

Examining Global Competency and Content Knowledge of  
Secondary Agricultural Educators and Students Before and After the Implementation of  
a Globally Centered Curriculum Thesis

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### Authorization to Submit Thesis

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## Abstract

Preparing students for a globally connected world starts with giving the right tools and training to pre-service and in-service teachers and providing them with relevant competencies that are needed to create a globally connected curriculum. The globalization of agriculture means there is an emerging need for agricultural education in the United States and an increase in a globalized approach to prepare students for future agricultural careers. Teacher education programs have lagged in higher education in terms of internationalization, which could lead to teachers who feel unready to incorporate international issues.

To address this problem, the study will allow for an investigation of the global competencies for Pacific Northwest (PNW) agricultural educators and examine needs they have to be successful when integrating this global curriculum into their classrooms. The findings revealed that there were differences in the scores between the different sites and the different demographic factors between the secondary agricultural education students. An examination of the pre/posttest with Global Citizenship Scale and the Global Content Knowledge Assessment showed higher change in scores between the different grade levels and age groups between the students. The findings for the secondary agricultural educators were limited, however shed a light on how different educators scored on their pretest before delivering the instruction to their students.

From these findings, this study points to the need of the integration of global agriculture concepts in the classroom through a Global Citizenship model. There needs to be a creation of a scope and sequence model for PNW secondary agricultural educators to follow with the creation of new and relevant lesson plans and activities to incorporate into different programs. This research found that there was a significance to the implementation of this

curriculum to the different sites that were selected which showed growth between the students before and after the implementation of the Global Agriculture Citizenship unit.

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## **Dedication**

This thesis is dedicated to the teachers willing to look beyond their communities and explore different international perspectives and agricultural systems to bring into their classrooms for their students. You are proof and demonstrate that you do not need to leave the country to bring international ideas to your students to see beyond what they know. Thank you to the teachers and students that took the risk to explore a new curriculum and program with me this year. Your thoughts and ideas will be used for years to come to educate more students around the Pacific Northwest.

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## **Chapter I**

### **Introduction**

Today's graduates must be more globally informed, aware, and engaged than ever before due to international markets merging and becoming interdependent, and our world becoming exponentially more global and connected (Plater, 2011). American students are far too often unaware of globalization and current events around the globe (Bringle & Hatcher, 2011). Competent and qualified teachers are important for student success and educational reform (National Commission on Teaching and America's Future, 1996; Stroup, 2002). School-based agricultural educators are placed in a position to be influential to future generations of agriculturalists (Park & Rudd, 2005). The integration of international perspectives in the secondary agricultural education program can increase students' understanding and cultural awareness and help them comprehend the magnitude of these global agricultural problems (Shoulders & Myers, 2010). To remain competitive in a global marketplace, agricultural education students, who are the future agricultural workforce, must understand international systems (Schuh, 1989). International systems for students include knowledge of politics, institutions, and economies, particularly agriculture economies, and cultures other than their own (Schuh, 1989).

For more than two decades teacher educators have expressed a need for teaching professional agricultural subjects from an international perspective (Acker, 1999). Acker specifically addressed the need for educators to see an issue from multiple perspectives and to build international issues into curriculum materials. Many agricultural problems have a global nature (National Research Council, 2009). Globalization of agriculture continues to increase (National Research Council, 2009), and many employers are seeking employees with global

perspectives (Acker, 1999). Increasing globalization requires more interaction among people from varied backgrounds (Cano & Martin, 2009). Internationalizing the curriculum is most effectively done when global awareness and developing international understanding and perspectives are built into teacher programs for preservice, in-service, and professional development programs that are attended by agricultural educators (Koziol, Greenberg, et al., 2011). Internationalization of the curriculum can lead to cultural enrichment, greater knowledge of global systems, and desire to participate in sustainable food systems around the world (Magtoto, 2017). True internationalization is not as easy as creating a new class or inserting reading or assignments into existing courses (Green & Olson, 2008). True internationalization requires new pedagogies which could include experiential, service, and collaborative learning (Green & Olson, 2008). An enhanced international perspective, or global mindedness, can have a direct effect on a teacher's classroom communication skills and student learning (Walton, 2002). One way to incorporate an international perspective and measures into the classroom is through the Global Citizenship Scale created by Morais and Ogden (2010). Morais and Ogden (2010) developed a scale to measure and define students' levels of global citizenship as a measure of three components: global competency, social responsibility, and global civic engagement. Students will be measured on different skills included, but not limited to, their ability to engage and effectively acknowledge their own limitations with world and current events, demonstrate intercultural skills, and study social issues in regard to inequality around the world (Morais & Ogden, 2010).

There are numerous examples of professions that have transcended borders and embrace an international identity, including communication, travel, trade operations, sports competitions and more (Yuksel & Eres, 2018). An international mindset can lead people from

different countries coming together to exchange ideas, services, and projects (Yuksel & Eres, 2018). A consequence of globalization in the reflection of scientific innovations, in political, economic, and cultural aspects, has a profound effect on agricultural educators' lessons and relations to global agriculture (Yuksel & Eres, 2018).

People who work internationally have an opportunity to benefit from the experiences of different cultures (Yuksel, 2018). It is no longer possible to define citizenship within the borders of a country (Starkey, 2005). As a result, people from different countries come together to exchange ideas, services and products and can benefit from the experiences of different cultures (Yuksel & Eres, 2018). These experiences are indications of a transition from a national level of relationships and thought models into a thought and relationship model belonging to a dimension beyond nations (Yuksel & Eres, 2018). With globalization, distance and time constraints have disappeared worldwide and as a result, people have increased their social and cultural interactions by coming together more in a world that is getting smaller (Yuksel & Eres, 2018).

For students to be able to develop all three components of global citizenship, they must be able to learn the prevalent culture in the society in which they live, as well as the cultures that are of a minority quality in comparison to it (Gay, 2002). Students must achieve the knowledge, skills, and approaches to effectively communicate with these cultures (Gay, 2002). It is only possible with the existence of an educational system composed with such a perspective to be successful in acquiring these skills (Gay, 2002). Teachers play an important role in instilling tolerance, equality, and respect for cultural differences, which are among the principles of the concept of multicultural education and ensuring an equal opportunity of success for all students (Le Roux, 2000).

Idaho is a state that relies on agriculture for both economic and cultural enrichment (Idaho State Department of Agriculture, 2018). Idaho has more than 82,000 square miles dedicated to a plentiful and diverse agricultural system. The agricultural industry in the state of Idaho provides an annual \$8.4 billion to the state's economy and encompasses 24,000 farms and ranches (Idaho State Department of Agriculture, 2014). Food and agricultural products contribute 22% of Idaho's total exports in the world (Xiaoxue & Taylor, 2018). Nearly \$2 billion of Idaho's produce, grains, meats, dairy, and seeds are sold worldwide (Idaho State Department, 2018).

Agriculture in Idaho includes production of several unique commodities. Idaho ranks second nationally in peppermint oil production (Matthews, 2019), ranks second nationally in sugar beet production (Neher, 2019), and continues to rank first nationally in barley production (Ellis, 2019). Roughly 46% of the total value of Idaho's agricultural exports is destined for Canada and Mexico and 20% of Idaho's agricultural products go to China, South Korea, and Japan (Xiaoxue & Taylor, 2018). Most of the rural counties that are growing currently in Idaho, are in the south-central region where agriculture is strong and has a growing workforce (Idaho at a Glance, 2015).

The large economic impact the agricultural industry has in Idaho is supported by the nearly 48,000 jobs filled by various agricultural (Idaho State Department of Labor, 2015). Annually, approximately 57,900 jobs are available in Idaho for graduates with a bachelor's degree in the areas of agriculture, renewable natural resources, and environmental areas (Goecker, Smith, et al., 2015). There is a shortage of an average of 35,400 new U.S. graduates with expertise in food, agriculture, renewable natural resources, or the environment, and are expected to fill 61% of the expected 57,900 average annual openings (Goecker et al., 2015).

To meet the higher capacity demands of a global economy and understand agriculture in a global context, a diverse workforce is needed (Doerfert, 2011). Globally competent students prepare for complex societies and a global economy through their persistent efforts to understand the world in which we live and act in ways that improve the wellbeing of societies (Boix-Mansilla, 2012). To be competitive, ethical, and effective workers, today's students must understand the key topics of global citizenship that will assist them in their future work (OECD, 2018).

Many educators highlight the importance of learning about the world and making connections between national, international, and global issues as indispensable to a high-quality education (Green & Olsen, 2002). Global citizenship through global competence can examine local, global, and intercultural issues, understand and appreciate different perspectives, interact successfully and respectfully with others, and take responsible action toward sustainability and collective well-being (OECD, 2018). While educators were previously criticized for failing to link educational content with real world events (Conroy & Walker, 2000), the National Research Council (2009) stated that agricultural education is “uniquely positioned to respond to student’s interest in making the world a better place and in responding to such important societal needs as food, health, environmental stewardship, sustainability, and energy security (p. 2).” However, agricultural professors, Akpan and Martin (1996) found that many professors and teachers that had not participated in an international experience did not feel competent in incorporating a global perspective into their curriculum. By focusing their own professional development as an educator, it could be fundamental in developing the same global competence and mindset among students in their classrooms in the Pacific Northwest (Roberts, 2006).



Secondary agricultural educators have the ability to influence many decisions about a student's career and further education (Park & Rudd, 2005). Students spend hours with the agricultural educator developing supervised agricultural experience programs, preparing for leadership and career development events, and working on FFA activities after school (Park & Rudd, 2005). In Idaho, there are 98 high school agriculture programs with 147 high school agriculture teachers (IATA, 2019). These teachers could help students see the importance of a globally connected career in the Idaho agricultural industry, but only if they feel comfortable instructing students about agriculture on a global scale with the right competencies to be successful (Conner & Roberts, 2013)

### **Significance of Study**

There has been little research on the internationalization of curriculum for agricultural educators in the Pacific Northwest (PNW). The information collected through this study could assist state leaders and industry professionals in creating and administering lessons and assessments for secondary agricultural education students which could increase overall global citizenship. Increased global citizenship involves questioning and critical thinking, discovering our views, values, and assumptions in local and global dimensions, understanding the complexity of global issues, and developing multi-faceted perspectives (Yuksel, 2018). To cultivate global competencies in teachers, teacher preparation programs are tasked with the challenge of organizing and offering such learning opportunities (Foster, Sankey, et al., 2014). This study provides the opportunity for integration of a globalized agricultural curriculum in the PNW secondary agricultural education programs and a platform for examining current levels of global competency within secondary students and PNW agricultural educators. The design of this study also allowed us to test the effectiveness of global agriculture curriculum

training on student global competency, which could provide insight about how to help students be more prepared for careers in an increasingly global world.

### **Purpose**

The purpose of this study is to examine global citizenship factors including social responsibility, global competence, global civic engagement, and global agricultural engagement in PNW secondary agricultural educators and secondary agricultural education students. To fulfill this purpose, the study will be guided by the following objectives;

1. Identify Pacific Northwest secondary agricultural educators' definitions of global agriculture.
2. Identify global competencies Pacific Northwest secondary agricultural educators report teaching within current curriculum.
3. Describe Pacific Northwest agricultural education student's Global Agriculture Content Knowledge Score.
4. Describe the Global Citizenship Score of Pacific Northwest agricultural education students before implementation of global competency curriculum.
5. Describe the Global Citizenship Score of Pacific Northwest agricultural education students after implementation of global competency curriculum instruction.
6. Examine differences in the Global Citizenship Score of the Pacific Northwest secondary agricultural educators before and after completion of the global competency curriculum instruction.
7. Examine differences in Pacific Northwest agricultural education student's global citizenship before and after instruction of global agriculture curriculum.

8. Examine differences in Pacific Northwest agricultural education students amount of global citizenship before and after instruction of a global agriculture curriculum, based on demographic factors (gender, grade, and age).
9. Examine differences in the Pacific Northwest agricultural educators amount of global citizenship before and after instruction based on demographic factors (age and gender).

### **Constitutive Definitions**

- **Agricultural Education-** An instructional program which prepares students for careers in food, fiber, and natural resource system utilizing the three-circle model (Classroom instruction, SAE, and FFA) (National FFA, 2016).
- **Cultural Intelligence-** The ability to relate and work effectively with people from different cultural backgrounds beyond existing notions of cultural sensitivity and awareness (CIC, 2019).
- **School- Based Agricultural Education Program-** Intra-curricular secondary education in agriculture constructed of three components: classroom instruction, FFA, and Supervised Agricultural Experience (SAE) (Talbert, Vaughn & Croom & Lee, 2007).
- **Social Responsibility-** The perceived level of interdependence and social concern to others, to society, and to the environment (Andrzejewski & Alessio, 1999; Braskamp, Braskamp, & Merrill, 2008; Parekh, 2003; Westheimer & Kahne, 2004).
- **Global Civic Engagement:** The demonstration of action and predisposition toward recognizing local, state, national, and global community issues and responding through actions such as volunteerism, political activism, and community participation (Andrzejewski & Alessio, 1999; Lagos, 2001; Paige, Stallman & Josic, 2008).

- **Global Citizenship-** Morais and Ogden (2010) define global citizenship as the presence of social responsibility, global competence, and global civic engagement
- **Secondary Agricultural Education Student-** A student that participates in classroom and laboratory instruction, and experiential learning with their agricultural educator (NAAE)
- **Secondary Agricultural Educator-** Teachers at the secondary school level (urban and rural) who teach curriculum related to the agricultural sciences (National FFA, 2016)
- **Global Competence-** Is characterized by a nonjudgmental behavior, where students are both open to different cultural perspectives and actively seek to learn about different cultural norms and expectations, thereby using this knowledge to interact with people who are different from themselves (American Council on Education, 2008; Morais & Ogden, 2010; Westheimer & Kahne, 2004).

### **Operational Definitions**

Terms used in this research study were derived from a variety of literature in agricultural education, agricultural extension, and global agriculture literature. The following section includes terms and definitions.

- **Global Citizenship-** Is the combination of the presence of social responsibility, global competence, and global civic engagement as measured by Morais and Ogden (2010).
- **Global Competence-** Students with a high level of global competence are interested in world and current events, demonstrate intercultural communication skills and use

them effectively and can also acknowledge their own intercultural limitations as measured by (Morais & Ogden, 2011).

- **Social Responsibility:** Students with high levels of social responsibility respect diverse opinions, can assess social issues and provide examples of injustice and inequality around the world, and demonstrate a commitment to addressing local and global issues of concern as measured by the Morais and Ogden Global Citizenship Scale.
- **Global Civic Engagement:** Involves involvement in civic organizations by engaging in or contributing to volunteer work or assistance in global civic organizations, having a political voice but constructing their political voice through their knowledge and experiences in the public domain, and through their global civic activism by engaging in purposeful local behaviors that advance a global agenda as measured by the Morais and Ogden Global Citizenship Scale.

### **Limitations**

Although research was designed to gain the most accurate information related to each objective, several limitations exist based on the nature of this study. Limitations include:

1. Participants in this study were purposively selected secondary agricultural educators in the PNW. It is important to note that the results of this study should not be generalized to all PNW agricultural educators or other agricultural education populations.
2. Differences in test and subject material administrators. There are differences in teacher abilities, years teaching and skill level factors which could have influenced the results. To control for this, the PNW agricultural educators in this study were required to

complete a detailed training in appropriate techniques for the delivery of each module, objective, and procedures for the course. In addition, teachers were asked questions in relation to the backgrounds and teaching styles as a portion of the selection process.

3. Due to the COVID-19 pandemic, student absences and at-home attendance during the course could have contributed to students not receiving information or having access to teacher guidance. To control for COVID-related school closures, printed materials, designed to be delivered in class for curriculum treatments, were modified for students to take home as they attended their high school class via Zoom.

### **Basic Assumptions**

The following assumptions about data collection were assumed to be true. Being such, there is no documentation that verifies this data was collected thus the following assumptions will be included within the parameters of this research:

1. PNW secondary agricultural educators that were administering the instructional units taught the units following the lesson plans within the experimental curriculum exactly as written without straying from the material. Secondary agricultural educators participating this study received training in the proper use of the curriculum and instruction on the specific factors of cognitive sequencing.
2. Students that are participating in the study are enrolled in a secondary high school agricultural education course during the 2020-21 school year in the PNW.
3. PNW secondary agricultural educators and students completed the Global Citizenship Scale Pre and Post Assessment based on their level of understanding of the material.

4. PNW secondary agricultural education students completed the Global Agriculture Content Knowledge Assessment at the end of the course based on their level of understanding of the material.
5. Information obtained related to student socioeconomic status, age, grade, and gender were accurate.
6. Access to the website, materials, and resources were utilized throughout the study to participate in all the modules that were used as the experimental treatment for the study.

### **Summary**

To meet the needs of a globalized and diversified agricultural industry, students must be provided with the tools and resources to support the requirements of a growing nation and world (Marx, 2014). Nussbaum (2002) viewed global citizenship as developing the capacity for critical self-examination, cultivating awareness of oneself as a human who is bound to all other people with connections of concern, and the ability to imagine oneself in another's place, the true indicator of empathy. With the tools of cultural intelligence and global competence, an individual can be skilled and flexible when gaining knowledge about culture and reshape their structure of thought (Thomas, & Inkson, 2003). Curriculum should be centered on global citizenship should enlarge students' perspectives "so that their views of the world are not ethnocentric, stereotypical, or otherwise limited by a narrow or distorted point of view" (Ramji, n.d. para. 12).

By using the tools from Morais and Ogden (2010), secondary agricultural educators can access their students and themselves when working on global curricula. The Education for Global Citizenship curriculum outlined a global citizen as one who is aware of the world at

large and their role as a global citizen, respects, and values diversity, understands how the world operates, is enraged by social injustice, actively participated in their local and global community, and takes responsibility for their actions (OXFAM, 2015). Global citizenship is a multidimensional construct that requires students and teachers to use the interrelated dimensions of social responsibility, global competence, and global civic engagement (Morais & Ogden, 2010). This study required all three dimensions of global citizenship to be incorporated into curricula with clear standards and assessed in meaningful ways (Morais & Ogden, 2010). Based on current research in this field (Lang, 2013; Tardif, 2015; Kishino & Takahashi 2019) the ideal study would involve and prepare secondary agricultural educators and their students to learn about their own global citizenship through global competence, social responsibility, and global civic engagement through global agricultural citizenship lessons to prepare them for their future in the agricultural field.



