

THE PROCESS OF LITERACY INTEGRATION IN AGRICULTURE
CLASSROOMS: A GROUNDED THEORY

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DEDICATION

To Alissa, Craig, Monika, and Pj, thank you for believing in me before I believed in myself. You encouraged me to pursue a path I never would have thought possible. You made this happen. To all the agriculture teachers who make a difference in the lives of countless students each and every day. Thank you.

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The Process of Literacy Integration in Agriculture Classrooms: A Grounded Theory

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ABSTRACT

The purpose of this grounded theory study was to conceptualize how agriculture teachers' beliefs and literacy experiences translate into classroom practices. The emergent theme focused on teacher belief drivers which started the process of literacy integration. Once they felt driven to include literacy, the participants worked through a variety of considerations. At times, the participants felt it was necessary to seek out additional support structures to enable the integration process. Incorporating literacy was not free of challenge or struggles, but the participants had sustaining experiences to help them stay motivated during the integration process. A substantive level theory was developed to illustrate the relationships between these themes and the literacy integration process. Future research should explore if typical agriculture teachers follow a similar process and if additional supports help increase integration.

CHAPTER 1: INTRODUCTION

Background and Setting

High quality literacy skills are needed to be successful in and out of the classroom (Castleton, 2002; Heller & Greenleaf, 2007; Moje, Young, Readence, & Moore, 2000; Pearson, 2013; Schmoker, 2011; Shanahan & Shanahan, 2008). Reading activities are often the cornerstones of academic instruction (Schmoker, 2011). Outside of the classroom, literacy skills are needed to enter the job market. Reading and comprehending a job application is the first step, while writing skills are needed to complete the application process (Tannock, 2001). Literacy skills lead to a better quality of life. Literacy rates are somewhat correlational to income levels, associated with better health, avoidance of the criminal justice system, and increased social and civic engagement (Heller & Greenleaf, 2007; Shanahan & Shanahan, 2008). The world is changing, and those changes emphasize the need for literacy skills. The information age allows people to access and publish more information than ever before (Gallagher, 2009; Moje et al., 2000; Peery, 2009). Citizens of the information age will need literacy skills to fully function in modern society.

Reading, writing, speaking, and listening are the components of literacy (Coleman & Pimentel, 2012; Krajcik & Sutherland, 2010; Moje, 1996; Moje, 2008). While literacy is made up of four components, it serves a broader purpose. Literacy is how we make connections and develop a deeper understanding of the world around us (Heller & Greenleaf, 2007; Moje, 2008; Moje et al., 2000; Pearson, 2013). At its heart, literacy allows us to communicate with each other and absorb meaning from the larger context.

Literacy instruction at the elementary and secondary levels differs. As children begin school, teachers focus on skills needed to read (letter identification, phonics, etc.), a process called learning-to-read (Chall, 1983). Eventually, the emphasis shifts from learning how to read and write, to using reading and writing as part of the learning process (Chall, 1983; Schmoker, 2011). Content area teachers, including agriculture teachers, regularly include literacy activities as part of their classroom (Buehl, 2011; Hasselquist & Kitchel, 2016b; Moje, 1996). Acquiring new information from lectures, textbooks, and other sources of texts (Buehl, 2011; Moje et al., 2000), engaging in group discussions or preparing a written report (Schmoker, 2011) are just a few ways students use literacy skills to learn in the secondary classroom. Despite the importance of literacy skills for effective instruction (Schmoker, 2011), very few content area teachers focus on helping secondary students develop them (Pearson, 2013).

Historically, literacy research has skewed heavily towards reading (Pearson, 2013). Emphasizing one component over the others, is not representative of the true nature of literacy and provides researchers with an incomplete picture. Literacy's components are interconnected and interdependent processes (Aulls, 1985; Goodman & Goodman, 1983; Mayo, 2000) and should be treated as such (Holt & Vacca, 1981). It has been argued (Pearson, 2013) the disproportionate emphasis on reading influenced how literacy skills were viewed under No Child Left Behind (NCLB).

Under NCLB literacy practices, specifically reading and writing, were considered stand-alone activities and not an embedded part of curriculum (Gallagher, 2009; Pearson, 2013). The stand-alone nature meant literacy practices were done devoid of a larger context, because of this, reading scores increased while comprehension of complex texts

decreased (Gallagher, 2009; Heller & Greenleaf, 2007), leaving many high school graduates unprepared for the literacy demands of the post-secondary world (Pearson, 2013; The National Commission on Writing for America's Families, 2004). Common Core State Standards (CCSS) were developed in part to combat this disturbing trend (Pearson, 2013).

CCSS have placed a strong emphasis on teaching literacy authentically as an embedded part of all content areas, making every teacher a teacher of literacy (Buehl, 2011; Coleman & Pimentel, 2012; Lesley, 2014; Pearson, 2013). More importantly, all areas of literacy are included and valued (Buehl, 2013). Helping students become college and career ready is an important goal of education (Buehl, 2011), and CCSS has developed standards and guidelines to inform literacy practice across all subject areas (Buehl, 2013; Coleman & Pimentel, 2012). In the past, education has valued quality literacy skills by placing a heavy emphasis on them during high-stakes testing (Au, 2007). Now, in addition to testing, CCSS has highlighted the importance of literacy skills through the development of standards for all teachers.

While CCSS may be relatively new to education, the idea of every teacher being a teacher of literacy is not. The phrase “every teacher a teacher of literacy” was introduced by William Gray in 1937 (Moje et al., 2000). Unfortunately, it does not mean content area teachers have been receptive to the idea of including literacy in their classrooms. Shanahan and Shanahan (2008) reported secondary content area teachers believed literacy skill development should occur outside their classroom, typically at the elementary and middle school levels. Pre-service teachers also believe literacy skill development was not needed in the secondary setting (Hall, 2005; Spitler, 2011). Not

including a literacy focus can have negative consequences for both students and the teacher.

Students view each class (math, science, etc.) as its own separate entity, and fail to transfer literacy skills learned in one class to the next (Moje, 1996). Without a reminder about how to interact with a text, students may struggle. Furthermore, each content area has its own vocabulary students are expected to use (Fisher & Frey, 2009). Students may struggle with the technical vocabulary since it is not a part of typical conversation (Fang, 2006). Habitual student literacy struggles have the potential to become a challenge for the teacher, possibly leading to a negative teacher literacy attitude. Which in turn, could potentially exacerbate the student problems, since students are known to be influenced by (Phelps, 2005) and internalize teacher literacy attitudes (Adams & Pegg, 2012; Moje, 1996; Park & Osborne, 2006a). Even if teachers possess a positive attitude regarding literacy, it may not be enough to change practice.

Agriculture teachers have generally positive attitudes regarding literacy and its place in agricultural education (Hasselquist & Kitchel, 2016b), but it does not lead to higher literacy implementation rates (Hall, 2005; Hasselquist & Kitchel, 2016a; Park & Osborne, 2006b). The lack of adoption by middle and secondary teachers may be one explanation elementary students have improved their reading scores while high school scores have stagnated (Shanahan & Shanahan, 2008). All teachers must find a way to become teachers of literacy (Buehl, 2011; Coleman & Pimentel, 2012; Lesley, 2014; Moje et al., 2000; Pearson, 2013; Schmoker, 2011).

Pre-service agriculture teachers are very resistant to the idea of including literacy in the content area (O'Brien & Stewart, 1990). However, some type of attitudinal change

must occur since a majority of agriculture teachers use literacy on a regular basis (Hasselquist & Kitchel, 2016b). Pre-service teachers receive training in pedagogy and technical content knowledge (Darling-Hammond & Bransford, 2005; Roberts & Kitchel, 2010). These courses are designed to develop the skills needed to be successful as classroom teachers. While content knowledge and pedagogical skills are important for teachers, the importance of receiving literacy training may be overlooked.

Specifically, Park and Osborne (2007) found only 39.2% of agriculture teachers had completed college coursework related to content area literacy. While the percentage has increased (Hasselquist & Kitchel, 2016b) it still means there is a portion of in-service agriculture teachers with no formal coursework in literacy skills. Individuals who have completed literacy-related coursework used more strategies when compared to non-completers (Park & Osborne, 2006a). However, it was determined coursework was not influential in how often literacy activities are used (Hasselquist & Kitchel, 2016a). Assessment of student literacy skills has been a concern for content area teachers in the past (Baker et al., 2008; Hand & Prain, 2002; Park & Osborne, 2005; Park & Osborne, 2006a). The lack of confidence is particularly problematic. If agriculture teachers are more confident in their abilities to assess student skills, specifically writing, they are more likely to use literacy assignments (Hasselquist & Kitchel, 2016a). It is not entirely known what causes agriculture teachers to move from literacy resistance to literacy integration.

Teachers grow and learn through a variety of experiences over the course of their careers (Darling-Hammond & Bransford, 2005; Eraut, 1994; Shulman & Shulman, 2004). Formal learning opportunities include professional development experiences and

continuing education classes (Greiman, 2010), with most teacher growth occurring through on the job learning (Eraut, 1994). Teachers may not be able to articulate the full depth of their knowledge (Schon, 1983), but they understand what works in their classrooms (Shulman, 1987). Teacher maxims are developed out of the wisdom of practice (Shulman, 1986). Maxims are practices teachers know work in the classroom setting, but may lack a research backing (Shulman, 1986).

When teachers enter the classroom, they rely heavily on the apprenticeship of observation to guide their practice (Eraut, 1994; Hammerness et al., 2005; Shulman, 1990). They reflect on how they were taught as students, and integrate those same teacher behaviors into their lessons. Eventually, they begin to focus on student-centered concerns, which helps them understand the complexities of teaching and leads them to seek out new information (Hammerness et al., 2005). Changing practice is challenging and support is beneficial (Eraut, 1994). Teachers may seek out a community of practice (Schon, 1983) and other supports to help them make the transition to become a teacher of literacy.

Statement of the Problem

To continue to prepare college and career ready graduates, content area teachers must incorporate literacy skills (Pearson, 2013; Schmoker, 2011). Post-secondary students are expected to possess the necessary literacy skills needed (Pearson, 2013), with many of them noting the skill development began in high school (Goldschmidt, 2014). When employees lack literacy skills, businesses suffer and spend billions of dollars on remedial literacy instruction (Daniels, Zemelman, & Steineke, 2007; Peery, 2009). To

overcome workplace deficiencies and to meet CCSS, content area teachers must incorporate literacy activities.

Not all in-service teachers have completed literacy related college coursework (Hasselquist & Kitchel, 2016a, 2016b; Park & Osborne, 2007). Those who have are more likely to use a wider variety of reading strategies and have better attitudes (Park & Osborne, 2007), which it does not necessarily mean higher implementation rates (Hall, 2005). To fill in knowledge gaps, teachers turn to professional development activities (Greiman, 2010). While a majority of agriculture teachers have completed professional development, it was not shown to be a statistically significant influencer over specific classroom practices (Hasselquist & Kitchel, 2016a). However, previous studies have indicated literacy focused professional development does, in fact, make a difference (Graham & Perin, 2007; Santamaria et al., 2010). Professional development is only one possible explanation of why some agriculture teachers become teachers of literacy. To meet the needs of in-service teachers and their students, research must be undertaken to better understand the process of literacy incorporation.

Need for Study

Literacy skills are fundamental for a positive academic and life experience (Schmoker, 2011; Shanahan & Shanahan, 2008). All content area teachers are now charged with developing literacy skills needed to be successful within their disciplines (Buehl, 2011; Moje, 2008; Pearson, 2013). Despite its importance, relatively little is known about literacy practices in agricultural classrooms. Furthermore, current literacy studies of agriculture teachers show some significant changes from previous research

(Hasselquist & Kitchel, 2016b). One speculation for this divergence is the adoption of CCSS and its impact on agriculture teachers (Hasselquist & Kitchel, 2016b). Research must be undertaken to better understand the current climate of literacy and literacy integration in agricultural education.

This study could help provide a foundational framework to improve classroom literacy practices of in-service agriculture teachers. Identifying beneficial experiences would help inform future professional development activities. Future literacy-related professional development programs could be structured around findings discovered in this study. Professional development has a long history of helping in-service teachers improve their practices (Greiman, 2010). This study could open the door to understanding the types of activities and experiences pre-service teachers need to incorporate literacy into their classrooms. To maximize classroom literacy incorporation, professional development and pre-service teacher training programs must be informed by research.

Purpose & Research Questions

The purpose of this grounded theory study was to conceptualize how teacher beliefs and experiences related to literacy translates into classrooms practices. The central question that guided the study was: How do agriculture teachers become teachers of literacy?

Definition of Terms

Agricultural Education: Systematic instruction to increase agricultural literacy and/or prepare students for agricultural careers or professions (Phipps, Osborne, Dyer, & Ball, 2008).

Common Core State Standards: A K-12 educational initiative detailing the literacy and mathematical skills students should possess at each grade level.

Content Area: Formally known as subject matter. Courses focusing on a specific and unique domain of knowledge (e.g. biology class) (Darling-Hammond & Bransford, 2005).

Content Area Literacy: ability to use literacy skills to learn new information in a content area (McKenna & Robinson, 1990).

In-service teachers: Individuals currently employed as teachers within a school system.

Informational texts: Traditionally called nonfiction texts, the goal is to transmit and/or explain important information not entertain. Some examples include: textbooks, magazines, and newspaper articles (Wilhem, Smith, & Fredricksen, 2012).

Literacy: Using one or more of the components (reading, writing, speaking, listening) to make connections and develop a deeper understanding of the surrounding world (Moje, 2008).

Literacy activities: Activities related to reading, writing, speaking, listening, and/or vocabulary development (Buehl, 2011).

Professional development: Activities designed to increase a teacher's knowledge and skill related to pedagogy, technical content information, or any other aspect related to the classroom instruction and/or student achievement (Greiman, 2010; Guskey, 2000).

Tier 2 Vocabulary Words: Terms occurring frequently in typical language situations, but may not be familiar to everyone (e.g. suffice) (Fisher & Frey, 2009).

Tier 3 Vocabulary Words: Terms occurring only in specialized contexts, like content area class (e.g. cambium) (Fisher & Frey, 2009).

Basic Assumptions

1. Literacy activities occur in agriculture classrooms.
2. The teachers in this study have some degree of effective incorporation of literacy in their agriculture classroom.
3. Teachers are able to recognize at least part of the literacy activities they utilize in their classrooms.

4. Teachers are able to identify the types of professional development activities they have experienced.
5. The participants were thoughtful and honest in their interviews and reflection.
6. The classroom observations were an accurate reflection of what typically transpires in the participants' classrooms.

Limitations

1. This study focused on a group of agriculture teachers in the state of Missouri. These findings may not be representative of experiences had by other teachers in different states or even other agriculture teachers within Missouri.
2. The influence of the researcher may have caused the participants to alter their typical curriculum to include literacy activities. Probing interview questions were used to help develop an understanding of other participants integrated literacy into their classrooms and what played a role in it.
3. The participants may not recognize all the different ways they incorporate literacy activities. Field observations were used to help gain a richer understanding of the literacy practices utilized by each participant.
4. Teachers continue to grow and change over the course of their career. Sometimes reflection over a long period of time is needed to develop new understanding or increase knowledge. Participants may have recently had a literacy experience that will have a profound impact on their literacy practices but have not had adequate time to process the new information. To account for this, reflective and probing

interview questions were used to help teachers reflect on experiences, including the most recent ones.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

The purpose of a literature review in grounded theory research is to develop background knowledge related to the data (Corbin & Strauss, 2015). Furthermore, a review of literature enables the researchers to more easily identify connections between concepts and assist in the identification of various aspects of a concept (Corbin & Strauss, 2015). The purpose of this study was to conceptualize how teacher beliefs and experiences related to literacy translate into classroom practices. To gain the necessary background, information regarding literacy, classroom practices, and teacher learning were explored.

Literacy

What is Literacy?

Literacy skills are the foundation of a successful life in and out of the classroom (Shanahan & Shanahan, 2008). Literacy rates are somewhat correlational to income, lead an engaged citizenship, avoidance of the criminal justice system, and better health (Heller & Greenleaf, 2007; Shanahan & Shanahan, 2008). People mistakenly limit literacy to one or two of its components, traditionally either reading or writing. It should be noted literacy is made up four interconnected and interdependent processes: reading, writing, speaking, and listening (Aulls, 1985; Coleman & Pimentel, 2012; Goodman & Goodman, 1983; Holt & Vacca, 1981; Krajcik & Sutherland, 2010; Mayo, 2000; Moje, 1996; Moje, 2008). Furthermore, literacy allows us to comprehend and function in society (Heller & Greenleaf, 2007; Moje, 2008; Moje, Young, Readence, & Moore, 2000; Pearson, 2013).

Without quality literacy skills, a person's ability to successfully function in society is severely impaired (Shanahan & Shanahan, 2008).

Historically, literacy research has been incomplete. Previous researchers did not view literacy as a holistic approach. They placed a disproportionate emphasis on reading, while neglecting the other areas of writing, speaking, and listening (Pearson, 2013).

Literacy and literacy skill development is an interwoven process between oral communication, reading, and writing (Aulls, 1985; Elbow, 2004; Goodman & Goodman, 1983; Hall, 2005). To solely focus on one area (e.g. reading) does not provide an accurate picture of the scope of classroom literacy practices (Pearson, 2013).

Additionally, a larger portion of reading research was conducted using an experimental approach and failed to focus on reading integration (O'Brien, Stewart, & Moje, 1995).

Elementary students have traditionally been the focal point of reading research, neglecting the complexity of middle and secondary literacy (O'Brien et al., 1995).

Literacy Instruction throughout School

Literacy instruction in early elementary focuses on the tasks of learning-to-read and learning-to-write (Chall, 1983). In the learning-to-read process, the primary focus is on the development of skills of decoding, confirmation, and fluency, the components needed to recognize and read words (Chall, 1983). In the same manner, learning-to-write focuses on the skills needed for students to physically write and construct sentences and paragraphs. By mid-elementary school, students are transitioning from learning-to-read and learning-to-write to reading-to-learn and writing-to-learn (Chall, 1983). Read- and write-to-learn activities ask students to interact with informational texts to develop

subject matter knowledge (Harvey, 1998). Students are given textbooks and other informational texts and told to read them, but are rarely taught *how* to read them. Reading different types of text requires different types of skills (Buehl, 2011; Pearson, 2013; Schmoker, 2011). The same can be said of writing. Many students are tasked with writing an informational text, but are rarely given authentic reasons to use or direct instruction on how to research, write, edit, and present the project (Harvey, 1998; Wilhelm, Smith, & Fredricksen, 2012). This type of transition without proper support and continued guidance has been associated with the 4th grade slump (Chall, 1983; Schmoker, 2011).

The 4th grade slump occurs when students who have previously loved to read lose interest and may even develop a strong dislike of reading. They may also begin to dislike writing (Dorfman & Cappelli, 2009; Harvey, 1998; Wilhelm et al., 2012). Students feel frustrated with their lack of skill and ability surrounding informational texts (Buehl, 2011) and these tasks becoming work without meaning and purpose. Literacy skills needed to be successful in a content class, such as science, differ greatly from those needed in an English/Language Arts (ELA) course. For example, the different styles of writing. ELA courses may encourage students to engage in more creative styles, which seems to work against the goal of scientific writing: evidence based scientific reasoning (Keys, 1999). Even grammatical structures and vocabulary terms of content areas may be difficult for students to read, comprehend, and use correctly (Fang, 2006; Snow, 2010).

Students do not automatically adapt literacy practices to meet their academic surroundings (Moje, 1996). Each content area (e.g. math, science, agriculture) has a unique way they organize, approach, and utilize information (Buehl, 2011; Lesley, 2014). Additionally, each area has its own style of reading, writing, communication, and specific

vocabulary students are expected to use (Adams & Pegg, 2012; Allington, 2002; Fang, 2006; Moje, 1996; Moje, 2008; Park & Osborne, 2005; Snow, 2010). It is often (and incorrectly) assumed students possess and are able to select the appropriate literacy skills for each content area (Buehl, 2011). Unless content area teachers take the time to model and develop the literacy skills needed, a majority of students will not develop them independently. When students develop literacy skills in one class, they fail to transfer them to another since students view each class as a separate entity (Moje, 1996; Moje, 2008).

When content area teachers fail to model and develop the literacy skills needed to be successful, student frustration can grow and compound over their academic career. It was best described it through the eyes of a teacher:

Talk to any kindergarten teacher. Ask her about her students' attitudes during reading time, and it is likely she will tell you about her students' enthusiasm. Then, ask a fifth-grade teacher the same question. You'll likely receive a mixed response. Finish your field research by again asking a twelfth-grade teacher the same question, and note his quick exasperation. This unfortunate shifting of reading attitudes- from enthusiasm to indifference to hostility- is a pattern (Gallagher, 2009, p. 3).

