Kentucky, (Expected) 2017
 - M.S. Community and Leadership Development
3. Alexander Kenneth Tingle