## **Chapter II**

### **Literature Review**

For high schools to produce globally competent graduates, teachers and curricula must encourage and promote the importance of globalization and multiculturalism (Longview Foundation, 2008). Examining previous work of global competence with students begins with defining and examining global competency in the nation. From there, an examination of global citizenship should be examined to identify how to address the need for global competence and how it can impact students. Next, is an investigation of literature related to the need for global competency in agricultural educators. The last part of the investigation of literature will examine past models that have been studied and what will be implemented in this research.

#### **Global Citizenship and Global Competence**

Global citizenship is defined as being able to assess issues related to the world from different aspects, finding new solutions to these problems, interpreting global changes, analyzing the effects of these changes on individuals' lives, and being aware of the existence of different cultures (Burrows, 2004). Global citizenship involves questioning and critical thinking, discovering views, values, and assumptions in local and global dimension, understanding the complexity of global issues, develop a multi-faceted perspective and expanding the concept of social justice both at a local and global level (OXFAM, 2015).

According to Morais and Ogden (2011), there are three dimensions within the scope of global citizenship: social responsibility, global competence, and global civil participation of individuals (Morais & Ogden, 2011). The three dimensions work both individually and collectively to help someone develop global citizenship (Morais & Ogden, 2011).

Social responsibility is determined by the level of interdependence and social anxiety towards others, society, and the environment (Falk, 1994). Individuals with social responsibility assess social problems and identify instances of global injustice and inequality (Urry, 2000). Increased social responsibility can lead to more respect of different points and the ability to create social service ethics to address local and global issues (Andrzejewski & Alessio, 1999).

Global competence is the next component of global citizenship. Global competence is being open-minded, making active efforts to understand others' cultural norms and expectations, communicating knowledge, and using it to work effectively outside the environment (Dobson, 2003). Global competence includes having the knowledge, skills, and dispositions needed to function successfully in the globalized world (Gardner, 2004). More specifically, it includes the ability to speak, understand, and think in a foreign language, have knowledge of the global system and world history, geography, and other global issues such as health and economics (Gardner, 2004).

Global civil participation is the next component. It is defined as recognizing local, national, and global community problems, demonstrating action and predisposition to issues such as volunteering, political activism, and social involvement (Noddings, 2005). In an increasingly globalized world, the identification of skills that facilitate effective intercultural interactions is becoming even more important in all aspects of humanity from diplomacy to commercial and international assistance to peacekeeping operations (Devitt, 2014).

### **Need for Global Citizenship in the U.S.**

For a student to have global citizenship, they must possess global competence (Morais & Ogden, 2010). Global competence is characterized by a nonjudgmental behavior, where students are both open to different cultural perspectives and actively seek to learn about different cultural norms and expectations, thereby using this knowledge to interact with people who are different from themselves (American Council on Education, 2008; Morais & Odgen, 2010; Westheimer & Kahne, 2004). Students with a high level of global competence are interested in the world and current events, demonstrate intercultural communication skills and use them effectively, and can also acknowledge their own intercultural communication limitations (Morais & Ogden, 2010).

Since the late 20<sup>th</sup> century, global citizenship education has received increasingly more attention from educators and researchers (Dill, 2015). As the world became more interconnected than ever, educators began attempting to foster contributive individuals with global consciousness and competence (Dill, 2015; Jooste & Heleta, 2017; Kruka & Carano, 2016). A 21<sup>st</sup> century graduate will need extensive knowledge of the world and the skills and dispositions to engage with people from many cultures and counties (Longview Foundation, 2008). All educators have a responsibility to create a globally inclusive environment for students (Primary Source, 2018).

Previous works from the National Council for the Accreditation of Teachers (Fox & Gay, 1995) include multicultural education as part of the teacher-preparation curriculum. Multicultural education values different student cultures and prepares students to thrive in a diverse world (Fox & Gay, 1995). Whereas global education is one that incorporates learning about the cultures, geographies, histories, and current issues of all the world's regions

(Primary Source, 2018). In effect, global education serves as an extension of multicultural education, as there are numerous implications where understanding culture takes on a global perspective (Primary Source, 2018). Scholars in both multicultural education and global education believe that our future rests upon the abilities of young people to interact effectively with people different from themselves and take action in transforming structures of local and global oppression and inequity into structures that can bring about social and economic justice (Banks, 1995).

Teacher educators note that they are not successfully preparing future teachers to engage and teach from a multi-cultural and global perspective (Merryfield, 2000). Merryfield (2000) identified teacher educators who were recognized by their peers for success in preparing teachers for both multicultural and global education settings and asked them to reflect upon their experiences. Merryfield (2000) examined teacher educators who focused on multi-cultural and global education and identified distinct characteristics among successful multi-cultural educators including significant experiences with people different from themselves, awareness of discrimination and injustice, consciousness of how human differences are used by people in power to rationalize inequities, maintain their privilege and promote their culture as superior (Merryfield, 2000).

Globally competent students recognize their own limitations and abilities for engaging in intercultural encounters while demonstrated an array of intercultural communication skills with the ability to engage in these encounters (Morais & Ogden, 2010). Agricultural educators need to address the question of balance in agricultural students' learning experiences in the areas of foreign language, policy, ethics, communication, social sciences, and the environment where they play an active role (Acker, 1999). Students who lack a sense of

global citizenship are unlikely to be motivated consistently and strategically toward sustainability values. Although global citizenship and global competency is not the complete way to understand sustainable values, or other social values that exist, however it is an important part of understanding how they function (Roberts & Wilson, 2016).

Unfortunately, many teachers have not been prepared to successfully teach for diversity, challenge inequities, examine sustainability, or even recognize the effects of globalization in the lives of their students and communities (Grant, 1995). Colleges of agriculture nationwide responded by creating relevant international experiences for undergraduate students to provide opportunities for students to gain cultural exposure within the context of global agriculture (Foster et al., 2014). Despite the emphasis placed on the internationalization of the undergraduate curriculum by many institutions, undergraduates nationwide are still graduating with inadequate global competencies (Heinert & Roberts, 2016).

In a study at Texas A&M University, Wingenbach et al., (2003) reported that only 5% of the undergraduate participants in an introductory course obtained a passing score on a knowledge test that focused on international agricultural issues. When compared with other skills, competences, and experiences, emphasizing international awareness or experience in the undergraduate agricultural curriculum ranked last on faculty priority lists (Navarro & Edwards, 2008). Navarro and Edwards (2008) concluded that internationalization of the undergraduate agricultural curriculum is often viewed as a stand-alone effort towards curriculum reform. Faculty in colleges of agriculture, ranging from administrators seeking to implement holistic change in the internationalization of the undergraduate experience to individual instructors seeking to enhance global thinking, are attempting to implement a

variety of international experiences with their undergraduate student with varying layers of success (Navarro & Edwards, 2008). Despite several international experiences available to faculty and students in colleges of agriculture across the nation, numbers of globally prepared graduates from colleges of agriculture remained low (Irani et al., 2005, Wingenbach et al., 2003).

Teacher beliefs have not been extensively studied, but what research exists has shown beliefs impact the implementation of curriculum (Hurst et. al., 2015). Selected demographic characteristics have been shown to influence other factors such as attitudes, beliefs, and level of integration on global agricultural issues (Hurst et. al., 2015). Positive relationships have been found between level of global integration and teacher age, level of formal education, and years teacher (Ibezim & McCracken, 1994). Hossain, Moore, and Elliot (1995) also found age to be related to attitudes, with younger teachers having more favorable attitudes about internationalization than older teachers.

There are other aspects of education that could foster global citizens (Trede, Bowles, et al., 2013; Whitley & Yoder, 2015). Whitley and Yoder (2015) conducted a study which examines, in part, student social responsibility. They administered surveys to ( $n = 1,240$ ) students at Michigan State University and found that all three types of educational experiences positively influenced the participants' attitudes and behaviors toward political engagement and social responsibility. Their results indicate that internationalization should be a multifaceted effort of curricular reform, a process embedded in all programs, and a necessary ingredient in everything faculty do from an instructional perspective (Navarro & Edwards, 2008).

Globalization of the substance of the student learning experience is a key pathway to preparing a global workforce (Acker, 1999). Educational institutions determined that educating society will result in social responsibility, global competence, and globally civic engaged citizens who are culturally intelligent (Tardif, 2015). “This could be the new construct of a ‘global citizen leader’; who will have the ability to bring about solutions for the many of the economic, environmental, and governance issues that face all societies,” (Karlberg, 2010). Educators in the field of agriculture need to operate with an expanded frame of reference to ensure a balance of domestic and international educational content (Acker, 1999).

“University education has a leadership role to play in developing a globally literate citizenry and workforce,” (Acker, 1999). For post-secondary agricultural education students, where internationalization of the curriculum has been addressed specifically in the past (Sammons & Martin, 1997; Duffy, Toness, & Christiansen, 1998) scant evidence exists to suggest that college students are knowledgeable about international agricultural policies, products, peoples, and cultures. Teachers of all disciplines can create meaningful learning opportunities that explore cross-cultural perspectives, draw from international examples, and encourage analytical thinking about global issues (Primary Source, 2018). These learning experiences prepare students to engage the larger world with greater confidence, thoughtfulness, and empathy (Primary Source, 2018).

### **Measuring Global Citizenship**

Practitioners focusing on globalization note the need for a new model of education that combines civic education, service learning, and study abroad with reflection and support to create a truly globally-minded student (Hartman, 2008; Kiely, 2005). To measure an

individual's level of global citizenship, researchers have utilized a variety of tests, surveys, and questionnaires (Lang, 2013). The Intercultural Development Inventory (IDI) is a 50-item theory-based measurement tool that solely measures intercultural competency (Bennett, 1993). The Cross-Cultural Adaptability Inventory (CCAI) is a self-assessment questionnaire that predicts that level to which an individual will successfully adapt to another culture but fails to determine global engagement and is not intended to be used alone, but rather as one of many tests and assessment measures (Meyers, 2007). The Global Competence Aptitude Assessment (Hunter, White, & Godbey, 2006) contains a series of questions that measures knowledge, skills, beliefs, and experiences needed to become globally competent but fails to measure the levels of social responsibility of global civic engagement (Morais & Ogden, 2010).

The purpose of this study was to focus on global competency embedded within the context of agriculture. To capture the information that is needed for this research, the model of the Global Citizenship Scale (Morais & Ogden, 2011), which includes three dimensions: social responsibility, global competence, and global civic engagement was used.

The model used to identify global citizenship was created by Duarte Morais and Anthony Ogden (2010). Specifically, it allows students to perform three overarching dimensions of global citizenship that are consistently noted in literature including social responsibility, global competence, and global civic engagement (Morais & Ogden, 2010). These interrelated dimensions align and reflect how governmental entities, associations, and educators have framed global citizenship (Morais & Ogden, 2010).

The scale development process was informed by an eight-step process proposed by DeVellis (1991). The scale pulls from many different survey instruments: the Citizenship,

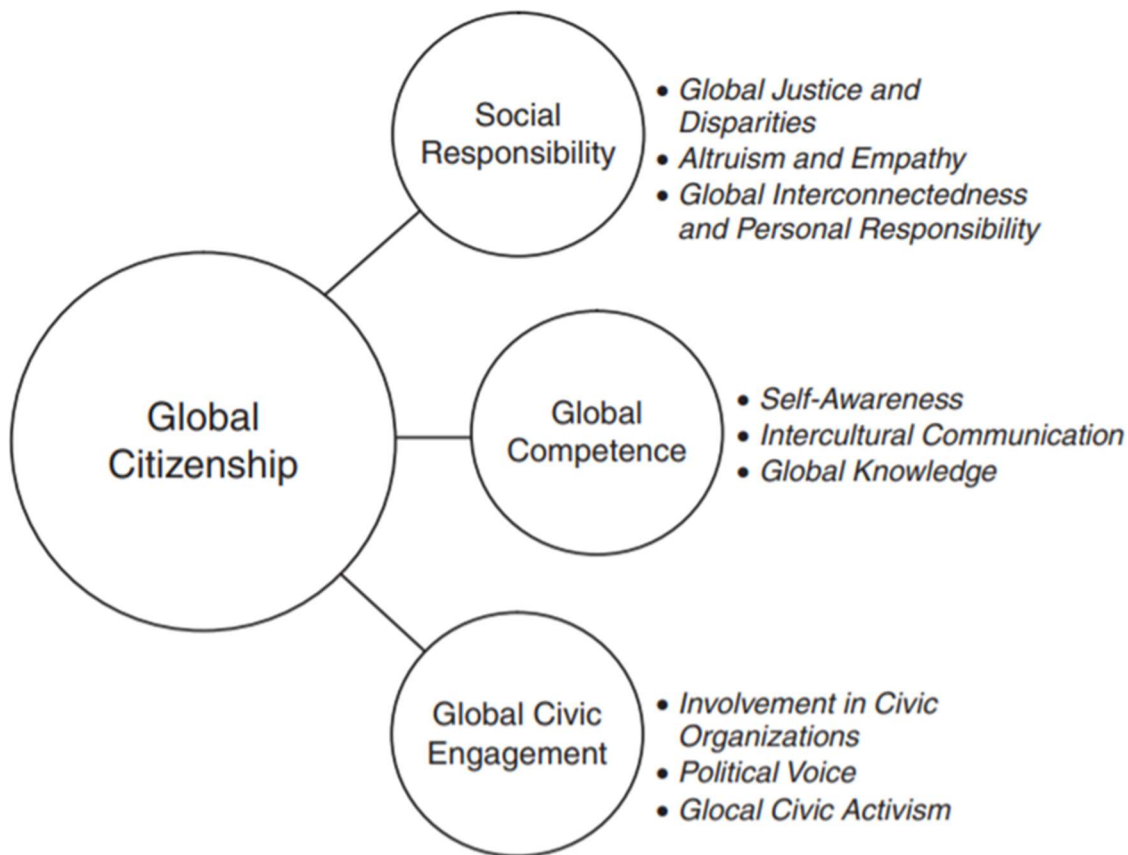


Involvement, Democracy Survey (Howard & Gilbert, 2008), the Civic Attitudes and Skills Questionnaire (Moely, Mercer, et al., 2002), the Civic Measurement Model (Flanagan, Syvertsen, & Stout, 2007), the Global Beliefs in a Just World Scale, Lipkis, 1991), the Core Indicators of Engagement, (Lopez et al. 2006), the Global Competence Apritute Assessment (Hunter, White, & Godbey, 2006), the Global Mindedness Scale (Hett, 1993), the Social Dominance Orientation Scale (Pratto, Sidanius, et al., 1994), the South Pacific Studies Abroad Survey (Tarrant, 2008), and the GPI, IDI, CCAI which was previously mentioned in the Literature Review.

Global citizenship is understood as a multidimensional construct that hinges on the interrelated dimensions of social responsibility, global competence, and global civic engagement (Morais & Ogden, 2010). In each of these dimensions, there are multiple subdimensions that reflect the complexity of the construct, see Figure 1 (Morais & Ogden, 2010).

Figure 1

*Global Citizenship Conceptual Model by Morais and Ogden (2010)*



The first dimension identified by Morais and Ogden (2010) is social responsibility. Social responsibility is described as the perceived level of interdependence and social concern to others, to society, and to the environment (Andrezejewski & Alessio, 1999; Braskamp, Braskamp, & Merrill, 2008; Parekh, 2003; Westheimer & Kahne, 2004). Socially responsible people integrate the interconnectedness between local behaviors and their global consequences into their decisions that they make (Morais & Ogden, 2010). People can identify global injustice and disparities by evaluating social issues and identify instances and

examples of global injustice and disparity (Morais & Ogden, 2010). People can exhibit altruistic behavior and show empathy by examining and respecting diverse perspectives and constructs by addressing global and local issues (Morais & Ogden, 2010). Lastly, people can identify the global interconnectedness and personal responsibility between local behaviors and their global consequences (Morais & Ogden, 2010).

The second dimension identified by Morais and Ogden (2010) is global competence. Globally competent people recognize their own limitations and abilities for engaging in intercultural encounters (Morais & Ogden, 2010). They demonstrate an array of intercultural communication skills and can engage successfully in intercultural encounters (Morais & Ogden, 2010). Global competence is leveraging knowledge by interacting, communicating, and working effectively outside one's environment (Morais & Ogden, 2011). Globally competent people engage in intercultural encounters, study abroad, and they pursue knowledge of global issues and know their own limitation (Morais & Ogden, 2011). The sub-dimensions of globally competent people start with being self-aware and recognizing own limitations and ability to engage successfully in an intercultural encounter (Morais & Ogden, 2010). The next sub-dimension is having intercultural communication skills by demonstrating an array of skills and successful intercultural encounters. Lastly, people can display an interest in global knowledge about world issues and events (Morais & Ogden, 2010).

The third dimension identified by Morais and Ogden (2010) is global civic engagement. Global civic engagement requires people who are civically engaged to construct their political voice by synthesizing their global knowledge and experiences in the public domain, and they engage in purposeful local behaviors that advance a global agenda (Falk, 1994; Putnam, 1995). The sub-dimensions of a global civic engaged person are categorized

with the first being their involvement in civic organization (Morais & Ogden, 2010). People are encouraged to engage in or contribute to volunteer work or assistance in global civic organizations (Morais & Ogden, 2010). The next dimension is having a political voice where one can identify their own global knowledge and experiences in the public domain. Lastly, people can engage in purposeful global civic activism by starting locally to then advance a global agenda (Morais & Ogden, 2010). From these dimensions, a person can develop self-awareness, intercultural competence, global knowledge, and learn the importance of the involvement in civic organization and political voice (Morais & Ogden, 2011). It is the presence of each of these dimensions that leads to global citizenship and identifies strategies that students and teachers can use to be more globally aware (Morais & Ogden, 2010).