Resistance to literacy permeates classrooms, especially at the middle and secondary levels, and can lead to a reluctance to incorporate literacy skills (Chambers Cantrell, David Burns, & Callaway, 2008; O'Brien & Stewart, 1990). Student frustration with poor or below average literacy skills can potentially lead to dropping out. Early research found poor performance and a dislike of school were cited as the primary reason 36% of

high school dropouts left school (Rumberger, 1987). Failing school continues to be a factor in high school dropout rates (Bridgeland, Dilulio, & Morison, 2006).

Literacy in Secondary Schools

Literacy at the middle and secondary levels traditionally focused on remediation and skill building, but has gradually shifted to a holistic approach of integration (O'Brien et al., 1995). Content teachers expect their students to use appropriate literacy skills within the classroom; however, they often fail to support the development of those skills (Buehl, 2011; Gallagher, 2009). Common reasons for the neglect of literacy skill instruction include time constraints (Baker et al., 2008; Moje, 2008; Phelps, 2005) and lack of confidence (Hall, 2005; Park & Osborne, 2007a; Park & Osborne, 2006b; Santamaria et al., 2010).

The development of literacy skills is not a solitary activity. Students need support from their teachers throughout the process (Heller & Greenleaf, 2007; Pearson, Moje, & Greenleaf, 2010) as they grapple with complex informational texts, new vocabulary, and work to become literate within a discipline (Allington, 2002; Buehl, 2011; Fang, 2006; Gallagher, 2009; Heller & Greenleaf, 2007; Pearson et al., 2010; Shanahan & Shanahan, 2008; Snow, 2010). Being literate is all based on context (Heller & Greenleaf, 2007). Students who lack the appropriate literacy skills in a specific context are not considered literate. It is necessary for all teachers to work towards the development of literacy skills in their content area classrooms (Jewett, 2013).

Common Core State Standards (CCSS) and state standards inspired by CCSS have made literacy skill instruction and integration a priority for all teachers (Buehl, 2011; Coleman & Pimentel, 2012; Jewett, 2013; Lesley, 2014; Pearson, 2013). While the

idea of all teachers being teachers of reading is not new (Moje et al., 2000), it is the first time all teachers, regardless of content area or grade level, have standards to guide their practice (Pearson, 2013). Previously, No Child Left Behind (NCLB) viewed literacy, specifically reading and writing, as a standalone activity devoid of content context (Gallagher, 2009; Pearson, 2013). The lack of content context was problematic. It led to increased scores of basic reading skills but also an overall decrease in students' abilities to read, write, and comprehend complex texts (Gallagher, 2009; Pearson, 2013; Pearson et al., 2010). The nature of standardized tests emphasizes basic reading, not the comprehension skills needed for complex material (Pearson et al., 2010). Additionally, the lack of context may be why students have "proficient" or "at grade level" literacy scores but lack the skills needed to fully comprehend informational texts found throughout content area classrooms (Heller & Greenleaf, 2007).

Literacy skills help people communicate within a content area and with industry professionals (Park, 2011). When content area teachers integrate disciplinary literacy skills into their classrooms, they help students develop the unique vocabulary and language skills they are expected to use within the discipline (Adams & Pegg, 2012; Fang, 2006; Park, 2011; Snow, 2010). Content area teachers are expected to help students develop both literacy and disciplinary literacy skills (Buehl, 2011). Content area literacy strategies are general strategies that can be applied to all texts to improve general comprehension and skills (Brozo, Moorman, Meyer, & Stewart, 2013; Buehl, 2011; Shanahan & Shanahan, 2008). Whereas disciplinary literacy focuses on developing skills needed for a specific discipline or content area (Brozo et al., 2013; Buehl, 2011; Shanahan & Shanahan, 2008). For example, in a science classroom, students are asked to

“think like a scientist” and use the necessary literacy skills to develop and defend a fact-based argument (Buehl, 2011; Cervetti & Pearson, 2012; Osborne, 2010). CCSS challenges students to think critically within each discipline (Dougherty Stahl, 2014).

Having a two pronged approach - focusing on both general and disciplinary literacy - is important for several reasons. It helps ensure all students are developing the basic literacy skills they need for college and career readiness (Buehl, 2011) and are able to maximize their classroom learning experiences (Schmoker, 2011). Specifically, asking students to write can lead to increased retention (Reaves, Flowers, & Jewell, 1993), content knowledge, and metacognition (Bangert-Drowns, Hurley, & Wilkinson, 2004). By using discipline specific strategies or skills, students recognize not all types of texts are approached and utilized in the same manner. Using only general literacy strategies can give students the misconception that all texts are the same (Heller & Greenleaf, 2007). Finally, asking students to use literacy skills in a variety of ways forces students to think and consider the content in new and different ways (Newell, 1984).

Literacy and Content Area Teachers

Agricultural education has limited literacy-related research, with a majority of it occurring before the adoption of CCSS (Hasselquist & Kitchel, 2016c). There is a wide array of subjects and courses taught within agricultural education (Edwards & Thompson, 2010). Some courses closely align with science content while others align with a Career and Technical Education (CTE) approach. For example, a welding class would align with a traditional CTE approach and a Veterinary Science class would align with a science approach. Additionally, a teacher’s personal philosophical approach to

agricultural education influences how material is taught (Rice & Kitchel, 2016). Due to wide variety in philosophical approaches to agricultural education, it is important to conduct literacy research with agriculture teachers. However, since agricultural education lacks its own well-developed body of literacy research, science and CTE research informed this study. It is important to note science has a much deeper literacy research base draw from and was used more frequently.

Challenge of Incorporating Literacy

Incorporating literacy skills has been notoriously difficult in the secondary setting (O'Brien et al., 1995). Traditionally, literacy instruction at the secondary level has focused on remediation and basic skill building (O'Brien et al., 1995). Content area teachers often view literacy instruction as something that should occur someplace else, specifically in elementary schools (Shanahan & Shanahan, 2008). Focusing on the remediation of basic skills only helps further this perception. Asking secondary teachers to incorporate literacy comes with the historical baggage of remediation which can promote negative teacher attitudes (Moje et al., 2000). Furthermore, the segregated nature of the courses in the secondary setting helps cement the idea that literacy instruction is not part of the content area (O'Brien et al., 1995). Pre-service content area teachers were especially resistant to the idea of literacy skills incorporation (Lesley, 2014; O'Brien & Stewart, 1990). Some went so far as to say literacy instruction should not occur at all at the secondary level (Hall, 2005).

Teachers must be cautious concerning the attitude they display towards literacy incorporation. Student literacy is social and influenced by the school environment (Aulls,

1985) and teacher attitudes (Adams & Pegg, 2012; Moje, 1996; Park & Osborne, 2006a; Phelps, 2005). Teachers must model literacy behaviors to help develop literate students (Allington, 2002; Aulls, 1985). Additionally, a teacher's attitude also influence the implementation of reading strategies (Baker et al., 2008; Moje, 1996; O'Brien & Stewart, 1990; Park & Osborne, 2007a). Teachers are not immune from being influenced by other people's attitudes. Student resistance to incorporate literacy has been a drawback for pre-service content area teachers (Chambers Cantrell et al., 2008). Those teachers who do change classroom practices most likely do so after receiving positive emotional feedback from students or student performance (Guskey, 2002). The school environment is also influential on teachers. Agriculture teachers who worked in districts with a state literacy initiative felt pressure to include it (Park & Osborne, 2007a). There was a positive relationship between working in a district with a stated literacy initiative and a belief that all teachers are teachers of literacy (Hasselquist & Kitchel, 2016c).

Education has long valued literacy skills, recognizing them as fundamental to quality classroom instruction (Schmoker, 2011), and placed a heavy emphasis on them through high stakes standardized testing (Au, 2007). Some states moved to include academic performance as a component of teacher evaluations placing even more pressure on teachers (Mendro, 1998). This heavy emphasis on student performance may actually cause teachers to abandon classroom literacy activities. Pearson et al. (2010) warned science teachers that while high stakes testing makes the habitual use of lectures tempting and more comfortable when compared to literacy activities, they are doing a disservice to their students by not giving them the opportunity to develop the critical thinking skills associated with literacy.

Barriers to Literacy Incorporation

Incorporating literacy skills leads to a variety of benefits, including increased college and career readiness (Pearson, 2013), better retention of material (Reaves et al., 1993), increased content knowledge and metacognitive skills (Bangert-Drowns et al., 2004), improved critical thinking abilities (Krajcik & Sutherland, 2010), and better overall comprehension (Wood, 1988). Despite knowing literacy's importance and having generally positive attitudes, teachers, particularly agriculture teachers, fail to incorporate it for a variety of reasons (Hasselquist & Kitchel, 2016a; Park & Osborne, 2006a). One possible cause is a lack of confidence. Science and CTE teachers lack general literacy confidence (Park & Osborne, 2007a; Park, van der Mandele, & Welch, 2010) and confidence in assessing student literacy skills (Baker et al., 2008; Hand & Prain, 2002; Park & Osborne, 2005; Park & Osborne, 2006a). When agriculture teachers were confident in their abilities to assess student writing, they were more likely to incorporate writing projects into their classrooms (Hasselquist & Kitchel, 2016a).

Another possible reason for lack of incorporation may be a perceived lack of relevancy. O'Brien and Stewart (1990) found pre-service agriculture teachers were the most resistant to the idea of literacy incorporation because they felt it was counter to the hands-on nature of the content area. In-service agriculture teachers viewed literacy skills as supplemental to the content (Park et al., 2010), whereas science teachers perceived students did not benefit from the feedback associated with literacy activities (Freedman & McLeod, 1988). They also felt writing was not a vehicle for learning and should only serve as an assessment (Hand & Prain, 2002). Pre-service teachers are often not aware of

the literacy strategies they use in daily life , which can lead to the false impression literacy skills instruction is not needed at the secondary level (Spitler, 2011). When teachers face pressure to cover material, literacy activities may be deemed as unnecessary and excluded due to time constraints (Baker et al., 2008; Moje, 2008; Phelps, 2005).

The uniqueness of disciplinary literacy is also challenging for teachers. Each content area has a specific way to organize and communicate information (Buehl, 2011; Dougherty Stahl, 2014; Lesley, 2014). Being literate in the discipline means understanding and using appropriate communication in all forms (Moje, 2008). One unique trait of each discipline is the use of language. Teachers help students identify and become comfortable with the vocabulary (Allington, 2002; Dougherty Stahl, 2014; Krajcik & Sutherland, 2010; Park, 2011; Pearson, 2013; Snow, 2010) and the syntax of the discipline (Fang, 2006). Beyond the specialized vocabulary, each discipline has a precise way they interact with text. For example, “thinking like a scientist” is specific to science education (Buehl, 2011). This requires science teachers to generate and share profiles of how scientists use literacy in their careers (Jewett, 2013) and how they use text to form arguments (Osborne, 2010).

CTE focuses on preparing students for careers and to communicate with industry experts (Park, 2011). The action of “reading to apply” was specific to CTE (Park et al., 2010). Reading to apply tasks students to read information and immediately apply it, such as reading a pesticide label and then promptly using the pesticide. The safety aspect associated with the hands-on nature of CTE gives rise to an increased need for reading complexity (Park & Osborne, 2007b). Many of the texts used within CTE have a high level of reading comprehension and need to be supported by teachers to improve student

comprehension (Park & Osborne, 2007b). Another unique aspect of literacy in CTE was the teachers' willingness to modify and embed strategies to meet classroom needs (Park et al., 2010; Santamaria et al., 2010). The implicit literacy instruction associated with CTE is counter to the explicit literacy instruction espoused in other areas (Shanahan & Shanahan, 2008).

A teacher's personal literacy preferences have been shown to influence the use of it in the classroom. Agriculture teachers who self-identified as non-readers (Park & Osborne, 2006a) or those who did not value personal reading (Park & Osborne, 2007a) were less likely to use literacy activities in the classroom. However, teachers who identify as readers saw reading as an effective classroom tool and use it more often (Park & Osborne, 2007a). It is important to note that identifying as a reader did not have a statistically significant influence on the frequency of literacy activities used in the classroom (Hasselquist & Kitchel, 2016a).

Literacy and Teacher Training

Pre-service content area teachers receive training in technical content and pedagogy (Darling-Hammond & Bransford, 2005; Roberts & Kitchel, 2010). Specifically, agriculture teachers are expected to have a background in a wide variety of technical subjects (Edwards & Thompson, 2010). Despite literacy's importance to student success, not all in-service agriculture teachers have completed college coursework related to literacy (Hasselquist & Kitchel, 2016c). In a study by Park & Osborne (2007a), agriculture teachers who completed literacy related coursework used 10 additional strategies in the classroom when compared to non-completers and had a better attitude

regarding literacy making them more likely incorporate it in the classroom. Agriculture teachers have background in technical knowledge, but may lack the appropriate literacy skills to translate the information to the students. It is unreasonable to expect any teacher preparation program to fully prepare pre-service teachers with all the knowledge and skills needed to be successful in the classroom (Greiman, 2010). To fill in the gaps, many in-service teachers seek out professional development (Greiman, 2010).

Benefits of Developing Literacy Skills

When content area teachers fail to incorporate literacy skills, they are failing to prepare college and career ready students (Buehl, 2011; Gallagher, 2009; Pearson, 2013) and setting themselves and their students up for frustration (Pearson et al., 2010; Schmoker, 2011). Due to NCLB's segregation of literacy skills, students are leaving school unprepared for college or workplace literacy demands (Gallagher, 2009; Pearson, 2013). Incorporating literacy skills in all content areas is one way to combat this worrying trend (Buehl, 2011; Gallagher, 2009). Literacy skills, particularly quality writing skills, are needed for admission into college. Universities have a history of using admission essays to assess potential applicants, putting students with poorer literacy skills at a further disadvantage (Graham & Perin, 2007). In college, students with below average literacy skills are often placed in remedial courses (Buehl, 2011), putting them further behind their peers. The additional coursework increases the overall cost and time needed to complete a post-secondary degree. Whereas students with proficient or advanced literacy skills have an easier path in the post-secondary setting (Shanahan & Shanahan, 2008). Students who were successful in a variety of disciplines noted

disciplinary literacy skills, specifically writing, began to develop in the high school classroom (Goldschmidt, 2014).

Literacy skills are needed to be successful in the workplace (Castleton, 2002; Crawford, Lang, Fink, Dalton, & Fielitz, 2011; Hamilton & Torraco, 2013; Leggette, Sitton, & Blackwell, 2011; O'Brien & Stewart, 1990; Pearson, 2013; The National Commission on Writing for America's Families, 2004). Quality writing skills in the agriculture industry are highly valued, and are estimated to be worth \$2,501-\$5,000 per person (Leggette et al., 2011). Unfortunately, there is a growing trend of employers who are dissatisfied with (Bruening & Scanlon, 1995; Castleton, 2002; Svacina & Barkley, 2010) or feel their employees were underprepared regarding literacy and communication skills (Crawford et al., 2011; Robinson, Garton, & Vaughn, 2007; Williams, Robertson, Kieth, & Deal, 2014). Literacy is needed in a variety of ways prior to obtaining a job or career (Leggette et al., 2011; Tannock, 2001). Reading skills are needed to complete an application (Tannock, 2001) while the quality of writing in a cover letter helps determine if the person receives an interview (Leggette et al., 2011). Speaking and listening skills play a factor in the interview process (Hasselquist & Kitchel, 2016b).

Once hired, employers spend billions of dollars annually to help improve employee writing skills (The National Commission on Writing for America's Families, 2004). Furthermore, poor listening skills lead to decreased efficiency and lost sales (Hasselquist & Kitchel, 2016b). Employers feel the literacy deficiencies of their employees cost them money and lay the blame on the educational system (Burnaby & Hart, 2001), especially in the area of writing (Crawford et al., 2011). Work place training

is reflective of the stakeholder needs (McGuire & Gubbins, 2010) and due to the perceived shortcomings, a portion of the training is focused on improving literacy skills.

Teacher Learning

When teachers enter the classroom, they have limited knowledge. They have received training in technical content and pedagogy (Darling-Hammond & Bransford, 2005; Roberts & Kitchel, 2010), which does not feel like enough. Teacher learning can occur in two ways: formal experiences (e.g. professional development) and on-the-job learning (Eraut, 1994; Greiman, 2010). Reflection is necessary to learn, but time is required to reflect effectively (L. Shulman, 1988).

Professional Development

Professional development is a formal process in-service teachers use to improve their knowledge and skills related to classroom practice and instruction (Greiman, 2010; Guskey, 2000). Studies have emphasized the importance of professional development in agriculture teacher change (Shoulders & Myers, 2014). Professional development design has four main characteristics to consider: the teachers, the facilitator(s), the context, and the program design itself (Borko, 2004). It is important to remember teacher learning is inherently social and rarely occurs in a vacuum (Guskey, 2002; Putnam & Borko, 2000; Shulman & Shulman, 2004). The facilitator(s) shape the community of learners and experience for the participants (Borko, 2004).

Research has identified and confirmed five characteristics of professional development leading to teacher change: duration, collective participation, content focus,

active learning, and coherence (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001). The traditional “one and done” approach associated with day long workshops may have little effect on practice due to its abbreviated length (Desimone, 2009; Desimone et al., 2002; Garet et al., 2001). However, agriculture teachers identified these types of professional development workshops as good sources of technical knowledge (Hurst, Roberts, & Harder, 2015; Rice & Kitchel, 2015).

Collective participation occurs when groups of similar teachers (school, grade level, or content area) take part in professional development together (Desimone et al., 2002; Garet et al., 2001). This allows teachers to develop a community of practice, which allows them to work through the complexities of changing classroom practices with a support network familiar with the situation (Greiman, 2010). CTE teachers have noted the importance community of practice plays while integrating new literacy material into the classroom (Santamaria et al., 2010). The content aspect focuses on the material being taught. Teachers must be given opportunities to think about how new information can be integrated into their classroom practice (Putnam & Borko, 2000).

Active participation allows the teachers to engage with the content, it can be physical or mental and takes on a variety of appearances (Desimone et al., 2002; Garet et al., 2001). The final aspect to be considered in professional development design in coherence. Teachers are likely to use the material if they feel it aligns with personal or school educational goals (Greiman, 2010). The professional development must align with the problems and challenges they face on a daily basis (Desimone et al., 2002; Garet et al., 2001).

Literacy instruction and professional development.

The lack of literacy professional development has been a concern among content area teachers (Adams & Pegg, 2012; Graham & Perin, 2007; Keys, 1999). When content area teachers attended literacy related professional development they were more likely to implement literacy activities in their classrooms (Adams & Pegg, 2012; Santamaria et al., 2010) and have better quality student writing (Graham & Perin, 2007). They are also more efficacious regarding literacy and could provide specific examples of how it helped them incorporate literacy skills (Chambers Cantrell et al., 2008).

In addition to learning new techniques, professional development offers teachers a chance to create a community of practice (Garet et al., 2001). CTE teachers have noted the importance of a community of practice when incorporating more literacy skills and activities in their classrooms (Santamaria et al., 2010). Having a community of practice has also been noted to help improve teacher anxiety related to literacy integration (Chambers Cantrell et al., 2008). One study found 71% of middle and secondary content area teachers used their community of practices as a primary source for literacy instruction ideas (Chambers Cantrell et al., 2008). When groups of teachers, particularly content area teachers and literacy specialists -English/Language Arts teachers (ELA), collaborate they develop strategies to benefit all students (Brozo et al., 2013). Over half of agriculture teachers have collaborated with their ELA department (Hasselquist & Kitchel, 2016c).

A majority of agriculture teachers have attended literacy focused professional development within and outside of the local school district (Hasselquist & Kitchel, 2016c). There is a positive relationship between the belief that literacy skills support

content instruction and attendance of an outside the district professional development (Hasselquist & Kitchel, 2016c). However, Florida agriculture teachers reported literacy-related professional development did not meet their needs (Warner & Myers, 2011). This may explain why outside the district professional development was not influential over the frequency of classroom literacy activities (Hasselquist & Kitchel, 2016a). Despite professional development's apparent lack of influence, it should not be discounted. "Although professional development by itself may be insufficient to bring about significant improvement in education, it is an absolutely necessary ingredient in all education improvement efforts" (Guskey, 2000, p. 4).

On the Job Experience

The first year of teaching can be overwhelming for agriculture teachers (Greiman, 2010). As a coping mechanism, they rely on the apprenticeship of observation to inform practice (Eraut, 1994; Hammerness et al., 2005; Shulman, 1990). Beginning teachers imitate and replicate instructional methods they experienced as students. Even mid-career agriculture teachers reported their experiences as high school students were influential in their approach to the classroom (Rice, 2015). During the first few years, a teacher's knowledge base rapidly expands (Shulman, 1987), which brings about changes in instructional practice.