As such, a person with a high level of global citizenship must demonstrate competency and action in social responsibility, global competence and global civic engagement. Morais and Ogden (2010) articulate how an individual might be well informed and love to talk about global issues (high social responsibility and global competence), but never actually act to effect change (low level of global civic engagement). Morais and Ogden (2010) also state that a person might have a high sense of social responsibility and global civic engagement, actively involved in local politics, but lack the intercultural skills to engage across differences. It is also possible that an individual demonstrates cross cultural competencies and is actively involved in global issues but their motivation might be purely economic and that student might not care at all about creating a more just and equitable society (low social responsibility) (Morais and Ogden, 2010).

To prepare teachers to teach global citizenship lessons and prepare their students for their future careers, Boix- Mansilla and Jackson (2011) developed a model for globalized

curriculum, included in Figure 2. The model depicts an understanding the world through disciplinary and interdisciplinary study. This resource was designed to support schools in developing global competence through dispositions to attain global competence (Boix-Mansilla, 2011). The model was tested and developed internationally in Chinese schools to test the outcomes of global subject matter (Boix- Mansilla, 2011). Researchers recognized the need to refine the framework as a vehicle to invite students to ‘understand the world,’ assume social and moral dimensions of learning, and have the framework be a ‘mind based’ and ‘agency based’ orientation to learning (Boix- Mansilla, 2011).

Figure 2

*Global Competence Model from Boix- Mansilla and Jackson (2011)*



## **Overlap of Global Citizenship Scale and Global Competence Lesson Plan Models**

Both the Morias and Ogden (2010) model and Boix-Mansilla Global Competence lesson plan structure (2011) were previously used in the study abroad programming for university agricultural education students with the Boix-Mansilla model serving as guidance for lessons taught (2011) and the Global Citizenship Scale Assessment tool implemented as pre and posttest measures of competence for the study abroad experience (2010). Students on

collegiate levels have participated in studies using both models in their programming (Lang, 2013).

### **Need for Global Competency in Agricultural Educators**

In agricultural education, the Morrill Act introduced the notion that students should work toward the betterment of society (National Research Council, 1995). The notion that community service or civic engagement should be incorporated into the curriculum was introduced in John Dewey's vision of progressive education, which emphasized the synthesis of education and experiences (Dewey, 1951). Instead of viewing knowledge as an objective where teachers instill knowledge unto their students, Dewey believed that students learn by experiencing conflict and using reason to solve real problems (Rocheleau, 2004). The United States has entered a global era and it is the responsibility of education to prepare people for the world in which they will be living (Nehrt, 1993). Agricultural educators can engage their students in real-world global issues to guide students to become emotionally and physically invested in problems which can help students feel connected to their own learning and to therefore benefit from their experiences (Rocheleau, 2004).

Global citizenship is rooted in civic education and service-learning (Hartman, 2008). The goal of civic education is to teach young people how to become competent and responsible citizens throughout their entire life (Center for Information and Research on Civic Learning and Engagement [CIRCLE], 2003). Agricultural education has a responsibility to prepare globally aware students for employment in the workforce (Hurst, 2015). Many agricultural problems have a global nature (National Research Council, 2009). Agricultural educators can serve as the direct link to prepare a diverse workforce that meets the higher capacity demands of a global economy and understands agriculture in a global context (Doerfert, 2011).

Conner and Roberts (2013) examined competencies that agricultural educators need in a modified Delphi study of ( $n = 13$ ) experts representing 12 different agricultural education programs throughout the United States. The objectives of their study included identifying global competencies that pre-service agricultural educators should possess before entering the teaching profession along with identifying global experiences that pre-service agricultural educators should obtain before entering the teaching profession (Conner & Roberts, 2013). The expert panel of teacher educators came to a consensus that pre-service agricultural educators need twenty competencies and two experiences to teach a globalized curriculum at the high school level, listed in Table 1 (Conner & Robert, 2013). The experiences were focused on pedagogical development and focused on developing knowledge based on the experiences of others (Conner & Roberts, 2013).



Table 1

*Descriptive Statistics of Competencies by Delphi Round 1 and 2*

Competencies Identified in Round 1 (n = 28)	Agree/Strongly Agree %
1. Understand cultural differences	100.00
2. Promote integrative, open-mindedness, and critical thinking skills	96.00
3. Awareness of global issues and trends	96.00
4. Active life-long learner	96.00
5. Demonstration of transferable workplace skills such as collaboration, literacy, time management	96.00
6. Develop a sense of empathy	96.00
7. Ability to integrate global and cultural concepts within all family and consumer sciences content areas	92.00
8. Understand global family issues	92.00
9. Respect of student differences (ethnicity, gender, religion, learning styles)	88.00
10. Ability to apply appropriate instructional methods	88.00
11. Appreciation for diversity	88.00
12. Knowledge and skillful use of technology	88.00
13. Selection and development of curriculum that fosters diversity	88.00
14. Knowledge of global family cultures, traditions, characteristics, and functions	84.00
15. Basic knowledge of geography	80.00
16. Cross- cultural communications skills	76.00
17. Knowledge of cultural foods	76.00
18. Interpret current research regarding cultural issues affecting individuals and families	72.00
19. Recognize the role of language in the classroom	72.00
20. Develop social action skills	72.00
21. Understand different religions and political and economic systems	60.00
22. Basic knowledge of at least one foreign language	24.00

The competencies identified supported and expanded the Longview Foundation's characteristics of a globally competent student (2008). The competencies identified were categorized as competences related to agricultural production, economics, political and policy, and social and cultural (Conner & Roberts, 2013). Teachers are the key in developing and delivering educational activities (Darling-Hammond & Bransford, 2005).

Many agricultural issues affecting communities are relevant problems in other parts of the world (Shoulders & Myers, 2010). Some of our nation's critical policy issues, including water management, unstable economy, animal welfare, alternative fuel sources, and environmental concerns are shared by many nations. These issues are relevant globally and can be taught in classroom instruction (Shoulders & Myers, 2010). Providing students with applicable, relevant experiences through which they can develop their agricultural knowledge is a critical component of an agricultural education program (Shoulders & Myers, 2010). School based agricultural education programs are intra-curricular (National FFA, 2016). Incorporating international perspectives in the high school curriculum can broaden student perspectives as they seek employment or continue through college (Hurst et al., 2015).

Secondary education in agriculture is constructed of three components: classroom instruction, FFA, and Supervised Agricultural Experience (SAE) (Talbert, Vaughn, Croom & Lee, 2005). Finding meaningful Supervised Agricultural Experiences, or SAEs, to address international opportunities regarding the changing practices of agriculture, can be daunting (Shoulders & Myers, 2010). As agriculture becomes more globally intertwined, globally focused SAEs offer opportunities for student to develop agricultural knowledge and experience in creative, easily accessible ways (Shoulders & Myers, 2010). Shoulders and Myers (2010) state globally based SAEs provide unique benefits to students, as well as to the

entire agriculture department. By adding an international component to an SAE, the student gains an understanding and appreciation for factors that make up the world of agriculture existing beyond the scope of his or her previous personal experiences.

To focus on promoting civil responsibility, The National FFA Organization promotes annual service activities for students through their “Living to Serve Initiative,” (Shoulders & Myers, 2010). Teachers can model and promote service activities by encouraging students to design, organize, and fund community-based initiatives that can connect to a worldwide issue of hunger (Shoulders & Myers, 2010). Teachers can prepare their students by providing them with opportunities to develop and produce globally based SAEs, classroom activities, and “Living to Serve” FFA events that they can use as information and knowledge to be more prepared for future agricultural careers (Shoulders & Myers, 2010). Shoulders and Myers (2010) state by providing students opportunities to experience these benefits through globally based SAEs, teachers are eliminating some of the barriers of traditions SAEs that are becoming increasingly common among today’s non-production-oriented agriculture students. Agriculture teachers consider SAE programs as a vital contextual learning opportunity for students (Phipps, 2008). SAE programs create a possible way for students to explore different careers before graduation (Rubenstein, Thoron & Estepp, 2014).

The agricultural education teacher is the most important influencer in engaging students in their classroom, SAE, and FFA program (Rubenstein & Thoron, 2015). However, students interests, and motivations are changing with students that want careers that are going to provide a steady income with careers that are personally and professionally rewarding (National Research Council, 2009). To change the curriculum for a focus on global perspectives, strategic planning should be the beginning of an extended and ongoing process

of change, evaluation, and adaptation (National Research Council, 2009). Secondary agricultural educators need to encourage agriculture courses to take advantage of research in student learning and to draw on real-world examples, engage students actively, and be informed by agricultural science and practice from a variety of viewpoints (National Research Council, 2009). Teachers are at the forefront of bringing global awareness and perspectives into the classroom if they are prepared to teach them in their classrooms (Hartwick, 2016).

The preparation of secondary agriculture education teachers and their beliefs regarding global curriculum integration have not been extensively studied. Studies are just beginning to fill this gap in the knowledge base with further research in areas that are needed to continue the development of a theoretical base for the competencies and experiences by agriculture educators in order to teach globalized curricula (Conner & Robert, 2013). Existing research highlights how beliefs impact the implementation of curriculum (Hurst, 2015). For students to attain global competency and citizenship, it is important for teachers to appreciate the relevance of global perspectives of the subject matter that they are teaching (Magtoto, 2017).

### **Conceptual Framework**

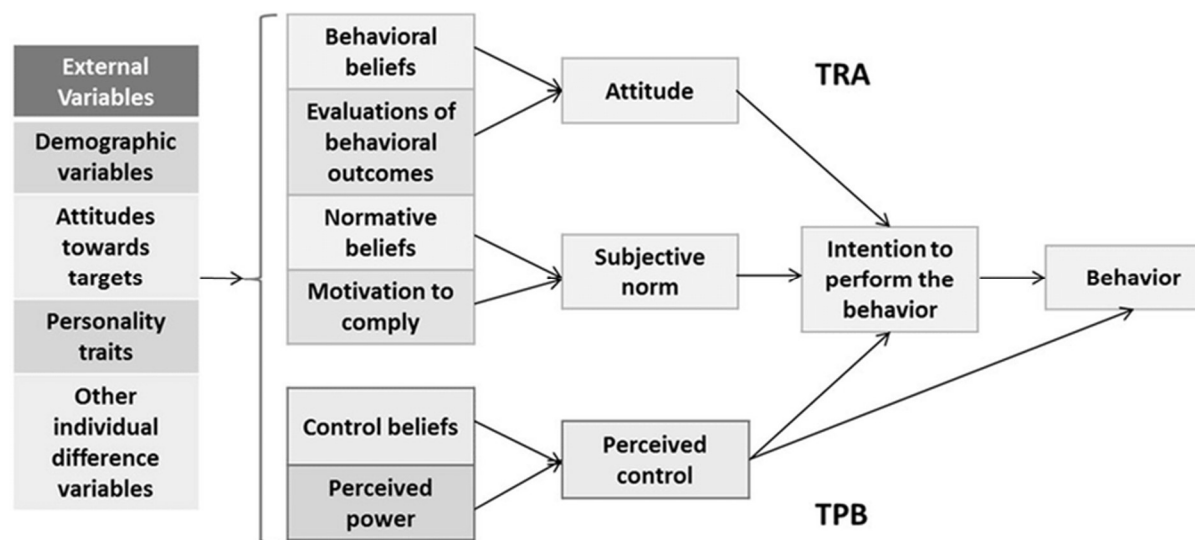
This study draws from both motivation theory and global citizenship models to build a framework for the examination of global citizenship in agricultural education. When examining the motivation behind a student or teacher gaining global competence, we can draw from the theory of planned behavior (TPB) as developed from the theory of reasoned actions in 1985 (Hackman & Knowlden, 2014). The Theory of Reasoned Action (TRA) is used to explain and predict behavior based on attitudes, norms, and intentions (OER, 2018). The components of TRA include behavioral beliefs, evaluations of behavioral outcomes which leads to attitude, then normative beliefs, which leads to motivation to comply which

leads to subjective norms (OER, 2018). TRA does not account for people's perception of the power that they have over their own behavior (OER, 2018).

The Theory of Planned Behavior introduces control beliefs, perceived power which leads to perceived controls, then intention to perform the behavior, after which then the behavior occurs (Figure 3) (OER, 2018). Analyzing external variables impacting Idaho secondary agricultural educators could help guide the research in developing a theory for the behavior regarding the implementation of global agriculture curriculum in high school agricultural education classrooms.

*Figure 3*

*Triad and the Theory of Reasoned Action and Theory of Planned Behavior (OER, 2018)*

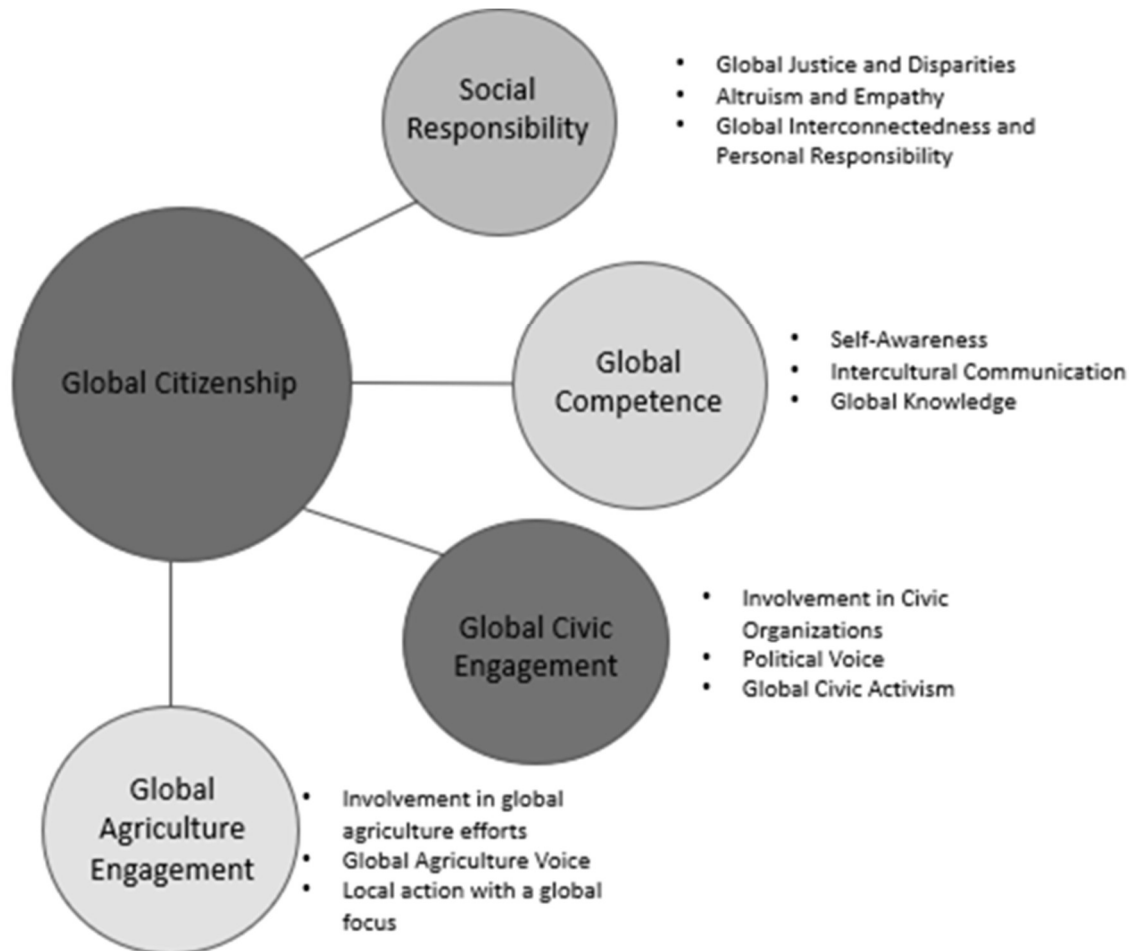


A secondary agricultural educator constructs meaning through their own experiences and interacts with the student and universities from the curriculum that they are learning (Roberts, 2006).

To operationalize the theory of reasoned action, the study integrated both Morais and Ogden (2010) Citizenship Scale and the Boix-Mansilla Global Competence Lesson Plan (2011) structure to organize this research. The components of the Global Citizenship Lessons included all the components of the Global Citizenship Scale to construct the objectives and the lesson plans were developed according to the Boix-Mansilla model. The resulting conceptual model was adapted from the Morais and Ogden model (2010). Adaptions include items aligned to the needs of PNW high school agriculture education classes identified in (Figure 4). The adaptions were created by the researcher to add in agricultural education components that would fit within the parameters of secondary agricultural education classrooms. The added “Global Agriculture Engagement” section allowed for reflection on the part of the student on how they can engage their communities and chapters within their own understanding in agriculture. There was no component that included agricultural topics to be discussed which could limit the conversations to be had in the secondary agricultural education classrooms. Within this study, this framework guides the development lessons which are connected to agriculture concepts and global agriculture issues.

Figure 4:

*Global Citizenship Adapted Model from Morais and Ogden (2010)*



### **Chapter III: Methods**

This was a quasi-experiment study including an experimental pre/post design and a content-based assessment to analyze what PNW secondary agricultural educators and their students knew about global agriculture. It was designed to measure growth in global competence when a global agriculture curriculum was integrated as a treatment. This study also included descriptive surveys to examine initial agricultural educator views on global curriculum and to examine how students viewed their own global citizenship after experiencing classes based on global citizenship lessons. Treatment exposure was conducted over a five-day global citizenship unit delivered by PNW secondary agricultural educators to their students. Instructors were trained in the utilization of the curriculum, the resources, and the website that was provided. This chapter outlines the methods and procedures that were used to address the research question and objectives of this study including research design, development of experimental treatments (including instrumentation), research procedures, population and sample, and data analysis.

#### **Research Question**

The purpose of this study was to determine the effect of an implementation of a global citizenship curriculum within secondary agricultural education courses in the PNW to see if their global citizenship and global content knowledge totals increased through the treatment. This study examined the secondary agricultural educators and their student's global citizenship scores which is comprised of social responsibility, global competence, global agriculture engagement and global civic engagement in a pre and posttest design as well as



analyze the total global content knowledge gained over the treatment. To accomplish this purpose, the study design was developed to answer the following research question:

1. What is the effect of instructing a globalized agriculture curriculum on the global competency of secondary agricultural students in the Pacific Northwest?

The purpose of this study was derived directly in response to the research question and was to examine global citizenship factors including social responsibility, global competence, and global civic engagement in PNW secondary agricultural educators and secondary agricultural education students. To fulfill this purpose, the study was guided in design by the following objectives;

1. Identify Pacific Northwest secondary agricultural educators' definitions global agriculture.
2. Identify global competencies Pacific Northwest secondary agricultural educators report teaching within current curriculum.
3. Describe Pacific Northwest agricultural education student's Global Agriculture Content Knowledge Score.
4. Describe the Global Citizenship Score of Pacific Northwest agricultural education students before implementation of global competency curriculum.
5. Describe the Global Citizenship Score of Pacific Northwest agricultural education students after implementation of global competency curriculum instruction.
6. Examine differences in the Global Citizenship Score of the Pacific Northwest secondary agricultural educators before and after completion of the global competency curriculum instruction.

7. Examine differences in Pacific Northwest agricultural education students amount of global citizenship before and after instruction of global agriculture curriculum.
8. Examine differences in Pacific Northwest agricultural education students amount of global citizenship before and after instruction of a global agriculture curriculum, based on demographic factors (gender, grade, and age).
9. Examine differences in the Pacific Northwest agricultural educators amount of global citizenship before and after instruction based on demographic factors (age and gender).

## Population

The target population for this study were secondary high school students and agricultural educators in the PNW. The initial survey round included a census of all Idaho agricultural educators ( $n = 152$ ) and the experimental round included purposively selecting six sites within the PNW for implementation of a global agriculture curriculum. From the six sites that were selected, there were 171 students enrolled in the program with 120 students that completed the experiment as shown in Table 2. As this quasi-experiment was conducted with a purposively selected sample from the population, no findings from this study should be generalized to the target population.

Table 2

*Students Enrolled and Completing Study by Site*

Site	Students Enrolled		Students Completed	
	<i>f</i>	%	<i>f</i>	%
1	51	100.0	27	52.9
2	54	100.0	39	72.2
3	6	100.0	5	83.3
4	12	100.0	12	100.0
5	29	100.0	18	62.0
6	19	100.0	19	100.0
Total	171	100.0	120	70.1

## **Sample**

There were two rounds of data collection in this study. In the first round we included a census of all Idaho agricultural educators ( $n = 152$ ) for an exploratory descriptive survey to gauge knowledge of global agriculture concepts and interest in participation in the second round of the study. This initial survey was designed to be sent out before the research began to assess if this study would be relevant in the PNW.

In the second round of the study, we purposively selected six teachers in the PNW and their respective teaching locations based on stated teacher interest of adding international agriculture components to the current curriculum along with seeking variation in size and location of school. This process occurred four months after the initial survey was sent out to the Idaho secondary agricultural educators. The resulting sites included in-tact high school classrooms with students enrolled in 7<sup>th</sup> grade to 12<sup>th</sup> grade across the six high schools in the Pacific Northwest.

## **Survey Instruments**

Four instruments were used to collect data through this study. The first was an exploratory survey distributed to all Idaho agricultural educators in Spring 2020. A teacher and student instrument related to perceptions of global citizenship was distributed as pre and posttest before and after the experimental treatment and a researcher-created instrument was used to measure student global agriculture content knowledge at the end of the five-day unit.

The initial survey in Spring 2020 included three sections. Section one included demographic items of age, years teaching, type of community where participants are currently teaching, gender, and experiences with travel outside of the United States. Researchers note

that there are no differences in how students or their teachers gain global competence across ethnicities (Rienties 2011), therefore, ethnicity was not included as a demographic question. By collecting this data, the differences between the different sites, the participants that serve there, and the experience that is had by those participants were examined. Section two measured items regarding how a participant defines global agriculture and if participants are currently integrating any global concepts into their classrooms. For respondents who indicated they taught global concepts in their classes, a follow-up question allowed them to describe what global concepts they integrated and what resources they currently have in their classrooms. Section three allowed respondents to report resources participants felt they needed to be successful in teaching global agriculture components to their programs.

The instrument used to measure global citizenship before and after the experimental treatment included four sections. Section one included demographic items of age, gender, size of school, and organization affiliation. Section two included 10 items regarding a students' and teachers' social responsibility relating to global injustice and disparities. These items were directly related to the global citizenship model (Morais & Ogden, 2010) and included items in the constructs of global justice and disparities, altruism and empathy, and global interconnectedness and personal responsibility. Section three included 10 items measuring global competence. These items came from the Global Citizenship Scale (Morais & Ogden, 2010) and included items based on assessing self-awareness, intercultural communication, and global knowledge. Section four included five items adapted from the global citizenship scale to fall within an agricultural context, with modifications from global civic engagement to specific global agriculture engagement. Appendix B includes the full-text of Global Citizenship Scale Instrument (Morais & Ogden, 2010).

The final instrument used in this study was a Global Content Knowledge exam designed by the research team to assess knowledge gained from the curriculum by the secondary agricultural students. This section was piloted by the researcher to connect the curriculum to the secondary agricultural classrooms with 14 questions including name and school, with the maximum score being out of 30 points. Refer to Appendix F for a sample of the Global Content Knowledge Assessment.

### **Distribution**

There were two rounds of data collection in this study. For Objectives 1 and 2, the survey that was delivered through the Idaho Agricultural Educators Listserv. This was to get a census of what teachers were currently incorporating in their classrooms, if there was a need or a desire to get global agricultural citizenship curriculum through this research, and lastly determine the definitions that secondary agricultural educators believe global agriculture entails. Out of the 157 secondary agricultural educators, 44 participants responded to the survey.

The distribution of experimental curriculum occurred once sites were selected to be in the study. This distribution occurred through a Qualtrics (pre/post) and Google Forms (assessment) based on the timeline for teachers instructing the global agriculture curriculum. Secondary agricultural educators were given access to the Google Drive folder to access how their students were doing but, were not given access to the Qualtrics information.

### **Reliability & Validity**

For the initial teacher instrument, open-ended questions were used. The validity of the instrument was examined by both the student researcher and a team of three university

faculty, two of which with previous international agriculture teaching experience. The faculty agreed that the instrument items were appropriate for the exploratory application of the instrument.

To measure student and teacher global citizenship before and after the global agriculture curriculum, a modified version of the Morais and Ogden Global Citizenship Scale was used. The reliability of the Morais and Ogden Global Citizenship Scale was previously examined using a principal component exploratory factor analysis (EFA) and Cronbach's of alpha  $\alpha = .92$  (Cronbach, 1951). Cronbach's coefficient alpha for the individual pre and posttest in this study were calculated post hoc. For the pretest, the Cronbach coefficient alpha was  $\alpha = .76$  (Cronbach, 1951). For the posttest, the Cronbach coefficient alpha was  $\alpha = .84$  (Cronbach, 1951). An added reliability measure was put in place with the Spearman-Brown split-half reliability coefficient and was calculated to represent the internal consistency between the first and second half of the modified scale. In the research by Morais and Ogden (2010), the scale revealed a strong Spearman-Brown coefficient of .91 which indicated the overall reliability of item intercorrelation on the scale. The Morais and Ogden (2010) Global Citizenship Scale's validity was assessed using the Krathwohl (2004) scale which included qualitative group interviews and a CFA using data collected from administration scale.

The researcher-designed unit exam used to determine gains in knowledge over the course of the unit was examined by global agriculture experts, teacher educators in agricultural education, and the teachers participating in the study. Items were aligned directly to unit objectives and reviewers agreed that the instrument had sufficient face validity to be used as the unit assessment for the global agriculture curriculum.

## **Experimental Design**

This study was conducted using a quasi-experimental design through an experimental pre/post design and a competency-based assessment to analyze what Idaho secondary agricultural educators and their students learned about global citizenship through a treatment. Quasi-experimental research was popularized by Campbell and Stanley (1963) and can be defined as “an experiment in which units are not randomly assigned to conditions,” (Shadish et. al. 2002). The use of quasi-experimental design allows researchers to conduct causal inference in situations where clinical experimentation is not practical. As Shadish and Cook (1999) explain:

Quasi-experiments share with all experiments a similar purpose, to test descriptive casual hypothesis about manipulable causes, as well as, many structural details, such as the frequent presence of control groups and pretest measures to support a counterfactual interference about what would have happened in the absence of treatment (p. 14).

The experimental component of this research was conducted using secondary agricultural education classes in the PNW. The instructors were trained in the utilization of the curriculum, the development of the models, and the resources that were created which includes the website and the Google Drive folders. The experiment ensured that there was a pre and posttest to establish a basis of global citizenship and students’ understanding through the beginning and the end of the research to ensure that data collection would occur from each student.

To accomplish this experiment, one unit of instruction was developed for the secondary agricultural classes that were selected to participate in this study. The unit was developed for

all secondary agricultural education courses that the teacher chose to teach this unit in. The instruction and the materials were the same for every school that participated with flexibility for the teachers to allow time for them to teach this course. Due to the COVID-19 pandemic, instruction of the course could be done at home or in the classroom by the students depending on their school policies. The pre and posttest remained the same throughout the course to assess if the different scores that were completed by students before and after the course. Each student was asked to complete the pre and posttest and the Global Content Knowledge Assessment to assess what content was learned by each student. The resulting model allowed for each student to experience the course at home or in the classroom with the same materials for everyone.

The basic experimental design for this study is outlined in Table 3. All sites were given the treatment and the pre and post-test for observations. The process was only completed once and then feedback from the secondary agricultural educators was given.

Table 3

<i>Basic experimental design by round</i>			
Group		Treatment	
G <sub>1-6</sub>	O <sub>1</sub>	X	O <sub>2</sub>

### **Conditions of Quasi- Experimental Research**

Shadish et. al. (2002) set forth that quasi- experiments require the same four conditions as traditional experimental research. Their requirements are variation in the treatment, post-treatment measures of outcome, at least one unit undergoing an observation,



and a mechanism for inferring what the outcome would have been without the treatment. To meet the requirements of this research design, this study adhered to the four conditions.

To meet the first requirement of experimental research, variation existed in the treatments for groups within this study. Groups received one unit of instruction and had the options to take the course through the website or by their teachers' instruction. There was variation on the website and the teachers' curriculum of what the students could complete including activities and videos to watch. Each participant had three collected outcome data points: Global Citizenship Scale pretest, Global Citizenship Scale posttest, and Global Content Knowledge assessment. This unit in the experiment was observed, fulfilling the third condition of experimental research. Lastly, to reach the final condition, interviews were conducted with the teachers to assess differences between treatment instruction and what they were doing previously in their courses before the treatment occurred.

### **Design Features**

The design features suggested for strengthening quasi-experimental studies are some forms of randomization in the assignment of treatments, the use of multiple or repeated measures, use of comparison groups, and varied application of treatment to multiple groups (Shadish, et al., 2002). This design was strengthened by the varied application of the treatment and the multiple or repeated measures to the schools that were in the study. Shadish noted, "adding more design elements is a way to gather more elaborate and diverse data in the service of improving causal inference" (p. 161). Using the website, the curriculum that was created, and the resources that were provided to the secondary agricultural instructors, the level of instruction could vary based on the information that was given to the students from the instructors. Using the pre and posttest in this study allowed for the use of repeated or

multiple measures. In this study, students completed both a pre and posttest assessments for the unit of instruction with the completion of the Global Content Knowledge Assessment. These repeated measures were identical for each of the schools and the unit that was completed.

Shadish posed the question, “is there an ideal or best quasi-experimental design, one that assembles these elements optimally? The answer is, usually not,” (p. 160). Shadish stressed the importance of adding different design features to strengthen the analyses in research design. “When the design features are added to the interrupted time series, the result is a quasi-experiment whose inferential yield sometimes rivals that of the randomized experience” (p. 161).

### **Variables**

Quasi-experimental research involves an examination of the independent variables and their relationship to a single or multiple dependent variables (Meyers. et al., 2013; Shadish, et. al., 2002). By examining independent and dependent factors, we may be able to determine casual relationships and interactions between factors to explain observed variation in student scores (Shadish, et. al., 2002).

This study involved the examination of two dependent variables, based on the change in a student’s score on Morais and Ogden’s Global Citizenship Scale (2010) from pretest to posttest and the score on the Global Content Knowledge Assessment. Examining these variables helped determine whether there was a difference that existed based on the treatment.

According to Rosenbaum (2012) the variables of interest for quasi-experimental study should be those which are: a) found in the literature to be potential contributors to outcome

variables, and b) are within the means of the research to collect in the given situation. Based on the literature in Chapter 2, the interaction between the dependent variables and the independent variables of, gender, age, and year were the viable variables of interest in this study. The resulting list of variables is found in Table 4.

Table 4

*Variables in Study Design*

Variable Name	Variable Type	Data Type
School Size	IV	Nominal
Year in school	IV	Nominal
Age	IV	Nominal
Change (Posttest-Pretest) Global Citizenship Unit	DV	Scale
Score on Global Content Knowledge Assessment	DV	Scale

These variables highlight information directly related to answering the research question. It is important to note the influence of confounding variables on all quasi-experimental research (Meyers, et. al., 2013; Shadish, et. al., 2002).

### **Experimental Curricula**

This unit included a pretest and posttest which were identical, regardless of the sequence of presentation. To ensure curricula met the rigorous requirements for use as experimental treatments, they were designed and verified to meet the specific criteria to hold constant the unit objectives, daily objectives, activities and formative assessments. The curriculum design was guided by the Boix-Mansilla Global Competence Model (2011). This served as a foundation for the lessons and the unit as indicated in Figure 2.

Figure 2

*Global Competence Model from Boix- Mansilla and Jackson (2011)*



This unit was designed to be an introductory unit to global agricultural concepts and was designed for a freshman and sophomore level classroom, with flexibility to access which class that best suits teacher's curriculum. This five-day unit on Global Agriculture Citizenship was taught to completion by the agricultural educators. The instruction occurred over five days, four days of content presentation and one day for student presentations with reflections for the students to access their knowledge gained from the course. The curriculum included lesson plans designed to be taught in 55-minute class periods.

## **Treatment Delivery and Training**

The unit of instruction created as the experimental treatments for this study were designed to be instructed in a specific manner for consistency. Each site was provided with lesson plans, worksheets, access to a website and resources to complete the unit. Completing this research within the way that it was designed, relied heavily on the teachers at each experimental site instructing the curricula exactly as designed. The possibility of deviation from the intended curricula posed a limitation to this study, this limitation was mitigated by both individual training for the teachers and the creation of a Teacher Handbook with instructions to complete the course.

## **Teacher Training**

All teachers selected for participation attended a full one-day professional development session to learn more about module contents, distribution, and scoring. They learned how to lead reflections for the unit lessons to standardize the treatment methods. Selected teachers also were asked a series of questions relating to their global competency knowledge, experiences had in the past, and what they are administering in their classrooms currently regarding global agriculture. The seminar and interviews were virtual depending on access to the teacher and allowed teachers to ask any clarifying questions they have for administering the modules. If the teachers had questions regarding the materials that they were directed to teach, a Teacher Handbook was available for a review as well as they had the researchers contact information. After the unit is complete at each site, the teachers were asked to a reflection interview with the researcher to allow for reflection and improvements to be discussed as well as results from the unit to be shared.

## Lesson Plans

The different topics are aligned to the Global Citizenship Model (Morais & Ogden, 2010) and the Boix- Mansilla Global Competence Model (2011). These topics consisted of social responsibility, global competence, global civic engagement and the additional adapted “global civic engagement” module to be a global agriculture engagement module. To assist with teachers and students with this curriculum a website was created to ensure that the lesson plans could be completed from home or in school by the teacher or by the researcher through different presentation formats that allow students to complete the curriculum anywhere.

Each module was broken up into different sections that break down the Global Citizenship Scale created by Morais and Ogden (2010) with adaptations to have a focus on agricultural education. In module one the objectives are to define global citizenship, describe the Sustainable Development Goals, and examine the importance of international agriculture. In this first module, students also complete the Global Citizenship Scale pretest before starting the curriculum. Once student’s complete module one, they progress to module two, their objective is to compare different agricultural systems and their crops that they grow, identify crops that are grown in Idaho and across the globe, and discover different international agriculture trades and how that impacts the U.S. and abroad. Module three was focused on the objectives to analyze local environments resources that are found in the area and identify agriculture trade in Idaho to the rest of the world. In module four, students will identify a country to research on agricultural commodities and farming systems and create an action plan for the selected community or country on the agricultural issues they may be facing. Module five’s objectives entail students to present their presentations to the class that

they worked on from module four and complete the unit by taking the Global Content Knowledge Assessment and Global Citizenship Scale Posttest.

### **Global Citizenship Unit Assessment- Global Competence Assessment**

The unit was presented with the same objectives through the different schools; therefore instruction was aimed at preparing the different sites for Global Content Knowledge Assessment. The unit was designed to assess students' understanding of the material that was presented to them and ask them open-ended and multiple-choice questions to see their opinions on the materials that they learned. Refer to Appendix F for Global Citizenship Assessment.

### **Recruitment**

In the initial round of data collection, a teacher presurvey instrumentation was administered to the state of Idaho's agriculture education high school teachers in the Spring of 2020 to collect demographics of potential high school agriculture programs that will be included in this study. The survey was separated into different sections to collect data from high school agriculture educators. The first section collected information on age, years of teaching, gender, and international experience. The second section was targeted at global agriculture concepts which asked teachers to define global agriculture and if there is an integration of global concepts into current instruction. The final section asked what resources these instructors need to apply global concepts into the classroom. After sending the presurvey to 157 high school agriculture educators, a response from 68 teachers were collected and analyzed.