First year teachers are often focused on teacher-centered concerns and have a limited definition of student learning (Hammerness et al., 2005). Eventually they shift to more student-centered concerns and begin to understand the complexities of teaching (Hammerness et al., 2005). During this process, they may also suffer from failure of

enactment (Hammerness et al., 2005). Despite knowing exactly what they need to do to help student learning, they fail to enact those changes. When teachers are confronted with students' lack of knowledge or sheer ignorance, those "critical moments" provide an opportunity for quality reflection (Schon, 1983; Shulman, 1987). Furthermore, those experiences help develop the wisdom of practice.

The wisdom of practice is defined as knowing the best way to accomplish a specific task (Shulman, 1987). Each teacher's wisdom of practice is unique to them (Shulman, 1987). Through their experiences in the classroom, they gain an understanding of the teaching process and their students (Schon, 1983). Due to its uniqueness, teachers' wisdom of practice is not universal and cannot be replicated (Shulman, 1987). When teachers possess wisdom of practice, they may also develop maxims (Shulman, 1986). Maxims are practical claims, for example the best way to handle a problem student, supported by classroom practice but not necessarily by research (Shulman, 1986). When teachers develop maxims, it can be related to other types of teacher knowledge.

Maxims can be associated with an underlying knowledge base teachers may not even realize they possess. It is often hard for professional, especially teachers, to articulate what knowledge they have because they may fail to recognize it (Schon, 1983). Similar to an expert's blind spot, they may instinctively know what do, but cannot articulate the decision making process (Darling-Hammond & Bransford, 2005; Schon, 1983). However, if they are aware of their knowledge, it can be described by the modes of knowledge outlined by Eraut (1994).

Modes of Knowledge

Replication knowledge is the most basic form of knowledge (Eraut, 1994). No cognitive processing has been done concerning the new information; it's just replicated in a different setting regardless if it's appropriate or not, such as an activity "just dropped in" a lesson. Application phase occurs when individuals consider if a course of action or activity is appropriate for a setting (Eraut, 1994). A typical question they might ask is "where does this activity fit?" This mode of knowledge is influenced by a teacher's wisdom of practice. Interpretation occurs when individuals consider where the activity best fits and then enact it (Eraut, 1994). Interpretative knowledge occurs when theory and practice happen together (Eraut, 1994). The final mode, associative knowledge, occurs when practical knowledge gives way to creative solutions (Eraut, 1994). Finding a balance between existing and innovative concepts is important for teachers.

Adaptive expertise is a balancing act between innovation and efficiency (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005). Routine experts become very efficient at a specific process and make very few changes over time (Hammerness et al., 2005), while highly innovative individuals continually seek out novel approaches for the same situation, leading to frustration (Hammerness et al., 2005). Teachers who are adaptive experts can use both routine and new approaches to solve problems, improve lesson, and enhance their teaching through new activities and information. Unfortunately, even for adaptive experts, making changes to practice is not always easy.

For teachers to make changes to their practice, it requires them to unlearn certain concepts and skills (Eraut, 1994; Hammerness et al., 2005). It can be so challenging, the stress of trying to change teaching practice may actually lead them to revert to their old

habits (Eraut, 1994). Unlike other professional, teachers work in the relative isolation of their classroom, which can work against them as they try to change practice (Schon, 1983). Support is beneficial and necessary when attempting to implement new practices (Eraut, 1994). Communities of practice have been one way to help teachers feel supported while incorporating new ideas (Schon, 1983). Students benefit when teachers are part of community of learners (Darling-Hammond & Richardson, 2009; Shulman, 1997). Professional Learning Communities (PLC) can also support teachers in the learning process (Darling-Hammond & Richardson, 2009). Regardless of how or where teacher learning takes places, it is important in helping teachers enhance their practice.

Summary

Literacy instruction in early elementary school years focuses on developing students' ability to read and write (Chall, 1983). Eventually, literacy skills become the foundation for quality instruction across the content areas (Schmoker, 2011). However, few content area teachers take the time to model how literacy is used within the discipline (Buehl, 2011; Moje, 1996; O'Brien et al., 1995). CCSS have placed an increased emphasis on literacy and has made every teacher a teacher of literacy (Coleman & Pimentel, 2012; Pearson, 2013). When content area teachers fail to integrate literacy activities into their classrooms, they are failing to help develop college and career ready students (Gallagher, 2009; Pearson, 2013). For students, these failures can lead to academic alienation and isolation (Park & Osborne, 2007b) and possibility of dropping out of school (Rumberger, 1987). Without literacy skills, students may struggle to even obtain a job (Tannock, 2001). Content area teachers understand and value literacy skills,

but do not always incorporate them (O'Brien et al., 1995; Park & Osborne, 2006a). Some barriers content area teachers noted include the belief it was supplemental (Park et al., 2010), time constraints (Baker et al., 2008; Moje, 2008; Phelps, 2005), and an overall lack of confidence (Baker et al., 2008; Hand & Prain, 2002; Park & Osborne, 2007a; Park et al., 2010). Not all agriculture teachers have received training related to literacy integration and instruction (Hasselquist & Kitchel, 2016c).

To fill in knowledge gaps and enhance their practice, teachers turn to professional development (Greiman, 2010; Guskey, 2000). By itself, professional development did not directly affect classroom the frequency of classroom literacy practices of agriculture teachers (Hasselquist & Kitchel, 2016a). However, other studies have noted professional development does help content area teachers improve their literacy practices (Adams & Pegg, 2012; Chambers Cantrell et al., 2008; Santamaria et al., 2010). Whether directly or indirectly, professional development is a component of teacher change (Guskey, 2000). This grounded theory study seeks to explore the process of how agriculture teachers' experiences and beliefs related to literacy translate into classroom practice.

CHAPTER 3: METHODOLOGY

Purpose and Research Question

The purpose of this grounded theory study was to conceptualize how teacher beliefs and experiences related to literacy translate into classroom practices. The central question that guided the study was: How do agriculture teachers become teachers of literacy?

Research Design

Grounded theory was selected for this study based on the exploratory nature of the central research question. Very little is known regarding how agriculture teachers gain the confidence, knowledge, and skills needed to implement literacy in their classrooms. Previous research (Santamaria et al., 2010) has indicated professional development is a beneficial component for Career and Technical Education (CTE) teachers seeking to incorporate literacy. However, attending professional development activities was not a significant influencer over the frequency of classroom literacy practices for agriculture teachers (Hasselquist & Kitchel, 2016a). Agriculture teachers who completed reading-related college coursework use a wider variety of strategies (Park & Osborne, 2007) but again, it did not influence the frequency of use (Hasselquist & Kitchel, 2016a). Furthermore, having a positive attitude regarding literacy does not translate into practice (Hall, 2005; Hasselquist & Kitchel, 2016a). I argue it is important to understand what plays a role in the development of agriculture teachers' literacy practices.

Exploring a process or an action is the central focus of grounded theory (Charmaz, 2000, 2006; Corbin & Strauss, 2015; Creswell, 2013; Holton & Walsh, 2017). Agricultural education has limited literacy-related research, most of which took place before Common Core State Standards (CCSS) became a factor for classroom teachers (Hasselquist & Kitchel, 2016b). CCSS have placed an increase emphasis on literacy in all content areas (Buehl, 2011; Coleman & Pimentel, 2012; Lesley, 2014), developed standards to guide content area teachers (Coleman & Pimentel, 2012), and made all teachers accountable for developing literacy skills (Pearson, 2013). Since all teachers are charged with literacy instruction, it is important to understand how they become literacy integrators. Understanding this process can inform the design of future professional development activities for in-service teachers and re-shape pre-service teacher programs. This study was informed by the work of Corbin and Strauss (2015) who espoused the of idea grounded theory as a way to explore and understand complex processes and experiences.

Epistemology

This study was approached with a pragmatist lens. Corbin and Strauss (2015) contend the epistemological origins of grounded theory arise from interactionism and pragmatism, making this lens appropriate for the methodology. Grounded theory aims to formulate a theory based on the data, “not antecedent conditions (as in postpositivism)” (Creswell, 2013, p. 28). In this method, data are considered reality (Charmaz, 2000; Holton & Walsh, 2017). The philosophers John Dewey and George Mead maintained knowledge is created through actions and interactions (Corbin & Strauss, 2015). Actions

and interactions create an individual's reality. Pragmatism asserts reality and the researcher cannot be separated because a person's reality is based on their experience (Charmaz, 2006). The context and the participant(s) influence each other and truth at the time (Corbin & Strauss, 2015). As the context or participant(s) change, so does the truth.

Positionality Statement

In qualitative research, the researcher serves as the instrument (Creswell, 2014). Therefore, it is important to disclose my positionality due to its influence on my research (Creswell, 2013; Lincoln & Guba, 2000). My professional identity as a former agriculture teacher, participant in literacy-related professional development, facilitator of literacy-related professional development and my personal literacy experiences influence the way I view agricultural education, literacy, professional development, and the research topics I choose to pursue. As a former agriculture teacher, I understand the necessity and the challenge of incorporating literacy into a content area classroom. As a young teacher, I felt I did not have the background needed to be a successful teacher of literacy, despite having college coursework in it. However, I recognized the importance of literacy skills for quality classroom instruction and student learning. Slowly, I began to include more literacy activities into my classroom. The use of professional development in all forms, from traditional workshops to conversations with my friends in the English department, helped me gain the confidence, skills, and knowledge to use a variety of literacy activities in my classroom. Eventually, I began to facilitate literacy-related professional development workshops for agriculture teachers at the state and national levels. Through my work as a facilitator, I was able to have many conversations with in-service

agriculture teachers about how and why they use literacy in the classrooms. Many pointed to professional development as the key ingredient.

Personally, one of my favorite hobbies is reading. I understand the power an informational text has to build knowledge and expand a person's horizons. As a former struggling reader, I also have a keen insight into the frustration, shame, and embarrassment that accompanies below average literacy skills. I could not understand why I was able to read books for fun but struggled with my textbooks. It was my 6th grade teacher who showed me how to use informational texts. I went on to have a successful academic career and forgot about reading related frustrations. However, an experience in the Tokyo International Airport reminded me how uncomfortable it is to have below average literacy skills. After that, I became passionate about helping all students read both in and out of the content area. I believe the best way to improve student learning is to help teachers enhance their skills, abilities, and confidence. My goal is to conduct research that better helps agriculture teachers incorporate literacy into their classrooms. My desire is to equip teachers with the skills they will need to help all students possess the literacy skills needed for college and career success.

Participants

This study focused on six high school agriculture teachers who had a minimum of five years teaching experiences. The five-year threshold was selected based on teacher growth and development literature. Between the fifth to eighth year of teaching is when teachers begin to develop expertise in the classroom (Darling-Hammond & Bransford, 2005). Experienced teachers were selected because of the likelihood they would feel comfortable enough with the content to incorporate more literacy skills in the classroom.

Recommendations were obtained from agricultural education specialists in Missouri's Department of Elementary and Secondary Education for teachers with a reputation of incorporating literacy into their classrooms and effective classroom instruction. An additional criterion was to be located within 200 miles of the university so field observations and on-site interviews could be conducted.

An initial list of thirteen potential participants was obtained, with only four males identified. Special recruitment efforts were made targeting male participants. However, all males either declined or failed to respond to emails, calls, and text messages, limiting the study to only female participants. Special efforts should be made in future studies to include male participants. See figure 3.1. for a chart that includes specific characteristics about each participant including: pseudonyms, years of experience, and other factors of note. Pseudonyms are used throughout the findings and discussion sections to protect the identity of the participants. Additionally, all participants signed a consent form agreeing to participant (Appendix A).

Despite being identified as high literacy implementers, I observed various levels of classroom literacy integration among the participants. Each participant was assigned an integration score based loosely on Swain, Graves, and Morse's (2006) Continuum of Implementation. A score of 4 was the highest level of implementation and indicated literacy activities were the basis of the lesson and students were provided with extensive support and guidance. The teacher modeled how to complete the literacy activity and the associated thought process(es). A score of 3 indicated literacy was used throughout the lesson, possibly as the primary activity or to provide heavy support to a PowerPoint. The teacher reminded students how to complete the activity and clarified the associated

thought process(es). A score of 2 indicated literacy activities are used, typically to support a lectured-based lesson. The teacher offered support (e.g. answers students' questions) but no guidance on how to complete a literacy activity. A score of 1 indicated a literacy activity of some kind is present, but no support or guidance was given, or a teacher relied heavily on a PowerPoint with little or no literacy supports (e.g. think-pair-share). Finally, a score of 0 indicated no type of literacy activities or strategies were evident in the lesson.

Pseudonym	Years of Experience	Factors of Note	Implementation Score
Beth	11	Offered embedded English credit	2
Jane	13	CASE trained	4
Sue	7	CASE trained Taught core subject area	4
Lea	5	CASE trained	3
Amy	16	Offered embedded English credit Taught dual credit course	3
Stevie	9	PLC member	4

Figure 3.1 Chart of Participant Characteristics

Data Sources

This grounded theory study focused on classroom literacy behaviors, specifically why and how teachers incorporate literacy. To accomplish this, four sources of qualitative data were collected with each one giving new insight into the process. The primary source of data was interviews, with classroom observations, field notes, and

artifact analysis informing and driving the interviews. Incorporating literacy skills to content area classrooms can be difficult (O'Brien, Stewart, & Moje, 1995). The use of multiple data sources provided a variety of ways to view this process. A review of literacy related research revealed a variety of research techniques commonly used, including teacher interviews (Park, van der Mandele, & Welch, 2010; Santamaria et al., 2010), classroom observations and field notes (Moje, 1996), and artifact analysis (O'Brien & Stewart, 1990). Collecting data from a variety of sources in a short amount of time allows researchers to capture as much data as possible, leading to saturation, and helping with substantive theory generation (Creswell, 2013).

Interviews

Interviews serve as the primary source of data in grounded theory research (Charmaz, 2000, 2006; Creswell, 2013; Holton & Walsh, 2017) and served as the primary data source in this study. Interviews are needed to gain insight into personal experiences related to literacy integration (Creswell, 2014). One-on-one semi-structured interviews were conducted pre and post observation. Pre-observation interviews lasted approximately 45 minutes to an hour per participant, while post-observation interviews ranged between 30 to 45 minutes. During the interview, participants were asked questions pertaining to their classroom literacy practices, selection and purpose of literacy activities used, professional development experiences, and if any changes in attitudes, beliefs, or practices regarding literacy instruction had occurred over their career. The list of standard questions utilized can be found in Appendix B. The interview protocol served as a baseline. The questions changed and evolved throughout the data collection process

to further investigate the specifics of the concepts being explored (Corbin & Strauss, 2015). All interviews were recorded and transcribed.

Classroom Teaching Observations

Classroom teaching observations focused on the literacy activities in each class period. Teachers may not recognize the full extent of literacy activities they use in the classroom (Schmoker, 2011). They might view it as high quality teaching, but fail to see the literacy components embedded in it (Buehl, 2011). Furthermore, people may not be able to specifically recall what they were doing in a given situation (Corbin & Strauss, 2015). To compensate for any participant omissions, classroom observations were conducted.

The variety of literacy activities used by a teacher might not be evident from one class period observation. Agriculture teachers teach a wide variety of courses (Phipps, Osborne, Dyer, & Ball, 2008). Some courses align with a Career and Technical Education (CTE) philosophy of instruction others are more closely linked with science (Hasselquist & Kitchel, 2016b). An agriculture teacher's philosophical beliefs, including the purpose of the course, influence how they teach (Rice & Kitchel, 2016). The wide variety of classes and philosophical approaches that can be present within one teacher necessitates the need to observe more than class. Each observation consisted of two class periods. The length of time was chosen to increase the likelihood of observing literacy activities.

Field Notes

Field notes were taken to capture any literacy related information observed during the lesson. This included specific texts and strategies used during the lesson. This information helped shape participant interviews by giving specific examples to reference during the discussion.

Literacy-Related Artifacts

Literacy-related artifacts were collected to create a more complete picture of participant professional development experiences. Artifacts collected included resources directly connected to classroom literacy practices including reference books, teacher guides, and materials from trainings/professional development events. Through artifact analysis, researchers can gain insight to a person's thoughts and experiences at a specific moment in time (Hodder, 2000). By analyzing a variety of sources, it provided more evidence to create a clearer picture of the participants' professional development experiences and how it impacted their classroom literacy practices.

Data Collection

Data collection occurred in the winter of 2016 -2017. Pre-observation interviews were the first step in the process. After the interview, two class periods were observed, followed by a post-observation interview. Pre-interview questions focused on how participants go about selecting literacy activities and how they define literacy to avoid any changes in classroom practice arising from the reflective nature of participant interviews. Field notes were taken in conjunction with observations. Besides general

literacy questions, the post-observation interviews referenced specific activities observed earlier in the day. Finally, literacy-related artifacts were collected in person the day of the observation and interview.

Data Management

A data management plan is important for any qualitative study (Ryan & Bernard, 2000), especially since this study utilized four separate data points. To manage the volume of data collected, Nvivo 11 software was used. All audio recordings, interview transcripts, field notes, and literacy artifacts were loaded into the software program. The interviews were transcribed as soon as possible. Each participant was assigned a folder in the program and all associated data was sorted into their folders.

While Nvivo and other qualitative software aid the researcher in staying organized, it is important to note it does not think for the researcher (Corbin & Strauss, 2015; Creswell, 2013; Holton & Walsh, 2017; Weitzman, 2000). Nvivo software was used to organize data codes and write memos. The researcher used Nvivo to establish connections between emergent ideas. Having data sorted by participant made it easier to code the data sources, map codes back to the original source, change code and category names as needed, and link memos to specific data points.

Data Analysis

All four sources of data (interviews, classroom observations, field notes, and literacy-related artifacts) were analyzed. Due to the nature of grounded theory, analysis began after the first data collection event (Corbin & Strauss, 2015). Constant comparative analysis was used throughout the study. As new data were collected, they were compared

to existing data, noting the similarities and differences (Corbin & Strauss, 2015; Creswell, 2013). Open, axial, and selective coding process was used (Corbin & Strauss, 2015). Open coding focuses on identifying categories, axial coding establishes links between categories, and selective coding describes the relationships between the categories which leads to the development of a theory (Corbin & Strauss, 2015; Creswell, 2013).

Open Coding

To begin the coding process, I first read through the data and made notes to form initial categories. Opening coding looks for categories substantiated by data (Creswell, 2013). Due to the constant comparative analysis method, as new data became available I analyzed it for initial codes and adjusted data collection to saturate specific concepts (Creswell, 2013). Corbin and Strauss (2015) identify a variety of analytical techniques to aid in data analysis. In this study I utilized questioning, the examination of vocabulary and language choices, made comparisons, and drew from personal experiences (Corbin & Strauss, 2015). Once initial categories were established, I identified a prevailing idea to focus on as the central concept of my study (Creswell, 2013).

Axial Coding

Axial coding was the next step in the analytic process. While opening coding focuses on breaking data apart, axial coding's focus is reassembling the data in new manner (Corbin & Strauss, 2015). Axial coding seeks to identify causal conditions influencing the central concept (Creswell, 2013). Using my central concept as a guide, I

continued analyzing the data using the aforementioned strategies. Data analysis focused on context, conditions, and consequences (Corbin & Strauss, 2015) to better understand the central concept and how the categories are connected. Figure 3.2 provides an example of the coding scheme for the literacy considerations theme.

Overarching Theme	Category	Sub Category	Code
Literacy Considerations	Professional Growth and Career Maturation	Shifting Focus from Teacher-Centered to Student-Centered	<ul style="list-style-type: none"> -Survive early years of teaching -Learning content -Lesson planning takes large amounts of time -Heavy use of PPT -Developed strong content knowledge -Eventually moved to students-centered lessons -Noticed students' literacy struggles -Began purposefully using literacy to help build student skills
		Implementing a New Curriculum	<ul style="list-style-type: none"> -Embedded English credit -Dual credit curriculum -CASE course -Students fail to read directions -Vocabulary in every lesson becomes redundant -Strategies needed to support student with post-secondary level reading -Must seek out new activities to fulfil requirements -Motivating students to read

Figure 3.2 Coding Scheme for a Portion of the Literacy Considerations Theme

Memos were written through the entire process. They helped record and analyze information and are crucial for data analysis (Corbin & Strauss, 2015). Researchers use memos to explore and question the data, contemplate potential relationships within the data, and create meaning out of the data. Memos were helpful in establishing the central concept of belief drivers. They were critical in defining the relationships among literacy considerations, support structures, sustainers, and common struggles. Figure 3.3 provides an example of a memo from data collection and analysis.