From the information that was collected, this study will select six high school agricultural education programs in the Pacific Northwest who responded to the previous survey. They were each invited to participate in this study. In each school, all the students from selected class will participate in the study. Each of these sites received authorization for the research at the district level.

Mortality in educational research has been estimated to be as high as 50% (Jurs & Glass, 1971), however studies using intact agricultural education classrooms reported mortality rates at or below 40% (Myers, 2004; Thoron & Myers, 2011). To account for a loss of participants, the sample size adjusted to account for potential subject mortality and absences, especially during the presence of COVID-19.

### **Consent**

According to the University of Idaho Institutional Review Board (IRB), all human subjects in research are required to consent to participation. Special considerations when working with minors was taken into consideration during this study. This study was conducted under the oversight and guidance of the Institutional Review Board (IRB) at the University of Idaho. Teachers were sent electronic copies of the consent forms to distribute to parents along with the student assent forms. Both the parental consent and student assent forms included opt out options.

### **Participant Descriptions**

From round one of the study school and teacher demographics were collected from the survey sent to Idaho secondary agricultural educators to address objective one and two. A total of 44 (28%) secondary agricultural educators responded. While the response rate was



low, no inferences were made from this initial survey and the purpose of round one was to determine which teachers might be willing to participate in the experimental round.

Therefore, no threat to the overall study was posed by the low response rate. It is important to note that the description of the respondents from round one is in no way intended as a complete or representative description of the entire population. Demographic questions included gender, age, years teaching and community type. Those demographics and participants from this study is listed in Table 5.

Table 5

*Demographic Variables. Selected Teacher Characteristics (n = 44)*

Demographic Variables	<i>f</i>	%
<b>Age</b>		
Not Answered	3	5.6
20-25	7	13.0
26-30	6	11.1
31-35	5	9.3
36-40	1	1.9
41-45	7	13.0
46-50	4	7.4
51-55	6	11.1
56-60	3	5.6
61-65	2	3.7
<b>Sex</b>		
Male	23	42.6
Female	21	38.9
<b>Years Teaching</b>		
0-5	13	24.1
6-10	6	11.1
11-15	4	7.4
16-20	6	11.1
21-25	8	14.8
26-30	2	3.7
31-35	3	5.6
<b>Community</b>		
Rural	28	51.9
Suburban	11	20.4
Urban	4	7.4

School and teacher factors in this study play a role to the characteristics of individual students participating in the experimental treatments. A total of 120 students enrolled in secondary agricultural education classes in selected sites completed this study and were asked different demographic questions to determine information about the site and participants.

The information that was asked can provide insight into the overall makeup of the test site and participants. Idaho's classification of high school sizes ranges from 1A schools (159

students or less) to 5A (1280 students or more). This study included two 1A size schools, one 2A size school, two 3 A size schools, and one 4 A size school.

Table 6

<i>School Size for Selected Experimental Sites</i>						
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
Size of School	3A	2A	3A	1A	4A	1A

The secondary agricultural educators that participated in this study were allowed to select which class they taught to be in this study. From the schools that were selected, the classes consisted of students enrolled in Introduction to Agriculture, Agriculture Speech, Agriculture Business, Introduction to Animal Science, and Greenhouse. Those sites with the selected courses are in Table 7.

Table 7

<i>Classes enrolled in the Treatment</i>						
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
Class Enrolled for Treatment	Introduction to Agriculture	Introduction to Agriculture and Agriculture Speech	Agriculture Business	Introduction to Agriculture	Introduction to Animal Science	Introduction to Agriculture and Greenhouse

In this study, participants who completed this research were asked demographic questions in regard to their gender. Out of the sites that participated, the following information was collected from the different sites listed in Table 8. The participants in this study had a total of 48 students that identify as male and 72 students who identify as female.

Table 8

*Gender Demographic Information of Secondary Agricultural Education Students*

Characteristics	Site 1		Site 2		Site 3		Site 4		Site 5		Site 6	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Gender												
Male	10	37	25	64.1	2	40	1	8.3	6	33.3	4	21.1
Female	17	63	14	35.9	3	60	11	91.7	12	66.7	15	78.9
Prefer not to Respond	0	0	0	0	0	0	0	0	0	0	0	0

### Data Analysis

Data analysis was conducted in line with gathering data for each of the study objectives. Objectives one and two were analyzed using SPSS to report what secondary agricultural educators needed in terms of resources, how they defined global agriculture and identify global competencies that they need. The results were put into a Qualtrics format to calculate the information gathered from these teachers.

For the rest of the objectives, the pre and posttest questionnaire was graded and hand-scored by the researchers and entered an excel spreadsheet for the answers to be analyzed by SPSS. The mean standard deviation was calculated and reported to the teachers and the students to see how they felt about the course and how the teachers respond to cultural differences in their classrooms. A repeated measures t-test allowed a comparison of differences from pretest to posttest for student global competence. Participant demographics were calculated to allow describe means for global competence between independent variables.

## Summary

This study was designed to examine the effect of instructing a globalized agriculture curriculum on the global competency to secondary agricultural students in the Pacific Northwest. This section outlined the design of the study and experimental curriculum, along with the procedures, population, and description of both the participants and data analysis. This quasi-experiment utilized a single unit that allowed each student to experience the instruction at home or in school. The experimental curricula were developed to properly sequence the teaching of global citizenship to students. Sites that were selected were given the same training, lesson plans, unit plan, website, and resources to utilize in their classes. The Global Citizenship Scale and Global Citizenship Assessment were given to each student and demographic information was collected. The next chapter will discuss the findings related to the study and the data related to the study.

## **Chapter IV: Results and Findings**

The purpose of this study was to examine global citizenship factors including social responsibility, global competence, and global civic engagement in PNW secondary agricultural educators and secondary agricultural education students. The results of the research will allow for the state to explore adding international agriculture concepts into all classrooms that teach secondary agricultural education. The six objectives were identified to accomplish the purpose of this study and are outlined in the chapter.

### **Objective One: Identify Pacific Northwest secondary agricultural educators' definitions global agriculture**

Objective one allowed an examination into what agricultural educators currently know about global agriculture concepts and if they were incorporating those ideas in their classrooms prior to this study. For respondents to the first instrument ( $n = 44$ ), experience ranged from 0 to 35 years of teaching experience with a mean of  $M = 13.19$  ( $sd = 12.54$ ) years. Participating teachers came from a variety of locations with ( $n = 28$ ) from rural areas, ( $n = 11$ ) from suburban areas and ( $n = 4$ ) from urban areas, and ( $n = 1$ ) participant choosing not to answer. In the survey, participants had to identify their experience with international agriculture from different activities. From the list, ( $n = 4$ ) participated in a study abroad, ( $n = 13$ ) had traveled internationally on vacation, ( $n = 1$ ) participated as a chaperone on an international trip, ( $n = 9$ ) had other international experiences not included in the previous activities. Several of the respondents ( $n = 17$ ) indicated that they had never traveled internationally. When responding to what global content had been previously integrated into their classes, ( $n = 21, 47.7\%$ ) participants indicated they incorporated international agriculture

curriculum, ( $n = 18$ , 40.1%) participants do not participate in international agriculture concepts currently and ( $n = 5$ , 11%) participants did not respond.

Teachers identified resources that they needed to feel successful teaching global concepts and indicated a desire for lesson plans ( $n = 2$ , 4.5%), videos ( $n = 1$ , 2.27%), professional development ( $n = 2$ , 4.54%), assessments ( $n = 1$ , 2.27%) and labs ( $n = 1$ , 2.27%). 36 respondents noted that they did not know what they needed because they had limited knowledge about this subject matter.

Respondents in the first survey instrument were also asked to respond to two open-ended questions about global agriculture. Question one asked the participants to define global agriculture and question two asked the participants to indicate what they needed to be prepared to teach these subjects. Respondents varied in their definition, some of which are catalogued and taken verbatim in Table 9.

Table 9

*Teacher Response to the Prompt "Define Global Agriculture"*

- 
- "Global Agriculture is the study and practice of agricultural methods and cultures around the world
  - "The ability to produce food items not only for your country but also for export to other nations. The entire system of give and take (trade) relating to food in the world."
  - "Global agriculture is the interaction of agricultural industries outside of their local communities"
  - "Agriculture concepts and principles as they are implemented in individual countries and communities and how they impact our food supply and ability to sustain life."
  - "I see global agriculture as the world working together to feed the world- to make growing food and agricultural products more productive and more sustainable with less impact on the environment and maintaining genetic diversity of plants and animals around the world."
-

Participants were also asked to indicate what they needed to be successful when teaching global agriculture in their classrooms. Responses are listed in Table 10.

Table 10

*Teacher Responses to the Prompt “What Global Agricultural Resources Do You Need”*

- 
- “Examples of programs currently finding success in this area of global agriculture.”
  - “Scope and Sequence for integrating global agriculture content.”
  - “I need global agriculture experiences so that I can open instructor and students minds about global concepts.”
  - “Time and curriculum alignment to standards and where that actually fits into the standards.”
  - “How to teach American agriculture to the globe.”
- 

Overall, participants identified the things that they needed to be successful when looking into incorporating global agriculture concepts into their classrooms.

**Objective Two:**

**Identify global competencies Pacific Northwest secondary agricultural educators report teaching within current curriculum**

The initial survey instrument included a descriptive question to gather what concepts respondents were teaching to their students about global agriculture. The prompt read, “please share an example of how you have integrated global concepts into your classroom (lesson plans, resources used, contacts that you have already, etc.). From the 44 participants responded with their examples, as listed verbatim in Table 11.



Table 11

*Teacher Response to the Prompt “Share an example of how you have integrated global concepts into your classroom”*

---

- “Imports and Exports”
  - “World trade of agricultural products and how availability of different items can be affected differently around the world. We compare the U.S. population to the global population.”
  - “Big picture of global agriculture, sustainability, genetic diversity, and global relations.”
  - “Journey 2050 and talking about different types of agriculture around the world”
  - “Students research about different agriculture countries and find the top ten agriculture commodities that are produced there”
  - “Livestock students studied what other countries and religions ate. They had to host an ambassador dinner for a four-course meal that met everyone’s dietary needs. Also, understanding where crops were grown natively versus how technology has enhanced our ability to grow diverse commodities there.”
  - “Use multimedia to show how things are done in other countries”
  - “Norman Borlaug and other agricultural systems around the world.”
  - “Supply Chains around the world”
  - “I show the Holy Cow Video and use it to compare US agriculture versus the few examples showed in the video. We also talk about protein consumption in the US versus in other countries”
- 

### **Objective Three:**

#### **Describe Pacific Northwest agricultural education student’s Global Agriculture Content Knowledge Score**

The aim of objective three was to observe the lessons learned from the participants of the study and examine their growth global content knowledge over the course of the unit. Participants completed a Global Content Knowledge Assessment (Appendix F) as the summative unit assessment for the global agriculture curriculum. Scores for the assessment

are shown by site in Table 12. Respondent overall mean was  $M = 26.58$  ( $sd = 1.83$ ) for all students completing the study.

Table 12

*Descriptive Statistics for Global Competency Assessment (n = 135)*

Site	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
1	46	26.47	2.23	22	30
2	43	26.44	2.11	22	30
3	7	26.57	1.39	24	28
4	11	27.27	1.34	25	30
5	8	26.50	1.77	24	30
6	20	26.25	2.19	23	30
Total	135	26.58	1.83	23.33	29.66

Note: Students' scores are reported for all who completed the unit assessment, regardless of participation in the pretest and posttest global competency instrument. Scale for the assessment was 0 - 30.

#### **Objective Four:**

##### **Describe the Global Citizenship Score of Pacific Northwest agricultural education students before implementation of global competency curriculum**

The aim of objective four was to describe student Global Citizenship prior to the global agriculture curriculum. Participants completed the Global Citizenship Scale pretest on the first day before receiving unit instructions. A total of 120 reported scores ranged from 50 – 101 ( $M = 72.23$ ,  $sd = 9.05$ ) as displayed in Table 13.

Table 13

*Descriptive Statistics for Pretest Scores on Global Citizenship Scale*

	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
1	27	74.52	10.12	53	101
2	39	71.21	8.90	55	90
3	5	70.40	13.57	57	85
4	12	71.67	7.67	58	85
5	18	71.44	8.24	50	86
6	19	72.63	8.49	53	86
Total	120	72.2	9.04	50	101

Note: Students' scores are reported for all who completed the pretest to completion. Scale for the Global Citizenship Pretest was 0 - 125.

Global Citizenship is comprised of three components, global civic engagement (GCE), global competency (GC) and social responsibility (SR) (Morais & Ogden, 2010). For this study, the addition of Global Agricultural Engagement (GAE) was examined. Table 14 includes the scores for participants, by site across the three constructs of global citizenship. Scores for participants were  $M = 72.23$  ( $sd = 10.67$ ) for the entire scale,  $M = 15.34$  ( $sd = 3.45$ ) for social responsibility,  $M = 15.41$  ( $sd = 2.77$ ) for global competency,  $M = 13.78$  ( $sd = 2.70$ ) for global civic engagement, and  $M = 9.22$  ( $sd = 1.92$ ) for global agriculture engagement.

Table 14

*Descriptive Statistics for Pretest Scores on Global Citizenship Scale by Construct*

<u>Site</u>	<i>n</i>	<u>Total</u>		<u>SR</u>		<u>GC</u>		<u>GCE</u>		<u>GAE</u>	
		<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>
1	27	74.52	9.98	16.81	2.81	15.81	2.98	14.29	3.25	10.14	1.83
2	39	71.21	8.79	15.12	3.80	14.64	2.77	13.43	2.60	8.92	1.91
3	5	70.40	12.14	13	2.68	15	3.68	14.6	3.07	8.8	3.05
4	12	71.67	7.35	15.58	2.98	15.08	2.01	13.33	2.13	9.58	1.93
5	18	71.44	8.01	15.61	3.81	15.33	2.01	13.77	2.32	8.72	1.85
6	19	72.63	8.26	15.89	3.11	16.63	2.83	13.31	2.38	9.21	1.64
Total	120	72.23	10.67	15.34	3.45	15.41	2.77	13.78	2.70	9.22	1.92

Note: For the Pretest, students scores are reported for all who completed the pretest to completion. Scale for the Global Citizenship Pretest was 0 – 125. Scores for each construct have a maximum score of  $SR= 45$ ,  $GC= 45$ ,  $GCE= 20$   $GAE= 15$ .

### **Objective Five:**

#### **Describe the Global Citizenship Score of Pacific Northwest agricultural education students after implementation of global competency curriculum instruction**

The aim of objective five was to describe student scores on the posttest of the Global Citizenship Scale. In a designated time throughout the unit, students were asked to take the posttest through the Global Citizenship Scale after the instruction of the curriculum was complete from their secondary agricultural educators. Students were asked to take the Global Citizenship Scale posttest on the last day of instruction.

As the pretest asked about Global Citizenship, which is comprised of three components, global civic engagement (GCE), global competency (GC) and social responsibility (SR) (Morais & Ogden, 2010) with the addition of Global Agricultural Engagement (GAE) was tested to evaluate the unit and how student's beliefs and attitudes

changed over the treatment. Table 15 shows the posttest scores on the Global Citizenship Scale.

Participants who completed the posttest scores were examined by SPSS to identify the different Global Citizenship Scale scores from the different schools in the study. Total participants in the study ( $n = 115$ ) reported scores ranged from 0-103  $M = 74.51$  ( $sd = 12.480$ ). Scores on the global citizenship instrument following the global agriculture curriculum are shown in Table 15.

Table 15

*Descriptive Statistics for Post-Test on Global Citizenship Scale*

	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
1	27	75.67	8.26	57	90
2	39	74.92	17.75	0	103
3	5	-	-	-	-
4	12	71.50	7.30	59	84
5	18	75.11	8.79	62	93
6	19	73.37	10.32	56	91
Total	115	74.51	12.48	0	103

*Note:* Site three did not complete the posttest assessment. Students' scores are reported for all who completed the posttest to completion. Scale for the Global Citizenship Posttest was 0 – 125.

The scores from each of the sites were also examined by construct within the global citizenship scale. Scores for participants were  $M = 74.51$  ( $sd = 9.54$ ) for the entire scale,  $M = 16.44$  ( $sd = 3.56$ ) for social responsibility,  $M = 26.40$  ( $sd = 5.36$ ) for global competency,  $M = 18.54$  ( $sd = 3.98$ ) for global civic engagement, and  $M = 9.33$  ( $sd = 2.06$ ) for global agriculture engagement as stated in Table 16.

Table 16

*Descriptive Statistics for Posttest Scores on Global Citizenship Scale by Construct*

<u>Site</u>	<i>n</i>	<u>Total</u>		<u>SR</u>		<u>GC</u>		<u>GCE</u>		<u>GAE</u>	
		<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>
1	27	75.67	8.11	17.11	3.38	20.1	3.91	16.40	3.40	9.77	1.77
2	39	74.92	17.52	17.53	4.61	25.97	7.09	18.58	4.49	9.28	2.24
3	--	--	--	--	--	--	--	--	--	--	--
4	12	71.50	8.74	14.91	3.22	28.58	3.14	18.58	2.84	9.16	1.46
5	18	75.11	8.54	16.66	3.57	29.66	3.89	19.88	2.80	8.88	2.13
6	19	73.37	10.04	16	3.76	28.52	4.01	19.26	4.10	9.57	2.20
Total	115	74.51	9.54	16.44	3.56	26.4	5.36	18.54	3.98	9.33	2.06

Note: For the Posttest, students' scores are reported for all who completed the posttest to completion. Scale for the Global Citizenship Pretest was 0 – 125. Scores for each construct have a maximum score of  $SR= 45$ ,  $GC= 45$ ,  $GCE= 20$   $GAE= 15$ .

**Objective Six:**

**Examine differences in the Global Citizenship Scale Score of the Pacific Northwest secondary agricultural educators before and after completion of the global competency curriculum instruction**

Objective six was aimed to analyze the Global Citizenship Scale of PNW secondary agricultural education teachers after they taught the unit to their secondary agricultural education classrooms. The aim of objective six was to identify how teachers scored on a pre and posttest of the Global Citizenship Scale. In designated times throughout the unit, teachers were asked to deliver a pre and posttest through the Global Citizenship Scale to their students and complete the scale as well.

Respondent scores ( $n = 5$ ) ranged from 54 – 69 with  $M = 79$  ( $sd = 5.47$ ) as shown in Table 17. The teacher at site one did not complete either the pre or the posttest. Scores for participating respondents were ( $SR= 14.4$ ,  $sd = 3.87$ ), ( $GC = 17.8$ ,  $sd = 1.60$ ), ( $GCE = 15$ ,  $sd = 1.89$ ), and ( $GAE = 14.4$ ,  $sd = 1.09$ ).

Table 17

*Descriptive Statistics for Pretest Scores on Global Citizenship Scale Constructs*

<u>Site</u>	<u>Total</u>		<u>SR</u>		<u>GC</u>		<u>GCE</u>		<u>GAE</u>	
<i>n</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>	<i>M</i>	<i>sd</i>
5	79	5.47	14.4	3.87	17.8	1.60	15	1.89	12	1.09

Note: For the Posttest, teachers' scores are reported for all participants who completed the posttest to completion. Scale for the Global Citizenship Pretest was 0 – 125.

Secondary agricultural educators also completed a posttest after the delivery of the unit to their students. SPSS was used to identify the difference in the Global Citizenship Scale scores from the different schools that were in the study. There was a significant decrease of the participants that completed the Global Citizenship Scale posttest. Only one site completed the posttest that was asked from the researcher. The participant scored ( $M = 79$ ) on the posttest compared to ( $M = 76$ ) on the pretest. Due to the lack of completion from the teachers in this posttest, specific data cannot be concluded. However, it should be noticed that the Global Citizenship for Site 4 grew in the scale that was presented to them. The statistics for the posttest scores on the Global Citizenship scale was not created due to the lack of information that was presented to the researcher.

#### **Objective Seven:**

#### **Examine differences in Pacific Northwest agricultural education students amount of global citizenship before and after instruction of global agriculture curriculum.**

A paired samples t-test was created to analyze if there was a difference between the pretest and posttest scores for global citizenship for student exhibiting significant growth in the experiment. In Table 18, the results of that paired samples test indicate to us that there was significance of ( $\alpha = .008$ ) from this experiment.

Table 18

*Paired Samples Test of Pre and Post Global Citizenship Scale*

	<i>n</i>	<i>t</i>	<i>Sig</i>
Pre-Post	115	-2.71	.008

**Objective Eight:**

**Examine differences in Pacific Northwest agricultural education students amount of global citizenship before and after instruction of a global agriculture curriculum, based on demographic factors (gender, grade, and age).**

Objective eight was to describe the differences in PNW agricultural education student's global citizenship before and after instruction based on demographic factors that were identified in the Global Citizenship Pre and Post Test. The students that participated in this study identified their size of school, gender, grade, and age (Table 19).



Table 19

*Demographic Information of Secondary Agricultural Education Students*

	<u>Site 1</u>		<u>Site 2</u>		<u>Site 3</u>		<u>Site 4</u>		<u>Site 5</u>		<u>Site 6</u>	
	<u>3A</u>		<u>2A</u>		<u>3A</u>		<u>1A</u>		<u>4A</u>		<u>1A</u>	
Size of School	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Characteristic												
Gender												
Male	1	37	25	64.1	2	40	1	8.3	6	33.3	4	21.1
Female	0	63	14	35.9	3	60	11	91.7	12	66.7	15	78.9
Prefer not to Respond	1	0	0	0	0	0	0	0	0	0	0	0
Grade												
7 <sup>th</sup>	0	0	1	2.56	0	0	0	0	0	0	8	42.1
8 <sup>th</sup>	0	0	20	51.2	0	0	11	100	0	0	8	42.1
9 <sup>th</sup>	2	96.2	0	0	0	0	0	0	11	61.1	0	0
10 <sup>th</sup>	6	3.70	6	15.3	1	25	0	0	1	5.55	1	5.26
11 <sup>th</sup>	1		7	17.9	2	50	0	0	5	27.7	1	5.26
12 <sup>th</sup>	0		5	16.6	1	25	0	0	2	5.55	2	5.26
Total	0		39		4		11		19		20	
	2											
	7											
Age												
12	0	0	1	2.56	0	0	0	0	0	0	2	10.5
13	0	0	11	28.2	0	0	4	36.3	0	0	9	47.3
14	1	55.5	8	20.5	0	0	7	63.6	5	27.7	5	26.31
15	5	44.4	5	12.8	1	25	0	0	7	38.8	1	5.26
16	1	0	4	10.2	2	50	0	0	0	0	0	0
17	2	0	6	15.3	0	0	0	0	6	33.3	2	10.52
18	0	0	4	10.2	1	25	0	0	1	0	1	0
Total	0		39		4		11		19		20	
	0											
	2											
	7											

As described in the objective, the variable of grade was an important indicator for how the different participants scored on the Global Citizenship Scale based on the level that they are in school. The different sites were combined by grade to get the scores in Table 20. In this

study, secondary agricultural educators taught middle school students that consisted of seventh and eighth graders to high school level seniors. The totals for the 120 participants were  $M = 72.18$  ( $sd = 9.18$ ).

Table 20

*Grade Demographics versus Pretest on Global Citizenship Scale*

Gender	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
7 <sup>th</sup>	9	70.33	8.27	53	80
8 <sup>th</sup>	39	70.32	8.46	55	86
9 <sup>th</sup>	37	72.59	8.90	50	99
10 <sup>th</sup>	10	72.70	12.32	55	101
11 <sup>th</sup>	16	73.73	9.71	58	90
12 <sup>th</sup>	9	75.25	9.80	57	86
Total	120	72.18	9.18	50	101

The posttest of the Global Citizenship Scale was also assessed by participant's grade. The different sites again, were combined by grade to get the scores in Table 21. The totals for the 115 participants were  $M = 75.60$  ( $sd = 10.61$ ).

Table 21

*Grade Demographics versus Posttest on Global Citizenship Scale*

Gender	<i>n</i>	<i>M</i>	<i>sd</i>	Min	Max
7 <sup>th</sup>	9	73.33	11.04	56	91
8 <sup>th</sup>	39	76.33	11.76	56	103
9 <sup>th</sup>	37	74.16	7.83	57	90
10 <sup>th</sup>	10	74.56	15.70	49	97
11 <sup>th</sup>	16	75.00	10.84	52	93
12 <sup>th</sup>	9	85.86	7.40	73	93
Total	120	75.60	10.61	49	103

From these two charts, we can see that the mean of the participants that took this pre and posttest for the Global Citizenship Scale went up in scores, meaning, that they grew in Global Citizenship throughout the unit. In each of the grade levels, the scores also went up according to the different ages of the students from the pre and posttest as well. Results varied on the posttest with 12<sup>th</sup> graders having the highest mean of  $M = 85.86$  ( $sd = 10.61$ ) and 7<sup>th</sup> graders having the lowest mean of  $M = 73.33$  ( $sd = 11.04$ ). The Global Citizenship Scale mean based on grade are included in Table 19.

Gender was also a key component of this objective to see if the scores would be impacted in the pre and posttest. The participants were asked their gender in the beginning demographics if they felt like sharing that with the researcher. After the pretest was collected, gender was also evaluated to examine the differences in scores based on gender. From the respondent group, 72 were female (60%) and 46 were male (40%). Global Citizenship Scale scores for females was  $M = 72.50$  ( $sd = 8.57$ ) and  $M = 71.81$  ( $sd = 9.78$ ) for males. Global Citizenship Scale mean based on gender are included in Table 22.

Table 22

*Gender Demographics versus Pretest on Global Citizenship Scale*

Gender	<i>n</i>	<i>M</i>	<i>sd</i>	<i>SE</i>	Min	Max
Female	72	72.50	8.57	1.01	50	99
Male	48	71.81	9.78	1.41	53	101
Total	120	72.23	9.046	.826	50	101

After the posttest was collected, gender was also evaluated to examine differences in score based on gender. From the respondent group, 69 were female (60%) and 46 are males (40%). Global Citizenship Scale scores for females was  $M = 74.31$  ( $sd = 8.94$ ) and  $M =$

76.43 ( $sd = 12.17$ ) for males. Global Citizenship Scale mean based on gender are included in Table 23.

Table 23

*Gender Demographics versus Posttest on Global Citizenship Scale*

Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	Min	Max
Female	69	74.31	8.94	1.08	55	92
Male	46	76.43	12.17	1.79	49	103
Total	115	75.17	10.37	.971	49	103

From the tables above, there was a difference in the genders that were identified in the pre/posttest. In Table 23, females scored more on the pretest in terms of their means. When looking at the posttest, the males then scored more than the females in the means and the max scoring.

A paired samples t-test was created to analyze if there was a difference between the pretest and posttest scores in regard to gender for students exhibiting significant growth in the experiment. In Table 24, the results of that paired samples test indicate to us that there was significance of ( $\alpha = .69$ ) from the pretest.

Table 24

*Paired Samples Test of Gender Pre-Test Global Citizenship Scale*

Gender	<i>n</i>	<i>t</i>	<i>a</i>
Female	72	.41	.69
Male	48	.40	.69

In Table 25, the results of the paired samples test indicate to us that there was a significance of ( $\alpha = .18$ ) from the post test.

Table 25

*Paired Samples Test of Gender Post Test Global Citizenship Scale*

Gender	<i>n</i>	<i>t</i>	<i>a</i>
Female	69	-1.35	.18
Male	46	-1.36	.18

The last component of this objective was to describe scores on the global citizenship scale based on respondent age. Results on the pretest indicated that the mean varied based on age of student, with those 17 years old having the highest mean  $M = 75.07$  ( $sd = 7.76$ ) and those who were 13 years old having the lowest mean  $M = 69.54$  ( $sd = 8.21$ ). Global Citizenship Scale mean based on age are included in Table 26.

Table 26

*Student Age Demographics versus Pre-test on Global Citizenship Scale*

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	Min	Max
12	4	77.67	2.51	1.45	75	80
13	24	69.54	8.21	1.67	53	83
14	41	72.97	7.88	1.24	58	99
15	26	70.81	11.07	2.17	50	101
16	6	72.17	13.07	5.33	58	90
17	14	75.07	7.76	2.07	64	86
18	5	72.20	10.48	2.69	57	84
Total	120	72.23	9.04	.826	50	101

For the posttest, 18 years demonstrated the highest Global Citizenship Scale mean  $M = 89.75$  ( $sd = 3.59$ ) and those who were 15 years old had the lowest mean  $M = 72.88$  ( $sd =$

11.02). Global Citizenship Scale mean based on age are included in Table 23 from the posttest in Table 27.

Table 27

*Student Age Demographics versus Posttest on Global Citizenship Scale*

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	Min	Max
12	3	78.33	11.37	6.56	69	91
13	23	75.70	12.37	2.58	56	103
14	41	74.37	8.49	1.34	59	98
15	25	72.88	11.02	2.20	49	97
16	4	76.00	8.48	4.24	68	88
17	14	75.36	10.68	2.85	52	93
18	4	89.75	3.59	1.79	85	93
Total	115	75.17	10.37	.971	49	103

**Objective Nine:**

**Examine differences in the Pacific Northwest agricultural educators amount of global citizenship before and after instruction based on demographic factors (age and gender).**

Objective nine was aimed at identifying the differences the agricultural educators amount of global citizenship before and after instruction based on their demographic factors of age and gender. As described in the objective, the age is an important factor to consider when looking at the implementation of new materials to an established program. The different sites were combined to get the results in Table 28. The totals for the five participants were (*M* *Age* = 32.4).

Table 28

*Teacher Age Demographics versus Pre-Test on Global Citizenship Scale*

	<i>n</i>	<i>Age</i> <i>M</i>	<i>Scores</i> <i>M</i>
Total	5	32.4	79.0

For the participant that completed the posttest they received a ( $M = 76$  on their pretest and a  $M = 79$  on their posttest. With only one score from that one participant there is a lack of information presented to the researcher on these findings and there can be no conclusions decided with this study in regards to secondary agricultural educators growth in the Global Citizenship scale. The lack of difference in gender between the participants and the lack of information of their ages, the data is minimal and requires future investigation into examining the pre and posttest scores of the participants in future studies.

### Summary of Conclusions

This section has included the statistical analyses of data as related to the testing of the research question. The findings of this study include:

1. Statistically and practically significant differences were found between the different groups for the Global Citizenship Unit. There were differences between groups of students based on their age, grade, and gender, and their overall scores from the pre and posttest from the Global Citizenship Scale.
2. Change existed between the different sites based on the overall scores for Global Competency Assessment
3. Increased scores were noted for students from pretest to posttest on the global citizenship scale.

4. There needs to be more information gathered about the secondary agricultural educators to ensure that there is growth in the Global Citizenship Scale before there are conclusions

These findings hold many points for discussion and recommendation for practice and research for future studies. The following chapter will provide insight and additional discussion related to these findings.



## **Chapter V**

### **Summary, Conclusions, Implications, Recommendations**

It is the responsibility of the teacher educator to promote an environment which encourages multi-cultural appreciation (Ambre, 2006) and global citizenship with classrooms (Morais & Ogden, 2010). Agricultural education has a foundation built on the premise of experiential learning theory (Roberts, 2006), which provides students with the opportunities to engage in a truly involved learning cycle built on concrete experience, reflective observation, abstract conceptualization, and active experimentation. The question is, how do agricultural educators connect their classrooms to global agricultural and global citizenship education? The purpose of this study was to study the effect of instructing a globalized agriculture curriculum on global competency for secondary agricultural education students in the Pacific Northwest. At the outset of this study, this chapter will outline our methods, finding, and include discussion and implications of this study on practitioners and future research in global agricultural education.

### **Summary of Methods**

This study was conducted as a quasi-experimental examination of the factors related to student and educator learning on Global Citizenship lessons, Global Content Knowledge content assessments, and included one treatment of a unit designed by the researcher. With the design of this experiment, more elements in this study were a way to gather more elaborate and diverse data in the service of improving casual interference (Shadish, 2007). The dependent variables in this study were the change in the scores of the pretest to the

posttest on the Global Citizenship Scale designed by Morais and Ogden (2010). Independent variables included the student's age, year in school, and their demographic information.

Students enrolled in an agricultural education course at six Pacific Northwest high schools served as the population for this study ( $n = 120$ ). Through the treatment, a total of ( $n = 115$ ) students completed the pre and posttest with assent to participate in the study. Teachers had the opportunity to allow the students to take the course online with their assistance or in the classroom. Depending on the conditions of the different schools due to the COVID-19 pandemic, teachers had to choose the best option for them.

One five-day unit was created with the addition of lesson plans, a unit plan, resources, and a website to be delivered to the selected sites. The content area in the unit was designed to be an introductory course in the components of global citizenship which include global competency, social responsibility, and global civic engagement (Morais & Ogden, 2010). The unit was comprised of four lessons with the fifth lesson being the presentation day and the assessment to be completed by the participants. The pre and posttest would also be taken before and after the unit of instruction was completed. A group of experts in agricultural education, experiential learning theory, and curriculum planning assisted in the preparation and development of the treatment curricula that was to be delivered to the different sites.

The six sites that were selected were trained in the content that was to be delivered to their agricultural education students. The curriculum had different learning components such as articles, videos, worksheets, and website exploration that would allow for a cognitive sequence to be consistent across the six sites. Both pretest and posttests were scored for the teachers by the researcher to allow for consistent grading and accurate data to be collected.

The pretest and posttest scores for each student were compiled and used to determine a difference score for the unit.

To collect the information related to the independent variables, teachers provided the demographics of the school and students provided their demographics which included age, gender, and grade. In addition to the pre and posttest being offered through Qualtrics, teachers had the opportunity to print the scale to allow students that had a technology barrier to still participate in the course.

### **Summary of Conclusions**

There were four findings which emerged through the data analysis. These findings are all related to answering the research question:

What is the effect of instructing a globalized agriculture curriculum on the global competency of secondary agricultural students in the Pacific Northwest?

### **List of Findings**

1. Statistically and practically significant differences were found between the different groups for the Global Citizenship Unit. There were differences between groups of students based on their age, grade, and gender, and their overall scores from the pre and posttest from the Global Citizenship Scale.
2. Differences existed between the different sites based on the overall scores for Global Content Knowledge Assessment.
3. Increased scores were noted for students from pretest to posttest on the global citizenship scale.

4. There needs to be more information gathered about the secondary agricultural educators to ensure that there is growth in the Global Citizenship Scale before there are conclusions.

### **Finding One**

The first finding of this study was related to the testing of the Global Citizenship Unit. Upon conducting the unit between the six different sites there were multiple uses of the Global Citizenship Unit that was discovered in the reflections by the researcher. Several secondary agricultural educators stated that they used a variety of methods to deliver the instruction that was delivered to their students based off the different standards that their school districts had for them. Secondary agricultural educators used mixed methods to complete the unit that was given to them and assigned different parts of the pre/posttest and the modules as homework instead of in class instruction. Based on these violations from the secondary agricultural educators, this could cause for a lack of completion on the pre and posttest being collected and the loss of students that were not counted in the data.

There were differences in the sites in gender and age. There seemed to be a large difference between males and females in taking this pre and posttest. After completing a t-test for the different gender groups, there wasn't a large enough significance to prove that it was significant, but there were differences that were highlighted. In regard to gender, we did see changes in the groups as the age increased.

### **Finding Two**

The second finding of this study was differences found between the different sites in the Global Content Knowledge Assessment. Different sites used a variety of agricultural

education classes to teach this curriculum and there were different levels of grades that participated in this research. Although these differences were not drastic, the participants scored  $M = 26.58$  ( $sd = 1.83$ ) with a minimum score of 23.33 and a maximum score of 29.66. Between the different sites, the students could be compared by the different sizes of the school that they were in.

### **Finding Three**

Finding three is in regard to the scores that were collected from the pre/posttest of the Global Citizenship Scale. From the participants in this study, there was overall growth from the treatment that was given to the participants in the secondary agricultural education classrooms. In the reported scores between the different sites, there is evidence that the scores of the participants were significant due to the paired samples test of the overall pre/post Global Citizenship Scale that was taken by the different participants. It can be assumed that the participants gained global citizenship and global content knowledge during this unit.