Data Excerpt	Memo Connected to Data Excerpt
<p>Stevie: My attitude, if you would have asked me in school, it would have been really negative because I had to work really hard where my sister, easy peasy. And she loved to read. I hated reading. I didn't want to sit down. I wanted to be outside. I think that's why I also connect to students, because I know they want to use their hands and they want to do stuff, but you've got to be able to understand how those things need to be done before you can go right at.</p>	<p>Stevie struggled with literacy as a student which impacted influenced her as a student and teacher. Now that she is a teacher, she has a better understanding of what some of her students are going through, and can empathize with students who have struggles. She expressed earlier her struggles are what drove her to become a teacher. That drive and desire to help students like her sustains and helps her stay motivated to include literacy. Stevie described the satisfaction she feels when seeing improvements in students' grades and attitudes. Do other experiences help sustain her too?</p>

Figure 3.3 Memo Connecting Personal Struggles to Sustaining Experiences

Selective Coding

Selective coding is the final step in the coding process. During selective coding, the researcher attempts to create a “story” from the data relating the categories to the central concept (Creswell, 2013). When no additional data emerges, saturation has been

achieved indicating an end to the data collection and analysis process (Corbin & Strauss, 2015). My goal throughout the analysis process was to reach an appropriate level of abstraction (Corbin & Strauss, 2015) to generate a theory surrounding the central component.

Validation Strategies

In qualitative research, the validity of the findings is important; it ensures the study's explanation and findings are credible to the larger community (Janesick, 2000). Throughout this study, I engaged in a variety of general qualitative validations techniques highlighted by Creswell (2013, 2014). The use of four different data sources helped create a detailed picture of the central concept. Rich thick descriptions were used to explain the findings of this study and aided the reader in understanding how the theory was developed and added to the study's transferability (Creswell, 2013, 2014). Triangulation was achieved by using multiple data sources and it helped validate the study (Creswell, 2013, 2014). To confirm credibility of my findings and interpretations, I employed the use of member checks (Creswell, 2013, 2014). I was reflexive by examining my own position within the data and how it might influence data collection and analysis (Creswell, 2013).

Additionally, grounded theory methodology has specific validation strategies used in this study (Corbin & Strauss, 2015; Creswell, 2013). Grounded theory studies a process; a research question regarding a process was investigated (Creswell, 2013). I used open, axial, and selective coding to develop a theory related to the central concept of my study (Corbin & Strauss, 2015). Memoing was used extensively throughout the research process and was instrumental in identifying the central concept, establishing connections

between categories, and the development of the theory (Corbin & Strauss, 2015; Creswell, 2013).

CHAPTER 4: FINDINGS

Purpose and Central Question

The purpose of this grounded theory study was to conceptualize how teacher beliefs and experiences related to literacy translate into classroom practices. The central question that guided the study was: How do agriculture teachers become teachers of literacy?

Outline for Findings

Throughout the findings, each of the main themes (belief drivers of practice, literacy considerations, common struggles, sustained through common ways, and support structures utilized) is elaborated in more detail including major categories and connections between the themes and its influence on how agriculture teachers become teachers of literacy. The belief drivers of practice theme was presented first since it pushed participants towards felt need to include literacy in their class. Before they could integrate literacy, they had to work through a variety of literacy considerations to determine how to incorporate literacy. Each consideration influenced how participants used literacy. Participants faced common struggles on the path towards integration, while their intrinsic motivation sustained them. Sometimes, after working through literacy considerations, it was necessary to utilize support structures to enable integration.

Belief Drivers of Practice

Literacy incorporation was driven by a variety of reasons. The participants had several reasons that emerged regarding why they choose to infuse literacy into their classrooms. These drivers highlighted the importance of literacy to their students and its

place in the agriculture classroom. When asked why they included literacy, participants believed success outside of the classroom relies on literacy, vocabulary development extends beyond agriculture content, literacy is pragmatic for the teachers, and literacy in agriculture is an important transfer. These beliefs pushed participants to integrate literacy into their classrooms.

The Belief that Student Success Outside the Classroom Relies on Literacy

The world is becoming more text saturated than ever before and the participants believed it was important to expose their students to as much literacy as possible. Stevie pointed out, “if you can’t read, you can’t do anything.” The participants believed it was important to prepare students for life after high school, which included developing their literacy skills. When describing why she incorporates literacy into her classroom, Lea said, “I just think [literacy] is really important. I try to think about my experiences post-high school.” The participants believed literacy skills are necessary for success outside the classroom.

Students with different post-high school plans have different literacy needs. The participants focused on developing skills needed for both college and career readiness. Sue described the importance of helping college bound upperclassmen become independent learners and to help them find a literacy strategy best suited to help them process information. “. . . I think it's really important that you start respecting what their literacy strategy is, what works for them and encourage them to use it,” she said. Instead of developing individual student strategies, Beth focused on the needs of the class. She

stated, “My class of kids that are going to trade and tech schools don't need the same [literacy skills] my class of kids that are going to a four-year [school] need.”

The participants were aware many college students are expected to learn via independent readings and PowerPoint based lectures. Amy said, “If you go to college, you're going to read what your professor makes you . . . you cannot get out of [it].” During field observations, Amy often used critical thinking questions to help students move beyond a surface level understanding of the reading. She also encouraged them to designate key information in the reading, using whatever means they preferred, and to summarize key points in their own words on a note sheet. Her actions pushed students towards developing the necessary skillset needed to be successful in a text-based college classroom.

Sue understood the importance of helping students find literacy strategies that work for them. She discussed in the interviews how the use of concept maps made studying easier for her. She said:

[The professor] would put up a PowerPoint and have the students take notes . . . here is [the professor's] notes, [they] are going to babble at you and now you're going to learn. Well, really, I had to go home and reread it a million times and draw my own concept map or picture to help me remember.

By finding a literacy strategy that worked for her, Sue could be successful in college. This experience inspired her to expose students to a variety of strategies to help them find their own path to academic success. She believed it was part of her job to help students identify and refine their “go-to” literacy strategy.

Preparing students for workplace success was another reason for including literacy in an agriculture classroom. Lea remarked, “If I’m going to set my students up for success in the [workplace], then they have to be literate.” When thinking about how to include literacy skills, Jane volunteered, “It has to be real life based” and reflective of skills needed in the workplace. The participants recognized their students will need literacy, regardless of career choice. Beth said:

If they are going into welding, or another one of the trade or tech skill, they are going to have to be able to correspond with people. They are going to need to be able to read their contracts and their assignments. . . I feel like my job in the classroom is to prepare them for one of two things. To either go into the work force straight away, or to go to college.

Beyond reading and writing, Beth also developed students’ communication skills through a variety of means, including games. She stated, “We play communication games because these are kids that are not going to four year [school], but they do need to be well spoken to get their point across.” For Beth, it was important her students could use verbal communication effectively in the workplace.

Jane and Stevie focused on helping students develop the speaking and listening skills needed to disagree in a professional manner. Conflict is an inevitable part of the workplace, and they believe it is important to equip students with the necessary skills to handle it. A workforce development coordinator reminded Stevie of the importance of students who can “talk with each other and agree and disagree in a professional manner.” Jane also focused on the importance of professional communication in the workplace, she described teaching students how to discuss and argue with one another in a respectful

manner. She said, “I don't mind having kids disagree and argue in a professional way, but when they start calling each other's mamas names, then I have to step in and talk about this is how you argue in a professional setting.” For participants, effective verbal communication, including professional disagreements, is a vital component of workplace literacy. Preparing students for success in life also meant using literacy means developing the soft skills lifelong learning, independent learning, and developing evidence based beliefs.

Because lifelong learning was believed to be a key factor for success, the participants identified reading current publications as one way to be a lifelong learner. Amy shared, “they still have to [read] if they want to learn anything. . . they're going to have to expand their knowledge because life is ever changing.” Sue discussed the importance of helping students understand why lifelong learning matters. She described how she recently used the greenhouse to help the students understand the importance of finding correct information. “We're not going to just go out there and plant [the plugs] . . . we do [our research] before planting.” As a class, they discussed the ramifications of improper planting for the plant and financial health of the business. She exposed her students to a wide variety of text sources to help familiarize them with different ways to obtain information.

Another soft skill crucial for success after high school and related to lifelong learning is independent learning, especially through reading. Helping students become independent learners is important, because as Beth shared, “it's more realistic of what they might be doing in the real world.” Amy discussed how independent learning,

particularly through reading, will help students be successful in the workforce. She stated:

You've got to be able to read . . . and most of the time in [the workforce] if you are able to figure something out or look it up on your own then you're going to be ahead of someone else who is delayed . . . because they don't know how to look it on their own so they're like three steps behind you because they are still waiting on someone to hold their hand . . .

Helping students become independent learners through reading is preparing them for the workforce.

Reading to research, construct, and defend evidence-based beliefs was another skillset they felt students needed to for life. During field observations, the teachers often brought up and discussed the importance of finding and using accurate sources. When asked how she incorporates literacy, Lea responded, "they do presentations all the time, and so they have to research information for presentations. . . most of our literacy is probably research-related." It was important for her, and the other participants that students possess the knowledge and skills needed to evaluate sources and assemble a logical argument. Beth took it one step further. She believed in the importance of articulating a professional claim and the evidence used to support it. She said, "one of my goals is that [my] kids can be well spoken when speaking about agriculture. [They] can defend their stances." Beth was very aware of the challenges associated with it, as she pointed out, ". . . high schoolers are so quick to go, 'well, you're just stupid' . . . and never move past it." She described a variety of methods used to help the students develop the speaking, listening, and thinking skills needed to successfully defend an idea.

Information and news literacy.

The participants discussed how student research was one of the primary ways they used literacy in the classroom. While the internet has made information more readily available, misinformation and false information are also become more readily accessible. Beth said, “[my] biggest problem there is helping them identify what is a credible source.” Amy described the process as, “unfortunately, you have to use internet, whether it's good or bad. But, having them look up information to go along with whatever we're learning about helps.”

With technology becoming more common place, all the participants discussed how easy it was for students to access non-traditional texts including websites, YouTube videos, books on tape, and podcasts. Some of which may be of dubious quality. Jane described it as, “now you can just get online and I can upload an article or extensions publication or website or something and they can go to it and read it.” During field observations, in classrooms where students conducted independent research, every participant took the time to remind the class about the types of websites they should be using and other ways to establish the information’s credibility. When asked about it, Amy shared:

Right now fake news is huge so we go through of, ‘You know, hey, this is not real.... What would make you think that ... Why would you read this and think this is legit?’ They're like, ‘Oh, well it says so and so news something’ and I was like, ‘Just because it says news behind it does not mean that it's real.’

A similar explanation was given by multiple participants when asked about why they remind students about evaluating sources.

Beth and Sue focused on having students consult multiple sources of information before deciding. Sue said, “I don't always trust that the information they gather off the internet is accurate especially where they go. They'll go to the first thing that pops up . . . I like them to use multiple sources.” Beth and Jane’s solution to this problem was to provide the students with a list of websites to start their search. Beth said, “I generally give them a list of sources I know they can use. That way, they have a starting point and can go from there.” They also encouraged students to use traditional texts when researching information. Some of the texts they encouraged students to use were textbooks, magazine articles, Extension publications, Industry texts, equipment manuals, Curriculum for Agriscience Education (CASE) materials, and lab directions. It should be noted that despite encouraging students to use paper sources, all the participants had at least one type of textbook available, but none were in use at the time of my visit.

Students’ Vocabulary Development Extends Beyond Agriculture Content

Regardless of the setting, agriculture contains technical and specialized vocabulary, also known as Tier 3 words (Fisher & Frey, 2009). The incorporation of content specific vocabulary into the classroom was done to help improve content knowledge, communication skills, and prepare students for life after school. For Jane, exposing her students to a wide array of terms, especially ones specific to agriculture, was important for a student’s future. “Anytime you use language [it] helps the kids learn how to communicate in[agriculture]. . . I like to focus on professional content . . . some of those things that maybe they don't [cover] in English or the communication classes,”

reflected Jane. Building technical vocabulary helps students understand the content and sets them up for success later in life.

The participants also described a felt need to develop students' general vocabulary in addition to their literacy skills. Besides incorporating Tier 3 words, the participants also described helping students develop a knowledge of Tier 2 words. While Tier 2 words are not technical in nature, they are slightly less common other terms (Fisher & Frey, 2009). They are usually words proficient readers may be familiar with, such as "shun" or "predicament," but not often used in conversation.

The desire to include vocabulary surfaced from a clear student need. The participants described a growing awareness of students' limited vocabulary, especially with Tier 2 words. Amy and Lea described similar experiences of using Tier 2 words with their students and being accused of making them up. Lea said, "I will sometimes use a word, and the students will be like 'What are you talking about . . . did you make that [word] up?' I don't get it." While Amy shared, "I use common words that people with good vocabulary should know, and the kids were like, 'I don't know what that means.' It's frustrating." This frustration inspired Amy to develop the "Word of the Week" activity. Every Monday, she introduces a Tier 2 term and encourage her students to use it throughout the week in class discussions. Each time the students use it correctly they received an extra point or a piece of candy.

Including Tier 2 words in their classes helps the participants develop well-rounded students. Jane said, "vocabulary [development] is good [be]cause you see those words later in life." The participants often discussed how possessing strong working knowledge of vocabulary would help the students later in life, especially when it came to

advocating for the agriculture industry. Beth said, “they have got to be able to express themselves especially when they are promoting agriculture or explaining why we do things the way we do.” The participants felt focusing on Tier 2 words helped students for whatever path they would follow beyond high school.

Literacy is Pragmatic... for the Teacher

Literacy integration is not always driven by students’ needs. Sometimes, “including literacy is just part of good teaching” as Sue pointed out. Agricultural education’s focus is on educating students about food, fiber, and natural resources. The participants described integrating some literacy practices into their classrooms to help communicate content. Beth believed literacy is “a tool” she uses on a regular basis. She said, “I [use it] to get [content] across to my students . . . I think I'd be lying if I said I always think about putting it into my curriculum . . . It just happens.” The idea of literacy integration occurring naturally was surfaced by several other participants. Stevie observed:

I can't understand how you can't put it into everything. I think people do it and they don't realize that they're doing it or don't even think about it . . . I think so many more people do it we just don't realize it . . .

Amy also described how you do not have to force literacy activities into the classroom. She said, “don’t try so hard to put in stuff. . . it just happens.” Including literacy is sometimes an automatic response and common component of learning.

Using literacy in practical ways is important for the agriculture classroom. Amy said, “you're an ag[riculture] teacher . . . what you're trying to do is teach them life skills.

One of those life skills is reading, whether you want to or not.” The participants discussed using literacy activities to parallel life outside the classroom. Jane described how literacy integration must be practical and have a real-life application. “If [it’s] just thrown in there, [the students] know and it will not go well,” she reflected. The participants described working to find current events, user manuals, technical articles, extension publications, and other text sources to replicate the types of materials students will encounter outside the classroom. For writing, they focused on helping students summarize information and create materials reflective of industry needs, such as advertisements and educational brochures.

For Lea, who focuses heavily on literacy skills needed during the job application and interview process, she wants her students to feel comfortable and confident when applying for jobs. After her students have completed resumes and cover letters, she calls them on the phone to replicate an interview. “They think it’s weird, but they don’t know how to talk on the phone anymore,” she said. She strongly believed in the development of practical literacy skills. “I’ve had students come back and thank me for making them write. Once they get in the real world, they realize they have to write more than they thought,” she said. Using literacy in practical ways was important to help students prepare for life after school

Even in traditional hands-on learning environments, such as the greenhouse or agriculture mechanics lab, the participants still found practical and realistic ways to include literacy. Jane shared how she uses writing in her shop class. “You’re not going to write a creative story about a tractor,” she stated. For her, it was about finding a realistic representation of workplace writing. She said, “I have my students every day, on a

notepad, write out what they accomplished that day. . . in a shop, you're going to have to record what you did that day to prove that you were working.” The participants understood the importance of using literacy to help students maximize what they were doing in hands-on settings.

Beth and Amy were the only participants who currently offered an embedded English credit with an agriculture course. Both teachers described how collaboration with the English department was important for developing a course structure and content outline for the class. To earn the embedded credit, they must fulfill specific content requirements (e.g. number of papers written), but are free to do it a manner that best fits their students.

Amy said, “the English department tells me what I have to do to make it an English class, but I ... make it work.” It was important to make the English requirements manageable for her students, many of which struggle in the English classroom. She said:

If I told my kids at the beginning of the year they had to write five papers, they'd probably freak out and be like, ‘I'm not taking this class.’ How am I going to change that to make it so I can break it down into steps that they don't notice that they're doing these five things.

Seeking out new activities and strategies to support her students was necessary because of the course’s structure and requirements. She found practical ways to embed literacy and enhance the experiences for her students.

For Beth, having an embedded English credit caused her to seek out new texts and other reading materials. Her students complete an Occupational Safety and Health Administration (OSHA) training, which is completely text based. The OSHA curriculum

contains dense technical reading, requiring Beth to provide additional strategies and supports. When asked why she selected the OSHA curriculum as her text, Beth said she wanted her student to “walk away with something they can use” in their future careers. She also felt the course structure was important for her non-college bound students since “not every kid is going to college and we need to help all students.” She researched several types of texts to potentially use with her students before deciding on the OSHA training. Practicality was an important factor in the selection of the OSHA curriculum.

Recognition of Literacy in Agriculture as an Important Means of Student Transfer

Participants believed including literacy in agriculture classrooms helps students understand literacy is needed and can be transferred beyond the English/Language Arts (ELA) classroom. Lea, who focused on helping students develop quality writing skills, said, “if I don’t expect them to do it in here, then they’re going to think it’s an English problem. They’re not going to think it’s something [they] should do all the time.” She discussed trying to help students understand, regardless of where they go or what they do, literacy was an important skill to possess. Jane hoped the more students interacted with readings, the more “they [will] get reading is important to them.” Stevie noted the important of repetition for her students. “If . . . we don’t put [literacy] into each block every day, it’s not gonna (sic) stick. If you chose not to read and write and communicate in a productive way, you’re hurting your kids . . .” They believed when all teachers included literacy, the additional exposure benefitted students.

Participants discussed why using literacy in the context of the agriculture classroom was important for some students. Jane surfaced the idea of “sneaking” literacy

into lessons. Several participants described how students identify themselves as an “ag kid” or “not an English kid.” For the participants, using literacy in the context of an agriculture classroom was important to overcome the stigma some students associate with reading. Jane said:

I might actually teach a kid reading and writing in my Ag[riculture] class, because it has to do with reading and writing about restoring a tractor or something . . . I’m reaching those kids who’ve labeled themselves as ‘bad at English.’

Beth applied a similar description to her students. She said, “A lot of the kids I have hate reading. They hate doing speeches. They don't see English as being something of value.” She went on to explain how using literacy in agriculture classes helps build the students’ confidence and literacy skillset without them knowing. Lea noted how sometimes it was the setting that enabled students to feel successful. She observed:

I feel like the kids that I get down here, I've heard from other teachers, they act differently down here and so if I have them in a setting where they're already more engaged, more comfortable, they've had more success maybe than they do in a regular classroom, then I think we have more opportunities to improve in areas that maybe they just go in with the assumption that I suck at English. I suck at writing. They don't come in here thinking I suck at Ag. Sometimes that opens up the possibilities a little bit more, giving them a different venue to practice the same skills that they're learning in English class.

The participants recognized how the context of agriculture helps overcome some students' preconceived notions and helps them feel successful. To continue promoting student success, the participants felt it was necessary to embed literacy in their lessons.

Literacy Considerations

Literacy belief drivers influenced the participants' need and desire to incorporate literacy, but doing so was part of a lengthy process. None of the participants instantaneously started incorporating literacy into their classroom. They described a slow process, typically years in the making, where they developed the knowledge and confidence to begin any type of purposeful systemic literacy incorporation.

Teachers' Professional Growth and Career Maturation Concerning Literacy

All the participants described their first few years in the classroom as "survival mode." When reflecting on the experience, Beth said "I remember I was just trying to survive, that's it" extra things, like incorporating literacy activities, were not on her radar, an idea repeated by all the participants. Their primary focus was getting content to the students, in many cases learning the content, in addition to FFA, SAE, and other responsibilities required of agriculture teachers. Amy simply said, "you just try and stay alive your first couple years."

Jane and Beth were the only participants who explicitly implemented literacy activities their first year of teaching. However, their activities were not designed with literacy integration in mind. They were designed and implemented to help cover a gap in the teacher's content knowledge. Jane, who was at a single teacher program, was tasked with restoring a tractor in her agricultural mechanics class her first year in the classroom.

“I know nothing about restoring tractors,” was how she described her initial reaction to the project. Her lack of knowledge pushed her to use literacy with her students. Jane stated, “I made them look stuff up in the manuals and have a discussion to decide what to do next. Every day, on a notepad, [the students] would write out what they had accomplished that day.” The use of literacy activities helped Jane and her students develop content knowledge, but also helped her manage the classroom environment through writing and group discussions.

Beth, had a similar experience. To make up for her lack of content knowledge, she created a literacy activity to help her survive. Reflecting on her first year of teaching she shared:

I was teaching small gas engines, which I had no training in and so I was like a week ahead of the kids and I created a learning schedule each week. They had to complete [objectives] and they had to use the textbooks to do it. It was more out of necessity then of me thinking of [literacy].