### **Finding Four**

Finding four observes that there needs to be more information to be collected in regard to secondary agricultural educators' growth in the Global Citizenship Scale and in Global Content Knowledge. With the insufficient amount of data that was collected, there are no true conclusions that can be drawn in this research in growth or regression.

Based on the findings and the limitations and assumptions of the study design and resulting analysis, conclusions can be drawn from this study. These conclusions will serve as a guide to the discussion and implications throughout the rest of this chapter.

1. Teachers lack resources to integrate global concepts into their classrooms.

2. Students demonstrated global content knowledge following a global content curriculum.
3. Students' global citizenship increased from participation of a Global Citizenship instruction.

### **Discussion and Implications**

This study was designed as an exploratory examination of the implementation of Global Citizenship curriculum in secondary agricultural classrooms in the Pacific Northwest. By basing this understanding of how students learn from the pre/posttest, the unit, and the assessment, we can frame methods of instruction that may help secondary agricultural educators teach global agriculture content to their classrooms to connect their students to the world around them.

*Conclusion One: Teachers lack resources to integrate global concepts into their classrooms*

In this study, there was only one survey that was delivered to the secondary agricultural educators in Idaho to assess if a globalized curriculum was wanted or needed. Responses allow us to conclude there is a need for more resources to be created with a scope and sequence on how to best deliver global agricultural knowledge to secondary agricultural classrooms. As Merryfield (2000) stated, teacher educators note that they are not successfully preparing future teachers to engage and teach from a multi-cultural and global perspective.

Teachers that participated in the survey stated in objectives one and two their understanding of what global agriculture is and what they need in order to teach these

subjects. Participants from the survey stated that they needed a scope and sequence to integrate these global agriculture components, examples of other programs finding success in integrating these concepts, and last, the needed time to discover the curriculum alignment to the standards on where this would fit into their programs.

As stated in the literature review, teacher educators note that they are not successfully preparing future teachers to engage and teach from a multi-cultural and global perspective in their classrooms (Merryfield, 2000). PNW secondary agricultural educators do not have the right tools they need to be successful in integrating these different components within their classrooms. There needs to be more professional development to help these teachers implement globalized curriculum into their classes and to teach these concepts to their students to be successful in their future careers.

*Conclusion Two: Students demonstrated global content knowledge following a global content curriculum*

To assess different components of this research, a Global Content Knowledge Assessment was created to analyze the content that was gained by students throughout the course. As a component of quasi-experimental research, “adding more design elements is a way to gather more elaborate and diverse data from the participants in a study,” (p. 161). PNW secondary agricultural education students that were enrolled in the Global Agriculture Citizenship Unit were exposed to new topics regarding Morais and Ogden (2010) components of social responsibility, global competence, global civic engagement, and global agriculture engagement. Throughout the course, students could examine these different topics in detail through different activities that were on the website or delivered via classroom instruction from their secondary agricultural educators. There were several checkpoints along the way for

students to analyze their knowledge before the final Global Content Knowledge Assessment that was given to them through Google Forms.

In objective three, PNW secondary agricultural students' scores from their Global Content Knowledge Assessment were analyzed between the different sites. Although the different sites that were selected to participate in this subject matter were given different options on how to teach this course, the statistics of the students and their scores remained relatively high. With the scores averaging at ( $M = 26.58$ ) out of 30 points, the students within the different sites used their knowledge that they were building throughout the course to do well in the Global Content Knowledge Assessment.

Teachers were given a scope and sequence to teach this course which could have also contributed to the understanding of the material by their students. A scope and sequence was a component that was lacking in available curriculum that was needed for teachers to integrate these topics into their classrooms, as stated in Conclusion One. Students that participated in the unit grew in their Global Content Knowledge throughout the course as shown in their scores.

*Conclusion Three: Students global citizenship increased from participation of a Global Citizenship instruction*

The structure of the Global Citizenship Scale was tested by Morais and Ogden (2010) was designed to analyze different components where student growth can occur between social responsibility, global competence, global civic engagement, and global agriculture engagement within their instruction. PNW students demonstrated growth between the pre and



posttest with the Global Agriculture Citizenship unit treatment in between the pre and posttest.

The Global Agriculture Citizenship unit was designed to fit the different components of the Morais and Ogden (2010) scale to be included in the study. The students that participated in the course had topics that identified with the different components of the Global Citizenship Scale. Through the course, there were opportunities for growth to occur with students investigating into their own communities on how they could make a difference within their reach. Through the different components of the Global Citizenship Scale and the unit, students were then asked to take the same pretest which was now the posttest to reanalyze their growth in the subject matter that was given. There was evidence that there was a significance between the pre and posttest that allows for researchers to conclude that there was overall growth from the treatment that was delivered to PNW secondary agricultural students.

### **Recommendations for Practice**

Based on the findings and conclusions of this study, there are several recommendations for practice which can be made for secondary agricultural educators:

1. There should be a creation of a scope and sequence of a global agriculture focused curriculum in PNW secondary agricultural education classrooms.
2. Teachers need to implement a globalized curriculum in their programs using the Global Citizenship Scale to identify growth in their students.

3. Teachers need to create a sequence of curriculum delivery with secondary agricultural students to ensure that information can be scaffolded for lessons learned throughout the programming.
4. Assessment of a global agriculture instruction unit should include, but is not limited to, the Global Citizenship Scale and the Global Content Knowledge Assessment to examine growth within unit.

### **Recommendations for Future Research**

The results of this study lead to additional areas for research related to the concepts of Global Citizenship and global agriculture curriculum development.

1. This study should be replicated in all Pacific Northwest states through a quasi-experiment in other areas of global agriculture and Global Citizenship to assess what resources are still lacking in the implementation of a globalized curriculum.
2. A replication of this quasi-experiment should be conducted using alternative sequences within the unit to determine what effects the altering sequences has for students in regard to Global Content Knowledge and the Global Citizenship Scale. There is potential for growth to focus on specific pathways within an agricultural education program to create content specific globalized agriculture resources.
3. The unit of instruction for this study should be expanded upon with different components of laboratory research, different student learning opportunities, and hands on opportunities to connect with a students' community around them for growth within the Global Citizenship Scale.

4. An examination of the global agriculture content that is specific to the PNW identified by agricultural educators, should be researched to create specific content that is focused in secondary agricultural classrooms.

### **Concluding Remarks**

“Through social, cultural, political, and economic integration, we are now connected to one another in ways, both simple and complex, never before experienced” (National Research Council, 2009, p. 15). Effective teaching in secondary education incorporates pedagogical strategies that create hospitable classroom climates supporting diverse learning processes and cultural understanding (National Research Council, 2009). As Green and Olsen (2008) noted in their research, true internationalization of the curriculum is not as easy as creating a new class or inserting reading or assignments into existing courses. For teachers to truly internationalize their curriculum, it will require new pedagogies which could include experiential, service, and collaborative learning (Green & Olson, 2008). We need these classrooms to continue to grow our future leaders and workforce in the agricultural industry. We need to allow the time for more professional development and planning strategies of the implementation of a globally concentrated curriculum in the PNW to help teachers be successful and understand the topics that they will be delivering to their classrooms.

This study was conducted with a primary target. The target of this research was to examine and investigate what best strategies and resources could be created to help those who give their lives every day to our students, our secondary agricultural educators. The importance of connecting our students to their community and expanding that connection to the world around them impacts their current and future livelihoods. This study with its

resources, curriculum, and methodology has the potential to help the Pacific Northwest become connected to the global agriculture world that is around them. It will not only impact the secondary agricultural educators that participated in this study, but their colleagues and students for years to come.

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## Appendix A: Developing Global Competence Lesson Plan Ideas

**Purpose:** The course that will be designed to teach a globalized curriculum for Idaho secondary agricultural education students will be based off the global competence model by Boix-Mansilla and Jackson (2011) below. A weeklong course that is designed to have a pre and a post-test to assess for learning on both the teacher and the student.

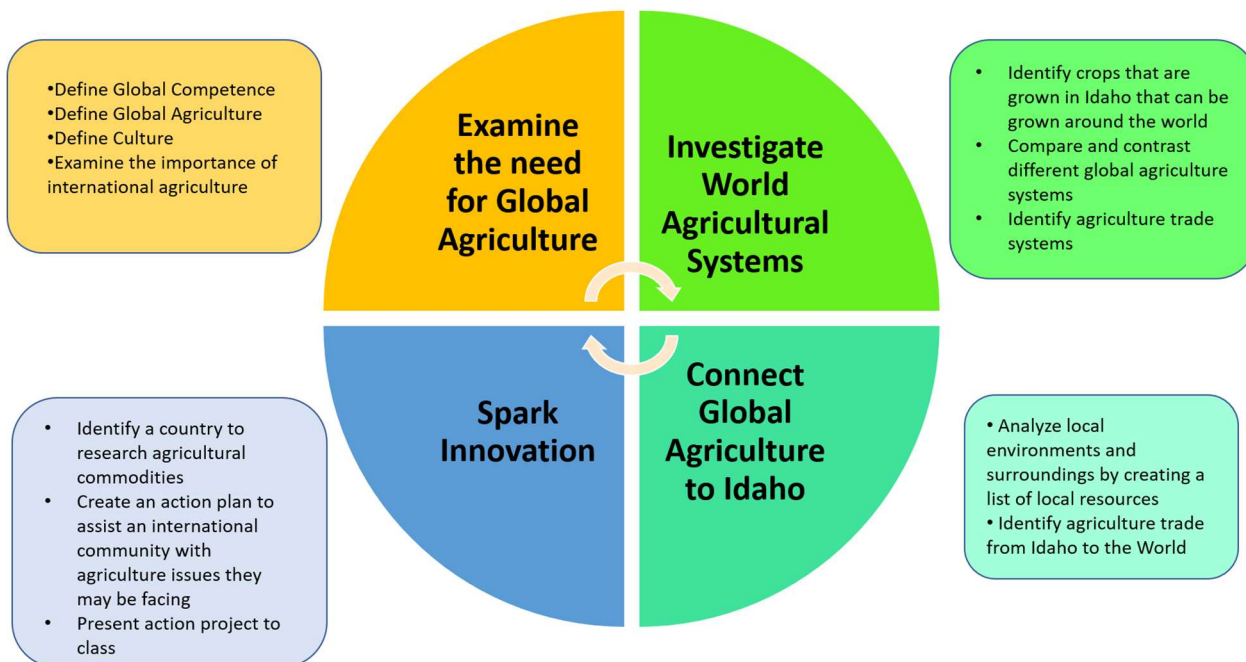
Each lesson will have specific objectives that will be covered in the class that will have worksheets or questions that students will answer. Each lesson will have a reflection question that students can reflect upon the class and what they learned.

### Model of Global Competence from Boix-Mansilla and Jackson (2011):



Boix-Mansilla & Jackson 2011

### Model of Global Competence from Boix- Mansilla and Jackson ADAPTED:



**Lesson One:**

<b>Unit Title:</b> Global Agriculture
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<b>Lesson Title (Essential Question):</b> Examine the Need for Global Agriculture
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<b>Instructional Time Needed For Lesson:</b> 50 minutes
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**Objectives –**

1. Define Global Competence
2. Define Global Agriculture
3. Define Culture
4. Examine the importance of international agriculture

<b>Key/Essential Vocabulary:</b> Global competence, global agriculture, culture
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<b>Need/Situation:</b> To create a basic foundation of what global agriculture is and how it can be applied on the context relating to Idaho secondary agricultural classrooms.
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**References of External Resources:****Tools, Equipment, and Supplies:**

- A worksheet for students to take notes and write down definitions
- Reflection Notebook
- PowerPoint

**Pre-Class Setup:**

- None

**Interest Approach: “Global Agricultural Pre-Assessment” Bellwork (5 min activity)**

On the board/powerpoint, ask your students to create a KWL paper. (K= What do you know, W= What do you want to know, L= what have you learned). They will keep this paper throughout the unit to write down what they learned.

<b>Summary of Content and Teaching Strategies</b>
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**Objective 1:** Global Competence (10 minutes)

“Knowledge, skills, and dispositions needed to function successfully in the globalized world. Included in these competencies are the ability to speak, understand, and think in a foreign language, knowledge of the global system and world history, geography, and other global issues such as health and economics, and knowledge of other cultures (Gardner, 2004; Reimers, 2009; Zhao, 2009).”

This will be broken up in a PowerPoint.

Teacher: What key phrases stick out to you? Why is knowing about the world important? Why do you think it is important for YOU to have an understanding the world around you?

**Objective 2:** Global Agriculture (10 minutes)

**Activity:** The teachers and students will be provided with a map of the world and several different fruits, and vegetables. The students will have a competition to see if they can identify the different locations of the crops to the right regions of the countries where they could be grown.

A map key will be on the PowerPoint and provided for the teacher.

Teacher: From there, the teacher and the students will have the opportunity to create a shared definition of what global agriculture is. They can write this on their KWL chart.

**Objective 3:** Global Culture (10 minutes)

With the map that is provided, students will be provided with different cultural cards with and agriculture commodity. Students will have the opportunity to swap cards and fill out a worksheet about different cultures and their commodities.

**Objective 4:** Examine the importance of international agriculture (10 minutes)

Students will have 5 minutes to look at the chart that they filled out and discuss with their teams a reason why global agriculture is important to the world and to their communities. They can be posed with the question on why it matters for Idaho farmers too.

**Review of Lessons Objectives/Check out the Door : (5 min activity)**

Students will have a ticket out the door to answer the reflection question in the journal and then fill out their KWL charts to be checked by their teacher.

**Reflection Question:** After examining culture, do you feel as if your community has a set of cultural expectations? What does that look like? How do you play a role in your community in agriculture or elsewhere?

## Lesson Two:

**Unit Title:** Global Agriculture

**Lesson Title (Essential Question):** Investigate World Agriculture Systems

**Instructional Time Needed For Lesson:** 50 minutes

**Objectives –**

1. Identify crops that are grown in Idaho that are also grown around the world
2. Compare and contrast different global agriculture systems

3. Identify agriculture trade systems
<b>Key/Essential Vocabulary:</b> Global agriculture, Agricultural Systems, International Trade
<b>Need/Situation:</b> To identify why agriculture students need to be aware of how their place impacts others and the world (wheat farmers on the Palouse, etc..)
<b>References of External Resources:</b>
<b>Tools, Equipment, and Supplies:</b>  <b>Pre-Class Setup:</b> <ul style="list-style-type: none"> <li>• Comparison Chart for students to fill in</li> <li>• Video or reading of another culture doing agriculture differently (Moon Cycle, Harvesting, Water Issues, etc.)</li> <li>• Crop readings that are grown in Idaho and other countries (specific examples identified with readings or pictures)</li> </ul>
<b>Interest Approach: Bellwork (5 min activity)</b> Ask students to get out their reflection journals and a piece of paper for a comparison chart Students will be asked to do a into activity (to be determined) Maybe identify crops that are grown in Idaho that can be grown all over the world... the person with the most amount of ones wins?

<b>Summary of Content and Teaching Strategies</b>
<p><b>Objective 1:</b> Identify crops that are grown in Idaho that are also grown around the world  PowerPoint will be provided with backgrounds on different agricultural systems, photos, and explanations.</p> <p><b>Objective 2:</b> Compare and contrast different global agriculture systems (20 minutes)  Students will be tasked with identifying from the powerpoint different agricultural systems and comparing and contrasting with things that they have seen. Students will practice public speaking with their group and presenting the similarities and differences that they see.</p> <p><b>Objective 3:</b> Identify agriculture trade systems (10 minutes)  Video on agricultural trade:  <a href="https://www.ted.com/talks/sara_menker_a_global_food_crisis_may_be_less_than_a_decade_away/transcript?language=en">https://www.ted.com/talks/sara_menker_a_global_food_crisis_may_be_less_than_a_decade_away/transcript?language=en</a>  There will be a worksheet with this activity for students to talk about</p>
<b>Review of Lessons Objectives: (10 min activity)</b>



**Reflection Question:** After learning about different agriculture systems, do you see similarities in your town? Can any of these practices be implemented in your area or not?

### Lesson Three:

**Unit Title:** Global Agriculture

**Lesson Title (Essential Question):** Connect Global Agriculture to Idaho

**Instructional Time Needed For Lesson:** 50 minutes

**Objectives –**

1. Analyze local environments and surroundings by creating a list of local resources
2. Identify agriculture trade from Idaho to the World

**Key/Essential Vocabulary:**

**Need/Situation:**

**References of External Resources:**

**Tools, Equipment, and Supplies:**

- CO2 Impacts to the world
- Trade Activity (Monopoly with Ag?)

**Pre-Class Setup:**

- 

**Interest Approach: “Agricultural Pre-Assessment” Bellwork (5 min activity)**

### Summary of Content and Teaching Strategies

**Objective 1:** Analyze local environments and surroundings by creating a list of local resources

Students will be given a country to identify their local resources, make a track sheet of their local resources, and present them to different groups

**Objective 2:** Identify agriculture trade from Idaho to the World

Students will be participating in a Agriculture World Trade Monopoly game (cards are included)

**Review of Lessons Objectives: (5 min activity)**

**Reflection Question:** After learning about your surroundings and local resources, what change would you like to be seen made worldwide?

**Lesson Four:**

**Unit Title:** Global Agriculture

**Lesson Title (Essential Question):** Take Action

**Instructional Time Needed For Lesson:** 50 minutes

**Objectives –**

1. Discuss healthy communication techniques and presentation styles
2. Examine the problem of explanations of the “Single Story”
3. Research a country that is different from their own and describe their agriculture systems
4. Present ideas and posters to their groups to teach about the area that they researched
5. Create a VoiceThread or a FlipGrid about Global Competence and the Country that they selected
6. Watch and comment on other participants projects

**Key/Essential Vocabulary:** Communication, Single Story, Global Competence

**Need/Situation:**

**References of External Resources:**

**Tools, Equipment, and Supplies:**

- Access to FlipGrid
- Posters for the students?