Her lack of content knowledge forced her to use the resources she had available. However, she described having success with the learning schedules and has since implemented them in other classes when she lacks background knowledge or is gone for extended periods of time (e.g. National FFA Convention). In the early career stage of teaching, Jane and Beth saw literacy as a vehicle to help them survive, not as a key component of classroom instruction.

The participants were reflective of how much they grew as professionals during their first few years of teaching, with several participants having identified time as a key factor in their growth and development. They discussed how each year became more

enjoyable and a little easier. Beth said, “I always tell people you got to get to year three . . . year three is way better and year four is a whole new world.” During this time, the participants described becoming comfortable with the content and confident in their teaching abilities. These two things were important for participants to begin *purposefully* including literacy for the benefit of students. When asked about adding literacy activities to classroom, Jane said, “just be confident in yourself as a teacher. Confidence comes with time.” Beth focused on the importance of you knowing your content. “Once I started getting comfortable with the content is when I started being able to [make changes] . . . I’ve now been teaching so long, I now really can play with it,” she shared. Time and experience in the classroom gave the participants the content knowledge and confidence needed to begin purposefully infusing more literacy into their classrooms.

Participants viewed confidence as an important aspect of teacher resiliency needed during literacy integration. Jane said, “It’s a confidence thing. . . So [add literacy]. Fail. And that’s great. And then learn how to do it better next time.” When Jane talked about her experiences, it was confidence in her ability as a teacher, which made trying new things easier because there was no pressure to be perfect and “know everything.” The participants were aware not everything they did would not be successful on the first try, but it was important to keep trying if it benefitted the students. Amy and Lea also described increasing confidence was important when trying new things. Lea, the youngest of the participants, noted how she had to have confidence in herself before reaching out to other teachers for help with literacy. “I had to gain a little confidence [in myself] before reaching out to people that know what they’re doing and asking them for

tips and help . . .,” she shared. The participants’ confidence helped give them the resiliency needed to try and integrate new literacy ideas into the classroom.

The participants’ growth as teachers, shifting from teacher-centered to student-centered concerns, was crucial for literacy implementation. Time in the classroom allowed the participants to become aware of student needs. Stevie confessed, “As a beginning teacher, I didn’t pay attention to my students as individuals . . .” she went on to describe how she knew some students were struggling but did not realize she could help them until later in her career. During the early years of their careers, the participants described a growing awareness of students’ struggles with literacy. Amy said, “probably about three to four years into my career you really start to see, ‘gosh this is terrible.’” For Lea, her awareness came out of frustration. “There was a huge gap for me as far as what I expected from kids and what I got,” she said. While Beth simply pondered, “how can they not know this?” This awareness was important for them to understand what the students need and how to possibly reach them.

Time in the classroom allowed teachers to mature in their careers, developing a strong content knowledge base and a library of lesson plans to draw from. This had a positive effect on the literacy integration process. Beth described it as:

Once I hit a point where I was no longer surviving, and I started thriving and enjoying what I was doing every day, and I could start playing around with [how to teach] the content instead of just trying to figure out how to get the content or even learn the content.

As the participants got further into their careers, they were less concerned with developing lessons and more concerned with the process of teaching. Sue discussed how

it took her several years before she “became a real teacher.” Meaning she was finally able to focus on more than just content. She described how during the first few years she “just presented material” because she was so focused on the content. Once her content knowledge was developed, she could begin to find ways to enhance the lessons and try new literacy activities to support the students. Amy added:

After those first two years it's kind of leveled out, you can start thinking about what's important for you to make sure that you get in. But, you know let's be honest, literacy is probably not going to be on the top priority list of surviving those first couple of years.

The participants described how early in their careers they relied heavily on PowerPoints, but have since moved towards more student-centered teaching styles. This was supported by field observations, none of the participants relied solely on a PowerPoint. Several used PowerPoints and supported their students through a variety of literacy focused activities such as think-pair-share, list making, and information scavenger hunts.

Implementing Curriculum for Agriscience Education (CASE) into their agriculture programs and helping students adjust to the new curriculum was also an important learning process for the participants. Lea and Jane discussed how getting students to read the CASE materials was a challenge. Lea explained, “[the students] have to read their packets which has been probably one of my biggest struggles . . . we’re getting better at it.” When asked about the process of getting her students to read the materials, Lea discussed the realization you cannot just give the students material and expect them to read, they must be supported in the process. Jane went through a similar process. Using a text-dependent curriculum for the first time in her career made Jane

realize the importance of supporting students. Now, both Jane and Lea work to provide them with strategies and supports to help students work through a reading. During field observation, Lea asked her students to highlight any key terms and circle any vocabulary words they might not know, which was similar to a strategy Jane described using.

For Amy, her Agricultural Management course receives dual credit at a local community college. The course curriculum was developed and standardized for all teachers enrolled in the dual credit option. Amy noted the teachers were allowed some freedom in how the material was covered, there are also some prescribed activities which must be followed by everyone. She reflected, “how we do the notes system and how we do the worksheets, that's all given to us, but we have kind of have free reign with the rest.” During my field observation, Amy used the technique of Cornell Notes, also called two-column notes. When asked why she selected this activity, she explained this was part of the curriculum and it was designed to help students process and summarize information better.

Pushing Past Profession Norms and Expectations

When asked about their student teaching experiences, all the participants felt they taught at very traditional programs concerning content and pedagogy. Stevie said, “it was very old school. Like ‘here’s the textbook copy these terms and definitions’ or ‘learn these 50 breeds of cattle.’” Jane commented the program she student taught at had a “very strong FFA Chapter. It was very traditional.” She went on to explain most her class time was spent on FFA activities. A similar story was shared by others.

Of the six participants, only four were enrolled in a high school agriculture program. The participants who were students, themselves, in high school agriculture programs described their experiences as very traditional in nature. Jane and Sue, who were not members of a high school agriculture program, identified the program's traditional nature as being the major reason why they did not join. Jane shared, "my Ag program in high school was very traditional and I would be considered a non-traditional student. I lived in town. I'm a female. I wasn't going to farm." Sue discussed a misalignment of interests, "I was mainly into animal science. [My agriculture teacher] didn't have any passion in that and so he kind of turned me off. . . he really liked small gas engines and I really didn't." When asked how they would describe a traditional agriculture program, the participants shared similar impressions of a curriculum focused on preparing students for career in production agriculture or a focus on FFA events/activities. When asked if they remembered any literacy activities, Lea said, "I remember a lot of study packets for [Career Development Events]. Like that's all we did in the spring." While Beth volunteered, "I do remember having to learn scientific names of plants, but I don't remember anything else." The participants did not remember literacy in the context of their high school agriculture experience.

Despite student teaching and being enrolled in traditional programs, the participants are a part of innovative and progressive programs. Field observations revealed all participants use a variety of literacy activities, such as student research presentations, creation of plant care brochures, and a case study role play, in their classrooms, a departure from their previous experiences. An important factor to note is all participants taught at least one traditional hands-on course, such as woodworking or a

greenhouse management. Even in traditional hands-on classes, they still valued and engaged in literacy activities.

Within the field of Career and Technical Education (CTE), the participants felt there were lower academic expectations, including literacy incorporation. Sue was critical of the profession, “I know there's some Ag teachers that [do not use literacy], they don't do that kind of stuff, because it's not traditional.” She described how this attitude hurts students because they were not developing the skills needed to be successful in life and how it negatively impacts the field of agricultural education. Lea, who taught several mechanics based classes, was reflective about the need for all CTE teachers to integrate literacy. She said, “we can't just pass the buck on [literacy] because we are CTE, which so many of us do . . .” They were frustrated because of how they perceived CTE teachers to ignore literacy and other academic concerns, which negatively affects the entire field.

Another concern the participants worked through was the perceived low expectations core teachers have regarding CTE. Both Amy and Beth, who offer classes for embedded English credit, found the embedded credit has been a source of tension among other teachers in their buildings. Amy said, “our English department is pretty old school. They've got a couple of older teachers there that don't really appreciate that the kids could have their fourth English credit here.” Beth collaborates with her English department on a weekly basis, but that does not mean it has been easy. She reflected, “we tried working together and it was very hard.” Both participants described having to continually prove to the other teachers their classes were meeting the necessary requirements, even after the curriculums had been approved by the English department, school board, and the Department of Elementary and Secondary Education. They also

described differences in teaching philosophies and approaches could be problematic from time to time. Beth described placing a heavy emphasis on the content of students' writing and would occasionally comment on grammatical issues, while some of her English teachers felt she should place more emphasis on grammar and less on content. This discussion and potential disagreement emerges several times a school year.

How Teachers Plan Literacy

When adding literacy into lesson plans, the participants consider multiple factors. Technical content was the top priority of all participants. Beth said, "the most important thing is getting the content across and interacting with the students so they get it and so then you have to use whatever you need to make it happen." Sue explained, "I'm going to start with my objective or my tasks that I want them to know and then I need to come up with strategies that get them to the point." Focusing on the content gave the teachers structure when considering what types of literacy activities and strategies maximize student learning.

When considering literacy integration, the students played a role in literacy activity selection. Personal relationships, "knowing" the students, and understanding class dynamics also influenced how teachers choose to include literacy activities. Stevie was very reflective of how her behavior had changed over the course of her career. She said:

As a first-year teacher I would say, 'Oh, they just can't read or they just can't figure it out or it's simple concepts that they don't know.' Not understanding what

their underlying background or where they got lost or what was causing their problems.

She recognized the importance of knowing individual students and working with them to overcome challenges.

Age, grade level, and student maturity were inter-related factors surfaced by the participants. “With my freshman, I need to be doing different things with them than I am with my seniors,” shared Beth. Stevie was focused on how students and their needs grow and change over time. “I would say upperclassmen are differently handled than when they are in lower classes. . . they are so different. It's amazing how three years can really change a freshman . . .” The participants discussed how activities that work for seniors may not be appropriate for freshman and how different groups require different supports.

When deciding what Tier 2 words to focus on for vocabulary development, the participants relied on word length and their knowledge of students. Jane reported, “We've had training over Tier 1, Tier 2, Tier 3 words. Usually, the length is a really good indicator. Anything over like seven letters, you probably are going to have to explain it.” Stevie discussed how it was her personal knowledge of her students and her relationship with them that helped her recognize when it was necessary to include some discussion about Tier 2 words. She was very confident in her ability to recognize words that might be problematic for her students. She also was reflective about her own time in high school and if she would have known some Tier 2 words.

In addition to the content being covered, the participants were purposeful in using a variety of instructional practices. Amy explained, “I have try to do different things. . . No two kids learn the same. So, I try to do a whole bunch of different stuff.” Several

participants noted that variety was important for the teacher and the student. Beth pointed out, “using the same [activity] over and over and over again [is] why kids are getting bored. . . There needs to be some variation.” Jane considers her own needs when selecting activities for her students. She said:

We had lecture for three days and two days of hands on stuff so I was ready to do something a little more [literacy based] with the students. . . You know. It's real easy to stand in front of the room and run the same PowerPoint I've had for the 13 years and do the same story and just talk at them. It [makes] me and them more engaged when you switch it up.

By considering previous lessons types, the teachers could best identify the type of literacy activity to include for instructional variety.

Developing relationships and knowing students were critical parts of the literacy integration process. “I know what works for my kids because I have a relationship with them, so I understand how they are going to process information,” said Lea. She discussed how that knowledge influences what activities she selects. Jane and Amy discussed the importance of using a wide array of literacy activities with their students. Variety was important for reaching a wide range of students. All the participants discussed how each class of students has a unique set of needs, and adjustments to the literacy activities must be made to best fit the class. Amy described it as, “each class dynamic is different . . . I'll be like, ‘I think I can get away with that in this class, but definitely not this class.’ So you know you just make adjustments.” Other participants who taught a class multiple times discussed how lessons and literacy activities must be changed to best fit the class’ dynamic. Field observations supported this type of reflective

teaching. I watched Amy and Jane teach the same lesson twice. Both made small changes to the lesson and literacy activities to better fit class dynamics and different student needs.

When trying to incorporate new activities or strategies into their curriculum, they are reflective about specific activities. It was best described by Amy, who said:

If I think [an activity] will be good, I'll be like, 'Hmm. I'll try it with this group.'

If it goes well then I'll try it with another group. Just depends . . . on the type of activity and if I think my kids can handle it.

Beth also outlined the importance of trouble shooting. "I want to know where other teachers have struggled [with the activity] so I can try and avoid it," she said. They worked to implement new literacy activities and strategies in a controlled manner. Success also helps them feel confident to include the activity in other lessons.

When adding literacy activities into lessons, the participants noted previous success with a specific strategy was a factor in deciding to use it again. Stevie explained how she works to "train" her students by having several strategies she uses on a regular basis, such as outlining content and identifying vocabulary within a reading. "Eventually, they just do it," she noted. Amy also used previous success to guide her decisions, "if it worked once, I keep using it. . . it will just depend on the class." Lea explained, "I just kind of latch on to one or two and use them all the time." Success helped the participants develop a "go to" repertoire they were confident in using with a variety of topics in a variety of settings.

Participants reported reflective thinking before and after using literacy activities. Besides considering what content they need to address and who their students are, the

participants considered the previous time they used the activity and if any adjustments should be made. They also described the importance of reflecting on a recently completed lesson to determine if more literacy was needed. As Stevie pointed out, “sometimes you just miss a good opportunity.” When Lea was asked about how she might make adjustments with a literacy activity, she shared, “[the adjustments will] probably be explaining a few things [students] had questions about up front. If they were really confused about a couple of different things and going through that with them.” Clarity was a common adjustment made by participants, their ultimate goal was improving the learning experience for the students.

When literacy activities failed, it provided participants with an opportunity for quality reflection and growth. Stevie said, “no one likes to fail, but you learn so much when it happens.” Sue noted even before an activity is finished, the reflection can start. She said, “sometimes I’ll be doing an activity and I’m like, ‘That didn’t work, what are we going to do different?’ to try and save the lesson.” Beth thought it was important to view a failed activity from the student’s perspective. She described the evolution of a literacy assignment from a formal essay to a comprehensive project made up of multiple components. It took several attempts to finally find the right balance. The driving force behind the changes was viewing the project from the students’ perspective. “It wasn’t enjoyable, it was tedious, they had trouble getting themselves started,” said Beth. She described how important it was for the activity to be enjoyable while ensuring the students were learning the key information. With each round she viewed the project from the students’ perspective while considering if they “were getting what I need them to get” in terms of knowledge and skills.

The participants also described looking at problems holistically, not just a single problematic activity or assignment. Lea noted, “I feel like I do spur of the moment type writing assignments, which is not a bad thing, but the quality can vary depending on my instructions. I realize there was a correlation there.” This realization stemmed from trying to understand how her students could write quality essays and reports, but struggle with quick summaries and simple written responses. Regardless of how they approached the situation, they still made the necessary adjustments or learned how to do things better next time. Stevie described it best when she said, “sometimes it doesn't work out. No, it doesn't make me not want to do those things. It's makes me want to try it in a different way.” Failure was a key component to their growth.

Lack of success was not necessarily enough to prevent them from using the strategy again. Sue described the importance of resiliency regarding literacy integration. “If it’s something new that doesn’t work, you just gotta (sic) rework it and try again,” she said. If the participants felt the activity had the potential to make a difference for students, they were willing to invest the time and energy needed rework the activity. Or as Amy said, “sometimes it’s trial and error.”

Students are a part of the classroom environment. Helping them adjust to literacy expectations was an important part of the integration process. All the participants encountered some form of student resistance towards literacy, which did not make integration easy. Sue said, “They fuss, they do not like to [read]. I mean there's some that just don't read. They'll wait and get the answers from somebody else.” Student resistance to reading and writing was a common challenge. Beth said, “you have some that really fight you on it . . . you can’t just ‘today we are going to read’ you have make it

meaningful for them.” Or as Sue said, “you just trick them into doing it.” The participants often discussed finding texts and strategies closely aligned with their content and students’ interests. Jane described the importance of finding the right material for her students. “If you find the content they’re interested in, they’ll go hog wild on it,” she said.

Another component of literacy integration was holding students to high expectations. While students expressed hesitation and even resistance to literacy in the agriculture classroom, the participants believed it was important to be consistent with students and hold them to high standards especially when using literacy. Lea observed:

I’d say embrace it. I think that you need to come in understanding that it’s going to be a battle because kids don’t like to write because writing is work. It takes some creativity and they have to exercise some muscles that they don’t really care to use in their brain, but I think you gotta (sic) embrace the challenge.

Sue makes her students redo poor quality literacy assignments. She shared a recent experience. “I’ll get work from my kids . . . like fourth grade [level] work. . . I make them redo it because . . . they didn’t meet my standards or learn what they were supposed to,” she stated. Beth said, “you just gotta (sic) stick to your guns and make them do it. They stop fighting eventually.” While Stevie said, “by the time they are juniors, they’re trained pretty good. They just do [the literacy activity] without much complaint.” The consistency piece was important for helping the students understand literacy activities are a part of the agriculture classroom.

The last point the participants stressed concerning literacy integration was how it could not be obvious to students, which forced the participants to seek out subtle and pragmatic ways to include literacy. They often described “being sneaky” or “just slipping

it in there” as the best way to prevent pushback and gain student buy in for literacy activities. Amy reflected, “[we]’ve got to be creative in the ways that we do it.” The participants noted some students immediately shut down when it comes to obvious literacy activities. Jane was quick to point out subtle literacy activities are important for those students. She said, “you kind of trick them. . . So sometimes you make it a game. It tricks them into reading.” Beth took the time to explain the importance of subtlety with some of her students. “What they don’t realize is while they’re having fun, they’re learning [and using literacy] but if I told them that, they would shut down.” For some of her most challenging classes, she purposefully includes games and other activities that seem random to the students, but are designed to help build literacy skills.

Leveraging Literacy in FFA and SAE for Student Success

There were several ways the participants described using literacy to help enhance FFA activities and traditions. In the past, Sue’s FFA chapter had participated in Food for America, an FFA program where high school students bring farm animals to a local elementary school to educate the students about food production. She recently changed from a petting zoo to a book based event. Sue shared, “we used to do Food for America . . . but the lessons weren’t age appropriate. . . So now we pick a book to read [to the students] and then develop activities to go with it.” She recognized how literacy activities can help enhance an FFA chapter’s outreach.

The FFA creed is another common tradition enhanced through literacy activities. Beth stated, “The language in the creed is very archaic, it doesn’t mean anything to them. We have to break it down.” Stevie and Lea also shared feelings like Beth’s regarding the

creed's language. They both felt it was necessary to help students develop a fuller understanding of the rich language. Lea said, "I don't just make them memorize the creed. I want them to know what those big words mean . . . it's a little pointless to make them memorize five paragraphs when they don't understand what it's saying." Stevie discussed having students circle phrases in the creed they were familiar with and understood, which typically is not very many, and how it created a sense of urgency to really understand the creed. Students are assigned terms and phrases to research, and then share their findings with the class as "experts." After the definitions and the language have been discussed, participants ask students to apply the creed to their life. Stevie and Lea have their students update the creed using modern language and write a personal creed.

Literacy skills are needed to complete FFA award applications and update SAE record books. All participants required students to keep SAE record books in the classroom and devoted time to their upkeep on a regular basis. Amy reflected on how it was so important to help younger students understand the terminology and how to fill one out correctly. "You have to be able to write to tell your story. You could have the best project in the world but that is not going anywhere if you can't write about it," she remarked. Amy discussed taking several days in class to help students understand how to read a record book prompt or application question and respond appropriately. Participants recognized the importance of helping students develop the literacy skills needed to complete FFA award applications and update SAE record books. Literacy knowledge and skills are needed to help students understand and maximize the experience.

Common Struggles

Despite having a felt need to include literacy, and being comfortable enough to do so, the participants still encountered common struggles in the integration process. These challenges did not prevent the participants from including literacy, but they do prevent the participants from maximizing its potential in the classroom. Participants found ways to work around the challenges, but all expressed a desire to be rid of them.

Shortage of Teaching Resources

When the participants did integrate more literacy, they often expressed frustration at their lack of literacy-related resources and personal literacy knowledge. Stevie said, “I don't always feel equipped because when I went to college, you had one reading class, and when you're here, you're helping with every single student, [they] have a range [of ability].” Jane described how her limited knowledge has pushed her to seek out new resources. She shared, “right now, I don't feel like I have a ton of tools in my tool shed . . . but I have a couple things and then, as you get [to the point] where you're treading water, you just go to the internet.” The lack of confidence in their ability was problematic for the teachers. Sue was the only participant who had physical resources related to educational activities. It should be noted the materials she used were related to increasing student engagement, not literacy. However, many of the engagement ideas included some component of literacy. The lack of reference materials was problematic for most participants. Only two participants, Amy and Beth, did not directly ask me for book recommendations to improve literacy integration.

When asked what they needed, many participants were quick to identify two types of resources: articles for students and activities/strategies for themselves. Sue had a strong desire to use current event articles in her classroom. “In a perfect world, I think it would be really cool that with almost every lesson that you use an up to date resource and have the kids read about it in a real-life situation,” she said. Jane and Lea discussed how finding quality current event articles for their students took a long time, a resource they were already short on. Sue said, “We’re so busy we become complacent with we’re just going to use what we have and we don’t use the current resources that are out there.” The lack of teacher and student resources were problematic.

Lack of time was another concern expressed by participants. Amy’s concern centered around the length of a class period. Her students are bussed from the high school to her building. She said, “we only have like 43 minutes here because of bussing so sometimes it’s really hard to get in all of those things that you need to get done so sometimes [a literacy activity] gets cut.” For other teachers, it was the volume of workload. Beth said:

I have five preps. That’s the fewest preps I’ve had in the last five years . . .and one of those preps is for a group of 50. Not to mention state forms and the [professional development] the school requires me to do and contest season and applications and yeah, more time would be helpful in everything because sometimes you’re just going to stick with what you’ve been doing because you know it works instead of implementing something new. I don’t have time to implement new stuff if I’m already here until 7:30, eight o’clock at night doing other stuff.

Stevie had a similar description, “I would say time is a major [barrier] because I have all these things already done and they work for me well and then finding time to enter new stuff in.” Since time was limited, the teachers reported they kept using what they had done in the past. It was just easier when, as Lea put it, “you’re just trying to keep your head above water.” They lacked the time needed to research, find, and integrate new activities.

Taking time to update a lesson plan was very important for the participants. All identified lack of time was one of the biggest obstacles to including more literacy. One way to overcome that was surfaced by Jane. She said:

Give us the time at [professional] development to develop a lesson. Because a lot of times in [professional development] . . .you're like, ‘yeah, I want to do that’ And they're like, ‘Okay. Goodbye. It's 3:00,’ and then, you don't have time to make changes.

By setting aside specific time for ag teachers to add literacy into their lessons, she was confident it would help improve their practice.

Lackluster Professional Development

All the teachers attended a variety of professional development activities. However, the only literacy specific professional development activities were sponsored by their local school districts. When literacy was the focus of a district initiative, it was typically supported through professional development. Amy said, “It was our professional development theme for an entire year.” While Jane experienced a one-time training on help students improve their writing skills. She stated, “We had to do a lesson

on argumentative writing. That was like a one-day thing. It was hard to get anywhere.”

The brevity of the trainings was problematic for some participants. None of them reported having an experience that led to a change in practice. At best, it made them more aware of literacy resources and materials available.

Despite attending professional development with a literacy focus, the participants did not find it as impactful. Surprisingly, what they did find impactful were professional development experiences that did not focus solely on literacy, but included it in addition to the publicized content. The Curriculum for Agriscience Education (CASE) training was an experience that included literacy in addition to the curricular focus. CASE certified teachers undergo an extensive training. CASE only provides curriculum materials (readings, PowerPoints, lab activities, etc.), but during the training, some participants learned new literacy activities to use with the text. Sue was reflective of her overall experience, “In CASE [training] I think we do a lot of literacy activities.” Lea noted her growth was in a specific area, “Even though the focus is the science stuff, they still give us a lot of tools . . . Most of the stuff I got from there were like creative ideas for how to get kids to summarize information,” she stated. The CASE training provided the participants with a wide base of literacy activities to draw from. Sue and Jane discussed how activities learned at CASE trainings were integrated into other classes.

The CASE teachers explained how they learned a variety of activities and literacy related ideas from the presenters. Even though CASE focused on helping them understand the curriculum better, the participants still found benefit in seeing how the facilitators modeled strategies for the participants. Sue said, “in CASE [training] we learn a lot of literacy activities in addition to the content. It’s a nice perk.” Beth discussed how

the Fall Agriculture Teacher In-Service and Summer Conference typically have some literacy-related ideas available. They all appreciated being provided with ideas and activities easily integrated into any class.

All the participants reported gaining ideas and activities from professional development that were not specifically literacy focused. Lea stated, “At a true Ed[ucation] camp, you just show up and say hey, ‘I’m having this issue,’ and somebody’s like, ‘oh, I had a similar issue’ . . . We just learn from each other, which is cool.” She also appreciated the flexibility in selecting issues she was concerned about. She added, “I went to a writing segment of Ed camp and I think it was really helpful to hear an elementary teacher’s perspective on literacy in their classroom.” Lea took advantage of the opportunities to develop a deeper understanding of literacy works at different levels of education.

Two major stumbling blocks identified by participants were the focus of the professional development and the facilitators. When describing the set up, they felt feasibility and a CTE focus were important. Beth was direct and said, “I don’t want theory. . . obviously, theory is how we get started in some areas, but I want to actually see it and I want the good and the bad.” It was very important to her and the other participants that they could easily picture of how the information being presented would translate into a high school classroom. While Lea offered a critique of “it’s good information, but at the same time you’re like, did this really happen in a classroom?” All the participants wanted information and ideas they could implement in the classroom. The participants who attended CASE trainings described getting a variety of ideas to use

with their students. Those who attended literacy focused professional development had a harder time identifying important information they learned.

Another concern regarding professional development was the facilitator. The participants discussed frustrations associated with a facilitator who is out of touch with secondary and/or CTE classrooms. When describing a recent literacy professional development activity, Amy said, “it was a lot more elementary than what we probably needed, which was probably its biggest downfall.” Stevie also experienced a similar situation with her school’s Professional Learning Community (PLC). She stated, “we actually had an elementary reading teacher come in and work with some of our [staff]. That kind of got rough because elementary teachers and high school teachers view things different . . .” The participants noted there was difference between elementary and secondary settings and it can be a hard gap to bridge.

They also wanted facilitators who understood the unique nature of CTE and could adapt ideas to fit the participants’ needs. Jane described an experience where the facilitator failed to bridge the gap. She said:

We had to do a lesson on argumentative writing. . . It was a real struggle for the tech school people ... the people that were teaching this weren't practical arts type people. It was an English teacher and then she was really struggling how to connect her English stuff with the stuff for the tech school.

Jane was also quick to share a solution to the situation. She said, “Get a practical arts person to teach it, who's familiar with what goes on in activity based classroom. . . I always think then you have that connection and the participants can connect it to what they’re doing.” The participants described how important it was for them to have

professional development facilitated by in-service teachers or literacy experts who understood the CTE field and could illustrate how literacy integration works in an applied classroom.

How School Setting and Policy Shapes Literacy Adoption

While all the participants described including literacy as part of good teaching, they also described how aspects of the school setting can make it challenging for agriculture teachers to include literacy activities in their classrooms. The physical location of the agriculture programs resulted in pseudo-isolation from the rest of the staff. Jane and Lea had classrooms located in the back of the building, away from core teachers, while the rest of the participants were housed in separate facilities. In Sue's previous schools, her classroom located near the science and social studies departments, an influence she found valuable and aided in the creation of a personal community of practice. Being in a separate building has been a challenge for her. She said:

I don't see them in the hallway where I can talk to them in that passing period where before when I taught middle school we would sit and hang out in the hall after the bell rang just to talk to each other about what we were doing in class or getting ideas or sharing stuff . . . So now it's all been communication by email it's just not the same.

After moving to her current school, Sue has struggled to develop personal and professional relationships with other teachers in her school due to physical separation. The lack of a community of practice is an element from her previous schools she misses.

For participants whose schools had recently adopted one-to-one technology or would soon be heading that way, they worried about how they could find a balance between traditional and technology based learning to meet students' literacy needs. Beth said, "if all the teachers use the same app or technology in the same way, the kids are going to get bored." Stevie described how iPads have helped her students, particularly regarding reading and vocabulary development. She said, "I like those apps that pronounce words and stuff, they're great" but she also worried about how she could develop students' writing skills with technology. She wondered, "How do you incorporate iPads into not just the reading stuff, but writing too?" Amy faced a similar problem. She described her concern as, "what is that balance to using technology, using paper and pencil? If you go . . . supposedly paper and pencil free, how are you going to . . . turn that into some type of literacy type thing." Finding a balance between technology and literacy activities in a paper free school concerned Amy. Participants' schools are moving towards becoming a paper free and they are concerned about making the transition while still including literacy.

Teachers' Integration Sustained Through Common Ways

The participants described being sustained in the literacy adoption process through common ways. These experiences did not require the participants to seek out any information or support. It helped participants maintain an intrinsic drive to include literacy and gave them a basic knowledge of how literacy looks in an agriculture classroom.

Personal Experiences

Sue and Stevie willingly shared their personal struggles with literacy. Both admitted struggling with reading and writing as younger students. Stevie said:

Actually, I'm a very poor speller and a poor reader, and so I wanted to become a teacher so that I could help kids who were just like me. I had to take phonics and do a bunch of different things when I was younger.

Sue needed help with skill development as an elementary student, “when I was in third grade . . . I spent the summer with this lady that was a genius. She just got me inspired and had me actually learn how to like to read . . .”

The experiences and feelings related to struggling with literacy as a student were motivating factors in how they approach literacy with their classes. They both expressed trying to support readers of all levels. Stevie also noted she is very open about her struggles with her students. “I see the letters, but it might not always be the right word . . . They know that. They'll be like, ‘Ah, Ms. N., are you sure that's right?’ I was like, ‘nope it wasn't, let's try that again.’” When describing herself as a high school student, she said she was someone who “didn't want to sit down and wanted to be outside” because school was very hard for her. She believes her experiences help her connect with students. She said,

“that's why I connect to students, I know they want to use their hands, they want to do stuff, but you've got to be able to [read] and understand how those things need to be done before you go at it.” Stevie understood the importance of balancing the desire to do hands-on activities with helping read and understand what is needed to complete the

project. For Sue and Stevie, their experiences gave them empathy and an understanding of why all students, especially those who struggle, need support.

For Amy, including literacy to help create lifelong learners stemmed from memories of her grandfather. She said:

I can still remember my grandpa was a farmer for his entire lifetime, but he still had his stack of farm magazines sitting beside his chair and usually it was Sunday afternoons, that was his day that he caught up on his magazine reading . . .

She described how reading magazines was the way he learned information and updated farming techniques. She realized early in life that reading was avenue to become a lifelong learner.

Every single participant eagerly described themselves as readers. Beth said, “I love to read. . . It's one of my stress relievers every night, I read before I go to bed. . . it's just something I have always done.” Amy added, “[I'm] definitely a reader. I read a lot, but just for fun mainly... Of course, there's all this professional stuff that you do, but I read for fun.” Despite identifying themselves as readers, Beth was the only participants who described making in a daily priority. Lea said, “I read, if I have time.” While Sue reflected, “I wish I had more time to read . . . [right now] I only read in the classroom because I don't read at home unless it has to do with Ag.” Jane was unique. Besides wishing she had more time to read, she was an avid listener of educational podcasts, which she often found ways to share with her students.

Stevie was the only participant who described transitioning from a non-reader to a reader. She said:

“[Through] seven years of teaching, I really hadn't read too much outside of planning for my curriculum or reading conservation magazines or our FFA magazines or our cattle magazines. Those I read, but actually reading for enjoyment, no. This past year, to my librarian, I said, I need a book. I've got to read something. Give me something I'm gonna (sic) like, and so I've read two books in one semester, which never really happens because I felt like I never had time. When I do read, I love it... something this year just clicked and it might be because I see these kids and I'm telling them to read more because if you can read you can do anything

As a teacher who worked with struggling students, she felt it was important to model good reading habits with her students.

Teacher Training

Only three participants were required to take an undergraduate literacy course. While Amy did take an undergraduate literacy course, she did not find it a good investment of her time. “It wasn't the best. . . There was a lot of elementary things in there,” was how she described the experience. Amy shared an experience of how her instructor sang to her, and then encouraged the class to think of ways singing could be used in their future classrooms. She described feeling frustrated at how impractical the strategy was for the secondary classroom Stevie also took a literacy related course as an undergraduate; however, her experience was much different. She said:

That class . . . was one of my favorite non-Ag Ed classes. The teacher was phenomenal, and I got to use the [FFA] creed, . . . and I made a phenomenal lesson and absolutely loved it. . . it encouraged you [to use literacy].

She credited it with improving her teaching and helping her better understand the need to integrate literacy.

Beth, whose degree is from a different state, did have a literacy class, but she did not find it very impactful. What she did find valuable was how her agricultural education professors embedded literacy as part of the teaching methods class. Beth described it as, “in my mind, my methods class was probably far more valuable . . . We were given all different sorts of types of ways to add [literacy] into our class . . . it was nice.” Jane had a similar experience. She did not have a literacy course, but she did have agricultural education professors who included in it in the methods class. Jane said, “I would say it's more like embedded. We would do something and [the professors would] be like, ‘by the way, this is a good way to incorporate reading into your lessons.’ . . . it a constant thing.” The agricultural education professors sent the message literacy was an important part of the content area.

Sue did not have any undergraduate literacy coursework, but for her master's degree she did spend some time researching literacy and its importance in the content area classrooms. She was reflective of her experiences in the classroom as a graduate student which made her value literacy instruction. “I really think we need to go back and help the young people by giving them this in college so that way they don't fear it when they get out,” she offered.

Support Structures Utilized

After deciding to include literacy, the participants sought a variety of support structures. These structures provided participants with the insights, activities, and ideas needed to help them in the integration process. The structures enabled the participants to integrate literacy. Without them, the process would have been much more difficult, isolating, and possibly ineffective.

General Resources

When purposefully seeking out new ideas, the participants utilized fellow teachers and the internet. Other agriculture teachers were frequently mentioned as sources of advice and new ideas. Beth said, “I always enjoy [seeing] specific things that other [agriculture] teachers are doing that I can implement in my room.” Several participants explained it was beneficial to talk with other teachers about their experiences to understand how best to implement the activities.

They also discussed using the internet, specifically Pinterest and the National Association of Agricultural Educator’s (NAAE) Communities of Practice. Lea said, “I look on Pinterest sometimes but probably [NAAE’s] Communities of Practice is the best.” They expressed appreciation for having a platform specifically for agriculture teachers. It is important to note they initially look for new activities, not literacy activities, but they discussed how most new activities had some type of literacy activity included.

If the participants did seek out new activities, they needed several things before implementing it with their students. Beth said, “if there is an activity, I always like to see

a finished product or explanation of the finished product so I know which way we're going.” It was important for them to understand potential outcomes. Other teachers sharing literacy successes was influential. Sue said, “If I know it works, I'm going to buy into it.” By seeing how it worked for other teachers, the participants could better imagine how it would fit into their classrooms. When needed, they would modify activities to best fit their needs.

The participants described how certain curricula and course structures underscored the importance of including literacy into their lesson plans and at times provided them. Dual credit courses (taken for credit at both the high school and local community college) and embedded English credit classes had specific requirements they must include, while the aforementioned Curriculum for Agriscience Education (CASE) courses are heavily dependent on reading. For Amy, teaching a dual credit course means she has the freedom to “teach it as I see fit” but is expected to use the materials and resources (PowerPoints, readings, and worksheets) provided. Since the material is at a post-secondary level, Amy described needing to use additional strategies to help her students comprehend what they were reading. This was supported during field observation. While Amy used materials provided, she also took the time to support her students with several literacy strategies including list making and the construction of a graphic organizer.

Stevie used a lesson from *FFA New Horizons* magazine. Traditionally, the magazine has been directed at FFA members, but Stevie was very appreciative of the recently included teacher guides. “*FFA New Horizons* is phenomenal, and they have it broken out, and they have vocabulary and they tell you how to emphasize that. So I am

loving the FFA Horizon's curriculum. I don't use it enough," she shared. During the field observation, Stevie taught a lesson about the New Farmers of America (NFA) and FFA merger. She followed the teaching guide outlined in the magazine, but also took the time to add a personal touch to the lesson by including some social studies vocabulary. Social studies content vocabulary was included since the lesson focused on the integration of the two segregated youth organizations, with NFA serving African American students. A document analysis revealed the *FFA New Horizons*' student packet included a brief reading, an NFA timeline, comprehension questions, a writing activity focusing on processing and personalizing the NFA creed, and a conceptual map asking students to compare and contrast the two organizations. Lea also used a *FFA New Horizons* magazine article during her visit. The article she used did not have a set of teacher instructions, instead she used a generic article analysis activity.

District Resources

All participants stated during some point in their teaching career, their local school district had a literacy initiative for a year, which was typically not sustained. Amy reflected, ". . . we always move on to something else, initiatives don't last too long in [our district]." Others discussed brief trainings focused on improving student literacy, with most being a two-day event. Or in Lea's case, an initiative they were told about, but never received any training on.

However, Sue and Stevie were the exception. Sue's district had a literacy focus and funded a literacy coach who helped all the teachers in the building. She said:

We actually had a literacy coach. . . We did all kinds of teaching strategies . . . We did a lot of cooperative learning strategies which to me go hand in hand with literacy because they're going to come up with ways to get kids to read it with understanding. . . but then we ran out of money and that was that.

Sue felt her literacy coached helped her grow as a teacher and gave her useful ideas for her classroom. She also discussed the collaborative approach the literacy coach used. With the coach being gone and no one to facilitate collaboration, she feels intellectually isolated from the other teachers. Being in a separate school building did not help with her feelings of isolation.

Stevie's school district started a Professional Learning Community (PLC) with the focus of improving every students' reading ability over seven years ago. They still maintain the same PLC. She described the beginning:

We got our group together and our administrator asked, "What do you want to be the focus?" And we all said, "If you can't read, you can't do much. Reading is gonna (sic) be our focus." So you don't really hear about reading in high school very often but it's important.

She has held a leadership role in the PLC since its inception. She credits the program with helping her improve her literacy confidence and understanding of students. She said:

[Initially] I didn't feel ready or capable because as a tier two person, you're helping with every single block. You're not just working in Ag, you're trying to help a kid get their score up in history and English and you have to go back and try to figure out ... you must make it work.

The PLC decided to test all eighth-grade students to determine if they needed a developmental reading class, needed additional supports in a study hall (tier two), or were at grade level. She focuses her time helping students in a tier two study hall.

Stevie credits being part of her school's PLC with helping her integrate literacy. She reflected on the path her career might have taken without the PLC's support. She said, "I would have just been out here in my own little world . . . I would have just kept on doing what I was doing and hoping that it was working out. . ." The other participants also noted unless they made special efforts to get out and interact with other teachers, "you just don't see them much," as noted by Jane. Without interacting with other teachers, it can be hard to develop a community of practice or even become comfortable enough to ask for advice about incorporating literacy.

Stevie was reflective about how being part of the PLC has helped open her eyes to all the challenges students face. She is also more aware of the ways she needs to support her students by including literacy. Since implementation of the PLC, she has noticed a positive difference with her students. ". . . I can see reading scores going up and [students] being happier. What's the first thing you do when you have a weakness? You get angry or embarrassed. When you're embarrassed, you get mean. Just a great change," she volunteered.

Inspiration and Collaboration with Other Teachers

The participants described consciously seeking out and establishing a community of practice to help them better meet the literacy needs of their students, especially in the early portion of their careers. For some participants, initiatives at their schools made

creating a community of practice much easier. Stevie relied heavily on and used her PLC to guide her practice. The PLC focused on improving student literacy skills, which allowed Stevie to make changes to her instructional practice. She said, “When I got on this PLC . . . then I started understanding [what] I needed to do.” While she worked to include more literacy-based activities in her classroom, she utilized her peers within the school for guidance. She reflected:

I asked three [core subject area] teachers that I felt had good ideas because I had been in their classroom and I had seen something, and they were, but they were simple. Simple things that [can] make kids click and then our new incoming teachers, that's a great opportunity for them to learn about how they can put that into play.

She credited other teachers in her building with improving her practice. Stevie described how she still uses them if she has trouble or needs new ideas.

PLCs were not the only way schools encouraged teachers to collaborate. Lea had a similar situation. She said:

My first school was really, they really encouraged us to work together interdepartmentally. . . I actually got the opportunity to work with [the core academic] teachers and be like, hey, why don't you tell me what you use in your classroom and give me the opportunity to use that in mine.

The schools' set up and encouragement allowed Lea and Stevie to develop and maximize a community of practice.

The other participants lacked a school context that easily facilitated the development of communities of practice, but they still developed one. For Beth, the

science teachers were important members for her community of practice. “I used my science teachers a lot on that, especially if it was about writing or things like that, I would ask an English teacher too,” she explained. Amy described her community as a group of people who “you can share successes and failures with and sometimes get advice.” She explained how she valued being able to work through situations and activities with colleagues.