**Pre-Class Setup:**

- 

**Interest Approach: “Agricultural Pre-Assessment” Bellwork (5 min activity)**

What are some ways that you have done effective communication in the past? How did that work for you? List out approaches that you have done in the past

**Summary of Content and Teaching Strategies**

<p><b>Objective 1:</b> Discuss healthy communication techniques and presentation styles Present the PowerPoint about different communication techniques</p> <p><b>Objective 2:</b> Examine the problem of explanations of the “Single Story” Present YouTube video: <a href="https://www.youtube.com/watch?v=D9Ihs241zeg">https://www.youtube.com/watch?v=D9Ihs241zeg</a> Reflection;</p> <ul style="list-style-type: none"> <li>- Where have you seen this impact your life?</li> <li>- Does your community present a single story or have you portrayed it as one?</li> </ul> <p><b>Objective 3:</b> Research a country that is different from their own and describe their agriculture systems</p> <p><b>Objective 4:</b> Present ideas and posters to their groups to teach about the area that they researched</p> <p><b>Objective 5:</b> Create a VoiceThread or a FlipGrid about Global Competence and the Country that they selected</p>
<p><b>Review of Lessons Objectives: (5 min activity)</b> <b>Reflection Question:</b> After watching another students FlipGrid, do you think that you can promote change in your community? Do you think that it will be hard or easy? Do you think that your chapter can develop these goals or ideas into the school?</p>

### Lesson Five:

<b>Unit Title:</b> Global Agriculture
<b>Lesson Title (Essential Question):</b> Evaluation/Reflection
<b>Instructional Time Needed For Lesson:</b> 50 minutes
<p><b>Objectives –</b></p> <ul style="list-style-type: none"> <li>- Analyze the effectiveness of the course and offer feedback to the researcher</li> <li>- Complete the Post- Test and Reflection</li> </ul>
<b>Key/Essential Vocabulary:</b> Global Agriculture
<b>Need/Situation:</b>
<b>References of External Resources:</b>
<p><b>Tools, Equipment, and Supplies:</b> <b>Pre-Class Setup:</b></p>

- 

**Interest Approach: “Agricultural Pre-Assessment” Bellwork (5 min activity)**

### **Summary of Content and Teaching Strategies**

**Review of Lessons Objectives: (5 min activity)**

**Reflection Question:** After learning about another culture, do you think that your perceptions on your own culture have changed over your lifetime? As you reflect on your childhood to now, what ways have you changed overtime that have created who you are today?

## Appendix B: Adapted Morais & Ogden (2010) Global Citizenship Scale

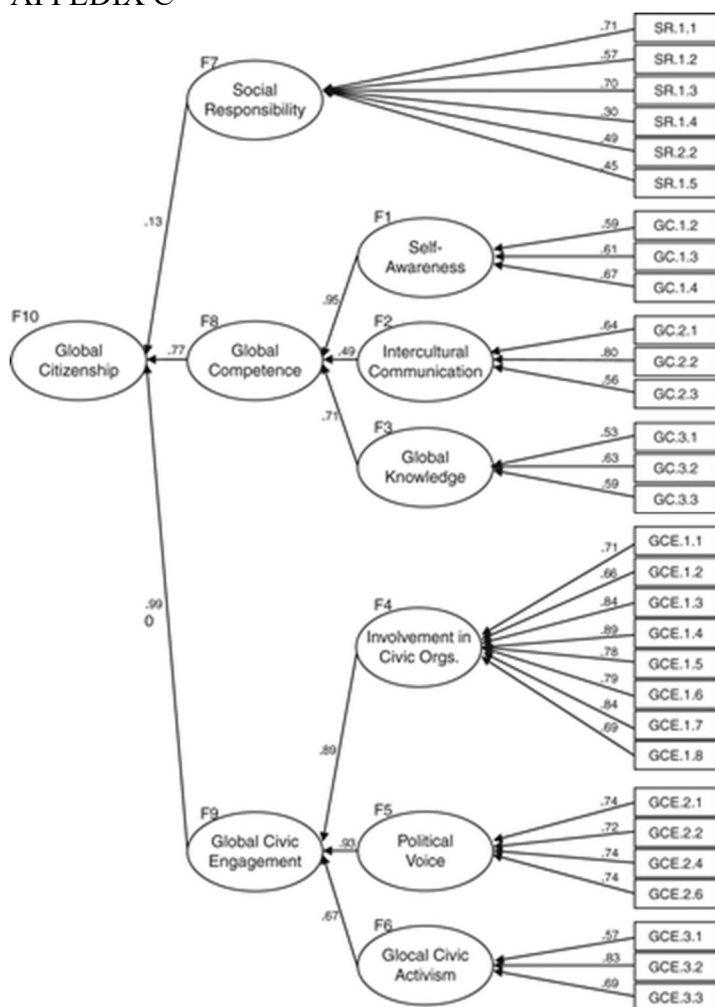
This assessment will be administered to the students before and after the global agriculture unit, along with the global agriculture test after the unit's completion, to assess students beliefs regarding their global citizenship. As mentioned before, the adapted section from this scale will be used to assess student's desire to integrate more in global agriculture learning.

The scale will range from 1=Strongly disagree to 5= Strongly agree.

Social responsibility (SR) global justice and disparities	
SR. 1.1	I think that most people around the world get what they are entitled to have
SR. 1.2	It is OK if some people in the world have more opportunities than others
SR. 1.3	I think that people around the world get the rewards and punishments they deserve
SR. 1.4	In times of scarcity, it is sometimes necessary to use force against others to get what you need
SR. 1.5	The world is a generally fair place
SR. 1.6	No one country or group of people should dominate and exploit others in the world
Social responsibility: altruism and empathy	
S.R. 2.1	The needs of the worlds' most fragile people are more pressing than my own
S.R. 2.2	I think that many people around the world are poor because they do not work hard enough
S.R. 2.3	I respect and am concerned with the rights of all people, globally
Social responsibility: global interconnectedness and personal responsibility	
S.R. 3.1	Developed nations have the obligation to make incomes around the world as equitable as possible
S.R. 3.2	Americans should emulate the more sustainable and equitable behaviors of other developed countries
S.R. 3.3	I do not feel responsible for the world's inequities and problems
S.R. 3.4	I think in terms of giving back to the global society
Global Competence (GC): Self-Awareness	
G.C. 1.1	I am confident that I can thrive in any culture or country
G.C. 1.2	I know how to develop a place to help mitigate a global environmental or social problem
G.C. 1.3	I know several ways in which I can make a difference on some of this world's most worrisome problems
G.C. 1.4	I am able to get other people to care about global problems that concern me
Global competence: Intercultural Communication	
G.C. 2.1	I unconsciously adapt my behavior and mannerisms when I am interacting with people of other cultures
G.C. 2.2	I often adapt my communication style to other people's cultural background
G.C. 2.3	I am able to communicate in different ways with people from different cultures
G.C. 2.4	I am fluent in more than one language
G.C. 2.5	I welcome working with people who have different cultural values from me
G.C. 2.6	I am able to mediate interactions between people of different cultures by helping them understand each other's values and practices

Global Competence: Global Knowledge	
G.C. 3.1	I am informed of current issues that impact international relationships
G.C. 3.2	I feel comfortable expressing my views regarding a pressing global problem in front of a group of people
G.C. 3.3	I am able to write an opinion letter to a local media source expressing my concerns over global inequalities and issues
Global Agriculture Engagement	
G.A.E 1.1	Over the next 6 months, I will plan to do volunteer work to help individuals
G.A.E 1.2	Over the next 6 months, I will look at incorporating global agriculture programming into my chapter (fundraiser, FFA Knowledge Event, etc.)
G.A.E 1.3	If at all possible, I will buy fair trade or locally grown products or brands
G.A.E 1.4	I will boycott brands or products that are known to harm marginalized global people and places
G.A.E 1.5	Over the next 6 months, I will educate others about global agriculture and how it impacts us locally

## APPEDIX C



## Appendix C: Global Competency for Agricultural Educators and Students Informed Consent for Child Assent

Olivia Murphy-Sweet, from the Department of Agricultural Education and Extension is conducting a research study. The purpose of the research is to study and identify the social responsibility, global competence, and global civic engagement that secondary agricultural educators have to teach global agriculture instruction in their classroom. You are being asked to participate in this study because you have been identified as a student in a high school agricultural class who has a teacher that has identified that they would like to be in this study.

Your participation will involve you participating in a curriculum that your high school agricultural teacher will deliver to you based on Global Citizenship. You will be asked to take a pre and posttest and participate in a global knowledge assessment. The pre and posttest is designed to analyze if global citizenship was gained over the course of teaching on the part of the student. The global knowledge assessment will be analyzed to see if knowledge was gained over the course of the unit. Both of these assessments will not be used to count as your grade in the class but will be used by the researcher to see if knowledge was gained. The pre and posttest should take about 15 minutes to complete and the global knowledge assessment should take about 25 minutes to complete. The pre and posttest includes questions such as asking you and your opinions on global knowledge, disparities in the world, different global agriculture engagement opinions, and many more. You will also complete a global knowledge assessment that will ask you questions based on the curriculum that your teacher taught you. Your involvement in the study is voluntary, and you may choose not to participate. You can refuse to answer any of the questions at any time. There are no names or identifying information associated with your responses. There are no known risks in this study, but some individuals may experience discomfort or loss of privacy when answering questions. Data will be collected and analyzed by the researchers and will be used for thesis writing and a journal article. No identifiers will be used in the data collection.

The findings from this project will provide information on how to best implement global agriculture curriculum in the state of Idaho to high school agricultural educators. If published, results will be presented in summary form only through a thesis that will be created by the researcher.

If you have any questions about this research project, please feel free to call Olivia Murphy-Sweet at 717-645-6217 or at [oliviam@uidaho.edu](mailto:oliviam@uidaho.edu). If you have questions regarding your rights as a research subject, or about what you should do in case of any harm to you, or if you want to obtain information or offer input you may call the Office of Research Assurances at (208) 885-6340 or [irb@uidaho.edu](mailto:irb@uidaho.edu).

Thank you for your participation in this study.

By checking yes, you understand that your responses could be included in a summarized data about global competencies in agriculture.

YES

NO



## Appendix D: Global Citizenship Pre-Test

Thank you for your participation in the Global Citizenship Scale assessment. Your scores do not count for a grade, but will be used to analyze your self assessment about gained global competence after completing the Global Agriculture Curriculum delivered by your agricultural education teacher.

Please answer these questions with honesty and with your first instinct as you read through them.

If you have any questions or concerns, please do not hesitate to reach out to me at [oliviam@uidaho.edu](mailto:oliviam@uidaho.edu)

Thank you for taking this survey! I look forward to seeing your responses soon.

Olivia Murphy-Sweet

Information and link to informed consent link from IRB can be found on the next page.

To ensure that we can do a pre and post test to look at the skills that you gained, please answer the demographic questions as best as possible. For your confidentiality, once you have completed both pre and post tests, we will be deleting your personal information.

First and Last Name:

How old are you:

What school do you go to?

What class are you taking this unit in?

What grade are you in?

In this section, you will be analyzing your social responsibility in regards to global justice and disparities, altruism and empathy, and global interconnectedness and personal responsibility.

**You will rate your answers on a scale that ranges from 1= Strongly Disagree to 5= Strongly Agree.**

As mentioned earlier, do your best to answer **honestly and with your first instinct** you have as you read through the questions. Mark **X** with your responses.

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
In times of scarcity, it is sometimes necessary to use force against others to get what you need					
Over the next 6 months, I will contact a newspaper or radio to express my concerns about global environmental, social, or political problems					
I am able to write an opinion letter to a local media source expressing my concerns over global inequalities and issues					
Over the next 6 months, I will look at incorporating global agriculture programming into my chapter (fundraiser, FFA Knowledge Event, etc.)					
I will boycott brands or products that are known to harm marginalized global people and places					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I think that most people around the world get what they are entitled to have					
I know several ways in which I can make a difference on some of this world's most worrisome problems					
The world is a generally fair place					
I think that people around the world get the rewards and punishments they deserve					
I am able to get other people to care about global problems that concern me					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I unconsciously adapt my behavior and mannerisms when I am interacting with people of other cultures					
I am informed of current issues that impact international relationships					
I know how to develop a place to help mitigate a global environmental or social problem					
I often adapt my communication style					

to other people's cultural background					
Over the next 6 months, I will participate in a campus forum, live music, or theater performance or other event where young people express their views about global problems					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I am able to communicate in different ways with people from different cultures					
Over the next 6 months, I will contact or visit someone in government to seek public action on global issues and concerns					
I feel comfortable expressing my views regarding a pressing global problem in front of a group of people					
If at all possible, I will buy fair trade or locally grown products or brands					
I will deliberately buy brands and products that are known to be good stewards of marginalized people and places					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
Over the next 6 months, I will educate others about global agriculture and how it impacts us locally					
It is OK if some people in the world have more opportunities than others					
Over the next 6 months, I will plan to do volunteer work to help individuals					
Over the next 6 months, I will express my views about international policies on a website, blog or chatroom					
I think that many people around the world are poor because they do not work hard enough					

**Thank you for your participation!**

### **Appendix E: Global Citizenship Post-Test**

Thank you for your participation in the Global Citizenship Scale assessment. Your scores do not count for a grade, but will be used to analyze your self assessment about gained global competence after completing the Global Agriculture Curriculum delivered by your agricultural education teacher.

Please answer these questions with honesty and with your first instinct as you read through them.

If you have any questions or concerns, please do not hesitate to reach out to me at [oliviam@uidaho.edu](mailto:oliviam@uidaho.edu)

Thank you for taking this survey! I look forward to seeing your responses soon.

Olivia Murphy-Sweet

Information and link to informed consent link from IRB can be found on the next page.

To ensure that we can do a pre and post test to look at the skills that you gained, please answer the demographic questions as best as possible. For your confidentiality, once you have completed both pre and post tests, we will be deleting your personal information.

First and Last Name:

How old are you:

What school do you go to?

What class are you taking this unit in?

What grade are you in?

Gender:

<input type="checkbox"/>	Female	<input type="checkbox"/>	Male	<input type="checkbox"/>	Non-Binary	<input type="checkbox"/>	Prefer not to say
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Please read each question carefully and report how you feel about this course by checking the circle that best corresponds with your current thinking.

**You will rate your answers on a scale that ranges from 1= Strongly Disagree to 5= Strongly Agree.**

As mentioned earlier, do your best to answer **honestly and with your first instinct** you have as you read through the questions. Mark **X** with your responses.

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I have found the course to be intellectually challenging and stimulating.					
I have learned something which I consider valuable.					
My interest in the subject has increased as a consequence of this course					
I have learned and understood the subject matter in this course					
The course has adequately addressed current developments in the field					
Readings and assignments have contributed to my developing an appreciation for the subject					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
In times of scarcity, it is sometimes necessary to use force					

against others to get what you need					
Over the next 6 months, I will contact a newspaper or radio to express my concerns about global environmental, social, or political problems					
I am able to write an opinion letter to a local media source expressing my concerns over global inequalities and issues					
Over the next 6 months, I will look at incorporating global agriculture programming into my chapter (fundraiser, FFA Knowledge Event, etc.)					
I will boycott brands or products that are known to harm marginalized global people and places					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I think that most people around the world get what they are entitled to have					
I know several ways in which I can make a difference on some of this world's most worrisome problems					
The world is a generally fair place					
I think that people around the world get					



the rewards and punishments they deserve					
I am able to get other people to care about global problems that concern me					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I unconsciously adapt my behavior and mannerisms when I am interacting with people of other cultures					
I am informed of current issues that impact international relationships					
I know how to develop a place to help mitigate a global environmental or social problem					
I often adapt my communication style to other people's cultural background					
Over the next 6 months, I will participate in a campus forum, live music, or theater performance or other event where young people express their views about global problems					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
I am able to communicate in different ways with people from different cultures					
Over the next 6 months, I will contact or visit someone in government to seek public action on global issues and concerns					
I feel comfortable expressing my views regarding a pressing global problem in front of a group of people					
If at all possible, I will buy fair trade or locally grown products or brands					
I will deliberately buy brands and products that are known to be good stewards of marginalized people and places					

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
Over the next 6 months, I will educate others about global agriculture and how it impacts us locally					
It is OK if some people in the world have more opportunities than others					

Over the next 6 months, I will plan to do volunteer work to help individuals					
Over the next 6 months, I will express my views about international policies on a website, blog or chatroom					
I think that many people around the world are poor because they do not work hard enough					

**Thank you for your participation!**

**Appendix F: Global Content Knowledge Assessment**

This assessment will be taken by the students at the end of the unit through Qualtrics.

1. Name
  
2. School
  
3. To have an in depth knowledge about the world, you are demonstrating that you are...?
  - a. Smart
  - b. Well Read
  - c. Globally Competent
  - d. Socially Responsible
  
4. Is grazing an input, process, or output
  - a. Input
  - b. Process
  - c. Output
  
5. When someone is speaking out about global issues on a public forum in a community, they are demonstrating what?
  - a. Social Responsibility
  - b. Global Civic Engagement
  - c. FFA Public Speaking
  - d. Global Competence
  
6. Is the length of a growing season an input, process, or output?
  - a. Input
  - b. Process
  - c. Output
  
7. When speaking about social responsibility, what are things that should be discussed about?
  - a. FFA Livestock, feeding habits, and laws regarding animal rights
  - b. Environment, Society, Other People

- c. The importance of understanding how different cultures work
8. What are two issues that are facing the agricultural industry globally?
9. Are potatoes an input, process, or output?
- a. Input
  - b. Process
  - c. Output
10. When looking at the seed Vault, why do seeds have to stay in this environment?
11. What similar crops are grown in Idaho and also in different countries?
- a. Potatoes
  - b. Wheat
  - c. Cassava
  - d. Pineapples
  - e. A&B
12. List two foods from the “Where in the World” food activity and where it is from?
13. In what ways can you get involved with Global Agriculture in your community?
14. What is one thing that you learned during this unit?