Sue, who has taught in several schools and established several communities of practice, had advice for those who were trying to start their own. She said:

I would say, "go watch a reading teacher, go watch a Language Arts teacher a good one, go watch a science teacher, go watch a math teacher." Now come back and try to implement some of their strategies that get kids to read and to be part of their lesson and to actually know the content.

For Sue, it was so important to watch how other people included literacy. She felt the more ways she was exposed to it, the better she could implement it her classroom.

Developing and cultivating a community of practice with core subject teachers was one way participants felt they could improve their classroom literacy practices.

Collaboration with other teachers was also important for participants. Stevie, who used a variety of literacy activities to teach a lesson on the NFA and FFA merger, described sitting down with her social studies teacher to find out “what these kids need reinforced” regarding the civil rights era and how best to do it. She explained how the social studies teacher had given her literacy ideas in the past. Stevie also described trying to collaborate on more than just the lesson I observed. She said:

I try hard with our teachers where we can bridge the gap and say, ‘Hey, in history you're going over this, so we're gonna (sic) learn the timeline and we're gonna (sic) go over this, too,’ so they can get double. In English trying to get, ‘Hey, are you doing something that has to do with this that I can put in Ag,’ and I think that's important, too.

Sue also described using literacy collaboration to strengthen the agriculture program and build relationships with other teachers. While she has not had the opportunity to collaborate much in her current school, she has experienced success in a previous setting. She said:

When I taught middle school I was really lucky to be surrounded by the reading teachers on one side of me and the science teachers behind me so one year we did a whole history unit on Ag. They learned about scientists in science class, the kids got to do murals on the wall of the different advancements in agriculture, and the reading teacher had them do some writing, and then social studies got involved and we had a history night. . .

Sue explained how she benefitted from engaging with other teachers. “I learned how to teach from them,” she said. Sue felt the collaborative activities, including those involving literacy, helped strengthen the program’s standing with key stakeholders.

Including Tier 2 words also helped the participants connect topics from agriculture to other classes. Stevie was exceptionally proficient in describing this approach. At her school, an English teacher uses weekly packets to build student vocabulary. Often, there is an overlap with topics discussed in agriculture, and Stevie is always eager to share it with her students. She said:

I will be like ‘Oh my gosh. You guys. This is in your packet. Did everybody see this?’ And then the kids are like, ‘Oh, yeah. That's Ag-related, too.’ So then they start getting the connection and I think that's pretty cool. I try hard with our teachers so we can bridge the gap.

Other participants also described the importance of helping students realize the connections between and among agriculture and other content areas. Stevie’s desire to help students understand Tier 2 words while making connections to other content areas was supported during field observations. While teaching a lesson on The New Farmers of American (NFA), the primarily southern agricultural youth organization for African American students that merged with FFA in 1965, she took the time to identify and discuss several terms found in the lesson, but also associated with social studies. The class discussion focused on understanding how segregation, desegregation, and integration looked in the context of agriculture, specifically with the NFA. This discussion helped students gain a richer understanding how agricultural education operated in the larger social context.

Stevie was unique among the participants. Despite all the participants focusing on helping students find and utilize high quality sources for research projects, she utilizes her school librarian to help her students evaluate sources. She volunteered, “Our librarian is phenomenal, and we actually take them over there and she'll teach them how to find out what a good source is and a good way to find your information.” She was the only participant who used collaboration to help students develop research skills. While other participants mentioned different teachers in the building may help students evaluate sources, Stevie leveraged their knowledge for the benefit of her students.

Learning from peers was important to participants. Discussing literacy activities with colleagues is currently lacking from the agricultural education profession as Stevie noted, “we don't go to Ag teacher's meeting and say, ‘Hey, what'd you do in your Ag Science that had to do with literacy?’ We should.” Beth focused on the importance of learning from those who have experienced success with an activity. She wants other teachers to:

Tell me where this didn't work for you or the things you had to change because I bet the first time you did it, it didn't go perfectly. . . I want to know about the reflection process. Tell me some things you did that didn't work for you, the mistakes you made because maybe it'll work with the kids I have, or I can avoid making that mistake.

Jane described it as “I always value that in our PD's, having time to work on it and then getting some feedback from other people and the person running the professional development.” They valued learning from their peers.

Beth and Lea noted they took several advanced ELA classes as high school students and how it has some influence of their beliefs and practices. Beth is one of the few teachers in the state of Missouri to offer an embedded English credit in an agriculture class. While her English class experiences do not drive specific day to day classroom procedures, she did note her experiences helped her decide to offer the embedded credit. Beth said the idea for the embedded credit resulted from a guidance counselor who was forward thinking and understood, “not every kid is going to go to college and we have to help them all.” Beth described realizing she could fill a void by collaborating with an English teacher and changing some assignments to fulfill the requirements of an

embedded English credit. As a high school student, she had a positive experience with English and wanted to ensure her students had one too. Beth believed agriculture as the vehicle to make it happen.

Lea took and enjoyed several writing intensive classes as a college student. “I took so many writing intensive classes I got a WI on my diploma,” she said. She also discussed how as a high school student she took and enjoyed several honors English courses, including one focusing on composition. Of all the participants, she had the strongest focus on student writing during her interview and classroom observation. She strongly identified with the process of writing and focused a lot of her classroom energy on it. Even during field observations, she took the time with each student to help make sure their bell work contained quality writing.

Lea had high school English classes which directly inform her practice and her beliefs about literacy. During her classroom observation and throughout her interview, she dedicated a large amount of time to help students improve their writing abilities, through a variety of written projects and the daily use of bell work. Improving student writing is not an easy task, in addition to using the English teachers in her building for ideas, she also relies on her high school experiences. “I had really great English teachers in high school, and I still try to use some of those things that I learned there when we talk about writing essays and stuff like that,” she volunteered. With each of her classes, Lea uses bell work with the primary focus of helping students develop good writing habits. During field observations, she posed the question, “What type of SAE are you most interested in starting and why? What are some challenges that might come with it?” to her Ag I students. Afterwards, she checked students’ writing for mechanics and content,

including sending some back to write in complete sentences and/or fix major grammatical errors. “That student is top in her class and I had to send her back to fix [her answer] because there was no capital letters or punctuation. They have to do it correctly otherwise what is the point?” she asked when discussing bell work. When asked about why she uses bell work, Lea responded:

I did it in high school. They started pushing writing when I was in high school because we had lower test scores, and that was something that we did. It just sets the tone. . . This is just me using something that I thought was important from my high school experience.

Apprenticeship of observation is not uncommon among beginning teachers. What is unique is that Lea’s secondary English experiences carryover into the agriculture classes she teaches.

Substantive Theory

A substantive theory was developed to describe the process of including literacy into agricultural classrooms. See Figure 4.1 for a depiction of the process. The participants identified drivers of practice, which were the reasons why they felt literacy should be included in an agriculture classroom. Despite its importance to participants, literacy integration was not instantaneous. They had to work through a variety of considerations. Often times, they felt the need to seek out support structures to help them work through some of their considerations. The support structures also help participants with their integration of literacy, specifically how to incorporate it. When trying to integrate literacy, participants faced common struggles that did not prevent them from

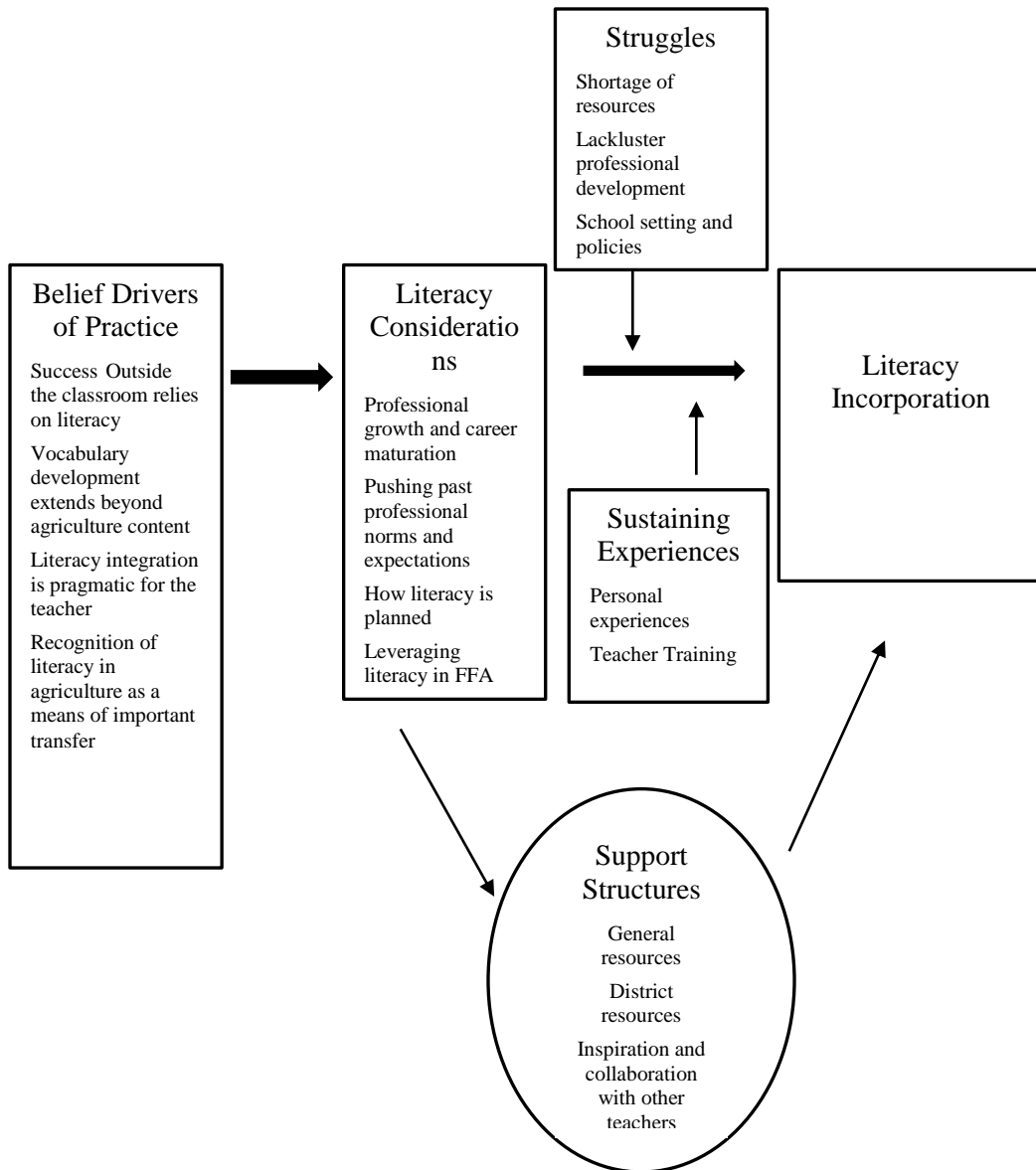


Figure 4.1 Substantive Theory of Agriculture Teachers' Literacy Integration Process

integrating literacy, but made the process slightly more challenging. However, they were also sustained during the integration process by common experiences. These experiences helped them stay intrinsically motivated to work through challenges and gaps in their knowledge.

CHAPTER 5: DISCUSSION

For the participants, literacy was a necessary part of the agriculture classroom. The process of including literacy was not necessarily a standard process for the participants, but unique to each of them. It was their classroom experiences which shaped their actions and beliefs (Shulman, 1987). Despite its uniqueness, all the participants described drivers of practice, literacy considerations, common struggles, sustainers of practices, and support structures used when integrating literacy. See figure 5.1 for a depiction of agriculture teachers' literacy integration process. There is no singular path to becoming a teacher of literacy, but all the participants shared beliefs, experiences, and practices which helped them in the process.

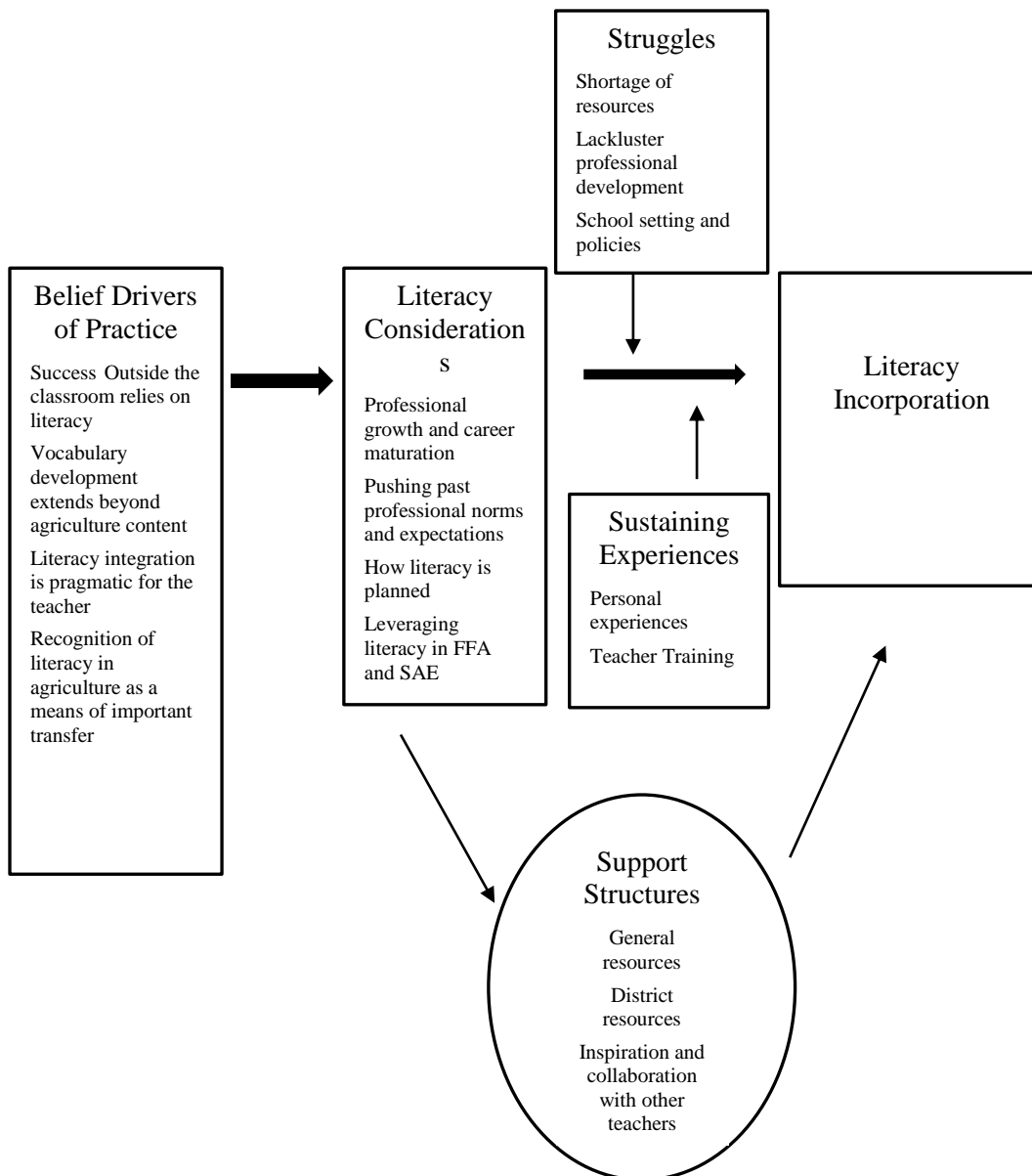


Figure 5.1 Substantive Theory of Agriculture Teachers' Literacy Integration Process

The participants easily recognized reading as an important component of literacy, and often initially identified it as the factor leading to literacy integration. This heavily skewed emphasis on reading mimics what literacy research has done for years: focus heavily on reading and not treating it as a complex phenomenon made of up

interdependent processes (Pearson, 2013). It is important they broaden their definitions and understanding of how literacy works. However, after some discussion and follow up questions, the participants eventually discussed the other components of literacy (writing, speaking, and listening) and the general purpose of literacy. Despite having a limited articulated definition of literacy, all the participants regularly used all four components of literacy in their lessons. The failure to articulate a full definition of literacy, yet clearly use all the components, may indicate the teachers do not fully recognize the depth of their knowledge (Eraut, 1994). This incomplete working knowledge of literacy may prevent them from fully capitalizing on all the literacy opportunities present in their lessons. Pre-service agriculture teachers should receive training on understanding what literacy is and how we use it in the profession (Park & Osborne, 2006a). Additionally, professional development opportunities should be offered to help in-service teachers better understand the variety of ways they use literacy in their classrooms.

Preparing college and career ready graduates has always been a goal of education (Darling-Hammond & Bransford, 2005). Participants recognized their students would need literacy skills to be successful after high school, which in and of itself may not be novel. However, the approach and motivation behind this belief may be unique or different in comparison to other teaching disciplines. Depending on which path (college or career) they believed students would take, informed how the participants approached literacy. If they were headed to college the teachers worked to develop the skills needed to be successful in a text driven learning environment. For those entering the workforce, they focused on skills needed (reading contracts, etc.) in a professional setting.

Helping students become informed consumers was important for all the participants. They used literacy activities to help students determine factual and accurate information. They all used the phrase “fake news” either in interviews or when talking with students about how to evaluate sources. The current political discourse has fostered a stronger desire to equip students with the tools needed to critically evaluate information. However, the need for and importance of information literacy, especially in the agriculture industry, is not new. While the participants focused on developing students’ evaluative skills, they still worried it would not be enough. Stevie’s approach to helping students evaluate sources was novel compared with other participants. Her work on the Professional Learning Community (PLC) reinforced the belief that the development of literacy skills is a social activity and requires a team approach (Aulls, 1985; Heller & Greenleaf, 2007). Her willingness to engage the experts (her librarian) helps maximize student learning (Brozo, Moorman, Meyer, & Stewart, 2013). Teachers should be encouraged to develop relationships with, and when appropriate, use literacy experts within the school. Collaboration between content and literacy experts benefits all students (Brozo et al., 2013).

The participants believed literacy skill development was the responsibility of all teachers, which aligns with current research (Hasselquist & Kitchel, 2016c). Students have traditionally viewed literacy skills as non-transferrable from one subject area to the next (Moje, 1996). However, the participants hoped by including literacy in their classrooms they could begin to improve students’ literacy skills while helping them realize how literacy is integrated into society. People use literacy in their professional and

personal lives (Buehl, 2011) and the participants wanted their students to recognize its role in life after high school.

The decision to include a vocabulary was slightly different from the decision to add literacy. While the need to include content specific vocabulary, Tier 3 terms (Fisher & Frey, 2009), is not new (Buehl, 2011), the choice to include other, non-specialized vocabulary, Tier 2 terms (Fisher & Frey, 2009) was emergent from this study. Possessing a working understanding of terminology and language used in a content areas or disciplines allows people to better communicate with industry professionals (Adams & Pegg, 2012; Shanahan & Shanahan, 2008). The unique vocabulary associated with agricultural education is part of disciplinary literacy (Adams & Pegg, 2012; Buehl, 2011). If agriculture teachers do not take the time to include specialized vocabulary or Tier 3 terms in their classes, then students have very little chance of learning them due to the specialized nature of the terms.

The participants integrated Tier 2 words and literacy skills because of an identified need. As they transition from teacher-centered to student-centered concerns (Hammerness et al., 2005) they became aware of shortfalls in students vocabulary and decided to address in their classrooms. They described integrating Tier 2 vocabulary because they are part of the larger school community. They felt the more students were exposed to a wide variety of terms, including those from other content areas, the more familiar and comfortable they become. The participants realized literacy development is inherently social (Aulls, 1985; Heller & Greenleaf, 2007) and see themselves as part of a larger school community and therefore, work to maximize all teachers' lessons (Shulman,

1997). The idea of supporting other content areas surfaced in several times throughout the study.

Participants believed in the practical, purposeful, yet subtle incorporation of literacy into their agriculture classrooms. They sought to include literacy in ways that were reflective of how literacy is used in industry. While other content areas believe literacy inclusion should be purposeful and obvious to the students (Shanahan & Shanahan, 2008), the participants believed the opposite. The subtle inclusion was important to helping students overcome the potential stumbling block of being “bad at English.” The participants worked to find careful, measured ways to include literacy in all their classes. Despite the long-held belief that literacy inclusion runs counter to the hands-on nature of agricultural education (O'Brien & Stewart, 1990), the participants believed literacy enhanced hands-on learning. They understood literacy helped their students be successful and took the time to implement it in their classes, even the traditional hands-on ones (e.g. agricultural mechanics). It is possible other areas of CTE approach and treat literacy the same way; however, little research exploring the disciplinary literacy of CTE fields exists.

Developing students' soft skills and Tier 2 vocabulary were purposeful, yet subtle ways participants included literacy. Participants believed a strong general vocabulary was essential for life, and found ways to building their students' general vocabulary through innovative and fun activities, such as “word of the week” and games. When they focused on soft skill development, it was done in the context of a real-world setting. It was important for participants that their students could apply literacy-based soft skills beyond the classroom.

Their use of technical texts, reflective of industry norms, is another way they purposefully, yet subtly included literacy. Technical texts have been traditionally used by agriculture teachers (Park & Osborne, 2007b). The challenge with using industry text (e.g. equipment manuals) or other technical texts is their complexity and high reading level (Park & Osborne, 2007b). To maximize their impact, it is important to give teachers activities and strategies to support students during their encounters with challenging texts. During field observations, participants used a variety of ways to help students process their readings. For the participants, their definition of text has expanded beyond written words to include podcasts and video recordings (Moje et al., 2000). Since the definition of text has expanded to include non-traditional items, new strategies should be developed and existing ones modified to help students learn from the new mediums. Professional development should also be offered to help inform in-service teachers about non-traditional text resources and how best to support their students during their usage.

Agricultural education is represented as a three-circle model, with the circles of classroom, FFA, and SAE intersecting and overlapping to maximize student learning (Phipps et al., 2008). Using literacy in the classroom is a standard practice for many agriculture teachers (Hasselquist & Kitchel, 2016c); however, this was the first time teachers articulated how literacy appears in other areas of the model. Even though the FFA creed is taught in the classroom, it is important to note the participants took time to help the students understand its meaning. FFA awards and SAE record books require unique writing skills and styles, making them a part of agricultural education's disciplinary literacy. Participants only discussed a few ways FFA and SAE are supported by literacy. Many agriculture teachers use a wide variety of embedded literacy activities

across the three-circle model, but they fail to notice them. One possible explanation is their limited definition of literacy. Since they only focused on reading, they may overlook the many ways literacy finds its way into the three-circle model. For example, FFA State degree requires the recipient to complete a public speech (National FFA, 2016). Special consideration should be placed on Sue's situation. To promote agriculture awareness at a local elementary, she transitioned away from a traditional FFA event to a literacy focused activity. With more schools placing an emphasis on literacy building skills (Pearson, 2013), it is possible this may become a pattern with other FFA Chapters. Research should be conducted to determine the types of supports they need as they transition to this model.

Additionally, participants discussed how literacy integration may not be a conscious choice, sometimes it is viewed as a way to maximize learning through good teaching. Meaning, teachers could possibly use literacy on a regular basis while failing to recognize it. This gap is closely aligned with an incomplete definition of literacy, which may lead to failure to fully capitalize on all the literacy opportunities. The participants developed a literacy maxim (Shulman, 1987). They recognize literacy as part of good teaching, but lack the technical knowledge to explain why it works. Would increasing in-service and pre-service teachers' awareness of literacy and associated practices bring about an increase in the amount of literacy practice used by agriculture teachers? It would develop their background knowledge and help them understand why literacy is a part of good teaching?

Integrating literacy did not happen automatically for the participants, it took time and classroom experience. The first few years of teaching are challenging for many

people, and the participants were no different. It is impossible to expect college preparation program to cover everything new teachers need (Darling-Hammond & Bransford, 2005), which caused some of the participants use literacy to compensate for personal knowledge gaps. Further investigation is warranted to help determine how often literacy activities are used to help compensate for a teacher's lack of content knowledge. It was should also be explored if the use of literacy activities helps to develop pedagogical content knowledge (PCK) for beginning teachers, or if the activities are used as a stop-gap with no long-term influence over practice.

The first few years of teaching are overwhelming, with the primary focus on surviving the classroom (Hammerness et al., 2005). As the participants moved from the “surviving to thriving” stage, they could consider making curriculum and content adjustments to best serve students' needs. As they moved out of the early career stage and into the experienced teacher stage, they had a better understanding of student learning, content, and pedagogy, which allowed them to reexamine their lessons (Hammerness et al., 2005). The familiarity with content is important to develop PCK, identify the best way to teach the material (which could potentially include literacy activities), and move away from the apprenticeship of observation (Eraut, 1994; Hammerness et al., 2005).

Time in the classroom provided participants with confidence in their own abilities and a deeper understanding of technical content (Darling-Hammond & Bransford, 2005). The teachers also described a growing awareness of students, student learning, and more student related concerns. The directional shift from teacher-centered to student-centered concerns (Hammerness et al., 2005) was important for literacy integration. Participants became aware of student struggles, which motivated them to find solutions. Increasing

teacher confidence allowed participants to feel comfortable making changes and including more literacy. Growth in content knowledge was important because it freed up additional time, normally spent learning content, to construct new lessons and activities to support students. As they became comfortable and confident in their classrooms, it was much easier to integrate literacy (Hammerness et al., 2005). They were not worried about having a perfect lesson or activity, they just wanted to start exposing their students to literacy in a variety of ways. After the lesson, they would reflect and modify the activity for next time (Chambers Cantrell, David Burns, & Callaway, 2008; Santamaria et al., 2010). Future research should focus on how student-centered teaching approaches influence literacy integration. Is being prepared and comfortable with a student-driven learning environment part of the literacy integration process or does it have to precede it?

Time in the classroom enabled the participants to develop a comfort level with the content and pedagogy used (Shulman, 1987), which allows teachers to instinctively add activities to their lessons, some of which is literacy based. According to Schon (1983), viewing literacy as part of good teaching is a “knowing-in-action” behavior for the participants. Their experience in the classroom helped them create maxims surrounding literacy (Shulman, 1986). Since they consider it part of good teaching, does this mean literacy has some relationship to PCK or do they consider it a generally pedagogical strategy? In future PCK research, special attention should be paid to determine if and how literacy is part of pedagogical content knowledge. Additionally, a review of PCK literature would be beneficial in determining if there is a connection between PCK and the use of literacy in the content area classroom.

Participants reported being part of traditional programs in high school with a heavy focus on production agriculture and FFA events, and very few literacy activities. Preparing students to return to the family farm or begin a career agriculture has been the focus of agricultural education since its origins in 1917 (Phipps, Osborne, Dyer, & Ball, 2008). What is unfortunate is the lack of literacy activities to build technical knowledge. However, this is not completely unexpected.

Historically, a very small percentage of agriculture teachers have completed college coursework related to literacy (Park & Osborne, 2007a). Without training and a knowledge base, it is very unlikely that teachers would independently begin to incorporate literacy activities (Park & Osborne, 2007a; Park & Osborne, 2006a). Field observations confirmed participants taught in progressive agriculture programs, with a focus on preparing informed consumers for college and career success. A shift in the purpose of agricultural education may explain why experiences as agriculture students had very little influence over classroom practices. This is a departure from previous research which found teachers rely on their experiences as students to help inform their classrooms practices (Eraut, 1994; Hammerness et al., 2005; Rice, 2015). Another possible explanation for the lack of influence could be the participants' incomplete definition of literacy. Not having a complete working definition of literacy can negatively affect their ability to determine if literacy activities occurred, which may lead to missed opportunities to capitalize on literacy present in a lesson

Even though participants student taught at traditional programs or had traditional classes in their agriculture programs, they still believed in and included literacy. They felt it belonged in every classroom, and an attitude more agriculture teachers have begun to

share (Hasselquist & Kitchel, 2016c). Traditionally, even mid-career teachers rely on programs they have been a part of to shape how they approach their content (Rice, 2015). However, the participants were more progressive in nature and added literacy into all their classes despite never experiencing integration as a student teacher. To continue this trend, in-service and pre-service teachers should be provided with activities that can be easily integrated into traditional hands-on classes. When placing student teachers, special consideration should be given to progressive programs and teachers who regularly integrate literacy. This purposefully placing of student teachers could help to improve the profession norms surrounding literacy and help beginning teachers develop a stronger concept of literacy in the agriculture classroom. Even though the lack of literacy integration in their student teaching placements did not prevent the participants from using literacy, the more teachers are exposed to literacy the more likely there are to include it (Santamaria et al., 2010).

Content was always a priority for teachers (Darling-Hammond & Bransford, 2005). Once they have decided what to teach, the decision to include literacy was based on the best way to teach the technical information. This is similar to associative mode of knowledge (Eraut, 1994), where they possess a practical knowledge of what their students need and sometimes seek creative solutions to fill it. Since pedagogical content knowledge (PCK) is identified as the best way to teach technical content (Darling-Hammond & Bransford, 2005; Roberts & Kitchel, 2010), it could be argued having a wide knowledge of literacy activities and strategies is an important component of developing PCK. The participants easily used content area literacy and disciplinary literacy strategies without recognizing it. It is important to note sometimes literacy

activities were used as a vehicle to communicate the content, not to improve student literacy skills. A singular focus on content means missed opportunities to explain how literacy activities and skills are transferrable to life outside of the classroom. Without this generalization, students may struggle with technical texts after high school, since students often fail to generalize literacy skills and activities outside a specific classroom (Moje, 1996). Helping the teachers become aware of the different activities they use and how they can better help prepare students for life after school is important. Efforts should be made to make in-service teachers aware of the importance of helping students generalize and transfer literacy skills to experiences outside the agriculture classroom.

Variety was an important consideration when the teachers selected instructional approaches. It is important for the teacher to model lesson engagement for students since they are known to adopt their teachers' attitudes on specific topics (O'Brien, Stewart, & Moje, 1995; Park & Osborne, 2007). By choosing a wide variety of instructional and literacy activities, they also hoped to reach a wide range of students.

The participants used past success with literacy activities as encouragement to continue using them, which is not uncommon among other content areas (Chambers Cantrell et al., 2008; Heller & Greenleaf, 2007). As their comfort level increased with strategies the more often they would use them, which aligns with literature (Chambers Cantrell et al., 2008; Santamaria et al., 2010). They also reported if they believed an activity could have a positive influence on their students, even a negative classroom experience would not dissuade them, unlike other content areas (Chambers Cantrell et al., 2008). They also reported modifying and changing activities to meet specific classroom

and lesson needs (Santamaria et al., 2010). The modification process allowed them to maximize student learning by appropriately supporting them.

Several student factors informed participants' use of literacy activities. Knowledge of individual students and class dynamics played a role in the selection process. As teachers shifted from a teacher-centered to student-centered concerns (Hammerness et al., 2005), they used their knowledge of individual students and classroom dynamics to inform literacy integration. Stevie was the only participant to vocalize how her thinking has changed during her career. As a young teacher, she accepted students' literacy struggles as "just the way it is." Now she has the knowledge and internalized desire to support and improve students' literacy skills. By being a part of the Professional Learning Community (PLC), she gained a deeper insight into the struggles students face and the importance of being a teacher of literacy (Darling-Hammond & Richardson, 2009).

Adaptive expertise and reflection were important for teachers who taught multiple sections of the same class (Hammerness et al., 2005; Schon, 1983). Their adaptive expertise allowed them to maximize the lesson for each section (Hammerness et al., 2005). When making lesson adjustments, they considered multiple factors, similar to associative mode of knowledge (Eraut, 1994). They possess practical knowledge of what their students need and seek creative solutions to maximize student learning. Additionally, the participants' reflective thinking allowed them to modify activities and identify potential problem spots. Instead of doing the same activity repeatedly, they sought out new ways to make the learning experience more impactful for students. Future consideration should be given to hosting professional development workshops on helping

teachers become adaptive experts in their classrooms with specific literacy activities. For example, being able to modify a graphic organized based on lesson content, knowledge of the organizer (intended purpose, etc.), and intended student learning outcomes.

Participants took failure as an opportunity to learn, grow, and become better teachers of literacy. Traditionally, literacy failures have made teachers hesitant to use it with their students (Chambers Cantrell et al., 2008), which supports the premise of my model in that literacy adoption is not a singular event, but a larger, complex process. Reflective thinking about the process and how it should be improved allowed participants to continually evolve their practice (Schon, 1983). Reflective thinking is important for continued professional growth (Darling-Hammond & Bransford, 2005). Support should be provided to pre-service teachers to help them develop reflective thinking, with special consideration given to failed activities and lessons. Teacher educators should verbally model a post-lesson reflection to help pre-service teachers understand the types of questions that should be asked. One recommendation for practice is to include reflection questions regarding literacy to microteaching experiences and student teaching journals.

Student resistance to literacy was a challenge encountered by all participants. While other teachers reported being deterred by student resistance (Chambers Cantrell et al., 2008), participants worked to find relevant readings and unique ways to embed literacy into their lessons. One key to overcoming student resistance was consistency in using and clarity of expectations. Participants described how holding students accountable allowed them to develop content knowledge and realize literacy activities are part of the agriculture room, reinforcing the idea that literacy is a communal effort (Heller & Greenleaf, 2007; Park & Osborne, 2007b).

Participants expressed a strong desire to find and aggregate current event articles related to agriculture topics. To use an article, teachers must search through individual newspapers, magazines, and extension documents to find an appropriate one. The problem was not the number of sources to collect readings from, but the time needed to find an article. Therefore, I recommend creating an online collection of current articles teachers have successfully used with their students, possibly through NAAE's Communities of Practice.

When participants sought out new activities, they expressed frustration at their lack of knowledge and resources. They believed literacy was important and wanted to incorporate into their classrooms, but lacked the proper tools. Providing in-service teachers with a variety of strategies to use their classrooms is important. For teachers to integrate literacy, they must be efficient with a strategy and innovative enough to use it in a variety of ways (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005). In-service teachers should be made aware of existing resources that contain easy to implement literacy strategies and activities as they build their repertoire for literacy integration.

Positive experiences in a high school English classroom influenced Beth and Lea. Beth worked to provide her students with a positive literacy experience through an embedded English credit class, while Lea easily identified specific ways her experiences carry over into classroom and instructional practices. These literacy experiences helped shape their apprenticeship of observation (Hammerness et al., 2005). Relying on apprenticeship of observation is common in younger teachers, since they are overwhelmed with the responsibilities associated with being a teacher (Eraut, 1994). Lea, who had the least experience of all the participants, chose to integrate bell work because

she had a positive experience with it as a student and felt it could benefit her students. This replication was not done out of necessity or survival, it was purposeful in its nature. Rice (2015) found agriculture teachers identified high school experiences as an influential in shaping their classroom practices. Lea is unique since she took activities from an English class and adapted them to her agriculture classroom.

Beth and Amy, the only participants not to ask me for literacy resources, have over ten years of experience and are considered mid-career teachers (Darling-Hammond & Bransford, 2005). Is it possible their career stage has made them less likely to seek out new practices? Conversely, Jane, who also has over 10 years of experience, actively sought out new ways to improve her practice. Is Jane in the process of becoming an expert teacher while Beth and Amy are still in mastery (Darling-Hammond & Bransford, 2005)? Research should be conducted to determine why some mid-career teacher actively seek out new techniques while others are content with current practices.

With time being a limited resource for teachers (Baker et al., 2008; Eraut, 1994; Shulman, 1988; Shulman, 1987), participants reported prioritizing required paperwork and other obligations over the need to find literacy activities and texts. Previous studies found time was a barrier for literacy integration (Baker et al., 2008; Freedman & McLeod, 1988; Phelps, 2005). Participants expressed concern about not having time find new strategies and activities. They relied heavily on other teachers with literacy related experience (Putnam & Borko, 2000; Shulman, 1988; Shulman & Shulman, 2004). They maximize their limited time by returning to people or websites they have been successful with in the past. To accommodate for limited time, pre-service programs should equip students with several simple strategies that can be adapted for a variety of settings. In-

service teachers would benefit from a clearinghouse containing CTE appropriate activities and strategies. A centralized location would help reduce the time needed to find new activities. The potential of aggregating literacy activities on NAAE's Communities of Practice could be explored to maximize teachers' time and resources.

All participants taught in a school with a literacy initiative, which is common among agriculture teachers (Hasselquist & Kitchel, 2016c), and had attended district-sponsored, literacy-focused professional development. While the participants reported gaining a few ideas from those experiences, it was not deemed impactful. Even though district-sponsored professional development was perceived as ineffective, it is possible the participants are not aware of how it benefitted them (Guskey, 2000). For example, despite saying it was not beneficial, all the participants demonstrated a rich implicit understanding of literacy, meaning they potentially have a large literacy knowledge base, but cannot articulate it (Schon, 1983). One possible reason for the lack of influence is the brevity of the professional development experiences. Length of time is an important factor in bringing about long-term teacher change (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001; Guskey & Yoon, 2009). The sustained initiatives, the PLC and the literacy coach, were the only professional development experiences participants deemed beneficial. Another possible factor in the lack of influence was obligatory attendance. Participants attended the professional development events because it was an obligation. The forced participation may have also decreased their buy-in, a key component of listening engagement (Hasselquist & Kitchel, 2016b).

The participants were selected for this study because of their reputations of using literacy in their classrooms, yet none of them had attended literacy focused professional development outside the local school district, a departure from previous research (Hasselquist & Kitchel, 2016c). Typically, there is a positive relationship between the belief that literacy skills supports agriculture content and attendance of external literacy focused professional development (Hasselquist & Kitchel, 2016c). A logical explanation as to this deviation from literature did not emerge. Therefore, this requires special attention in future research.

The two schools that sustained and monetarily supported literacy professional development programs had positive outcomes their teachers (Desimone et al., 2002). Through a collaborative environment, Sue learned and implemented new literacy ideas to help strengthen her classroom (Darling-Hammond & Richardson, 2009). Being a part of a Professional Learning Community (PLC) allowed Stevie to develop a deeper of understanding of how to improve her instructional practices and provide more support to students who struggle with literacy. PLC have a history of helping support instructional changes (Darling-Hammond & Richardson, 2009).

In the past, agriculture teachers felt pressured to include literacy when working a district with a stated literacy initiative (Park & Osborne, 2006a). However, Sue and Stevie enjoyed being part of sustained and supported literacy programs and did not feel pressured. Literacy inclusion emerged organically because of the supportive environment. Finding a way to replicate the sustained and supportive environment experienced by participants is important to help all agriculture teachers move from pressured integrator to literacy advocate. A strong community of practice is helpful for

teachers who seek to make changes to their practices (Desimone et al., 2002; Garet et al., 2001). It is important to find ways to facilitate supportive communities of practice to make those changes happen (Darling-Hammond & Richardson, 2009).

Participants described the most beneficial professional development experiences for their literacy practices did not focus on literacy, but included literacy as an addendum item. They appreciated seeing literacy-related ideas they could easily insert or replicate in their classrooms, in addition to seeing literacy-related activities in context. Being able to replicate activities without adaption or modification is considered the earliest mode of knowledge (Eraut, 1994), and important first step towards literacy integration. In the replication stage, they do not need an in-depth working knowledge of the literacy or the activity, they can simple replicate the activity in their classes, sometimes referred to a “drop-in activity.” The Curriculum for Agriscience Education (CASE) trainings focus on developing a working knowledge of the curriculum, but have the added benefit of literacy exposure. During CASE training, facilitators model curricular activities using literacy strategies from their classrooms. This allows teachers to become familiar with strategy, see it the context of an agriculture classroom, and experience it from a student’s perspective.

It is important for agriculture teachers to see strategies modeled to develop comfort and familiarity with them, two things needed for classroom integration (Santamaria et al., 2010). Teachers value easily replicated activities, and care should be taken to provide teachers with such activities. While not developing a deeper understanding of how a literacy activity works is regrettable, getting teachers to include some literacy is an important first step. When introducing new literacy-related activities

to agriculture teachers it should always be done in the context of lesson or agricultural content. During professional development, time should be given for teachers to reflect, incorporate literacy into one lesson, and receive peer feedback (Borko, 2004; Desimone et al., 2002; Garet et al., 2001; Guskey, 2000; Shulman, 1988).

Based on this study, there are several recommendations for a literacy focused professional development activities for CTE and agriculture teachers. Facilitators should understand secondary classrooms and needs of secondary students. Several participants noted at times there was a disconnect when between elementary and secondary teachers. Facilitators should also be familiar with the hands-on nature of the CTE classrooms and be able to give examples of activities in an agriculture context. Strategies and activities should be presented in the context of an agriculture lesson to help participants gain an understanding of what it would look like in their classroom. Time should be given after each activity for participants to reflect and discuss how it could be used in their classrooms. Finally, time should be included in the schedule for in-service teachers to update a lesson plan to include literacy activities. It would be beneficial to allocate some time for participants to receive feedback and advice concerning their lessons.

The physical distance between agriculture departments and the rest of the faculty was problematic and led to feelings of intellectual isolation. The physical and intellectual isolation agriculture teachers commonly face may seriously hinder relationships needed to support literacy integration (Schon, 1983). The lack of collegial relationships may make it difficult for teachers to ask for guidance. Their isolation underscores the importance of district-based mentoring to help the new staff members assimilate into the larger school community (Hammerness et al., 2005). Successful communities of

students/learners are associated with a community of teachers (Borko, 2004). Agriculture teachers must be included in the community.

A teacher's personal literacy experiences cannot be discounted (Hall, 2005). Personal struggles informed how they approached literacy with their students. Stevie was very open about her struggles with the students, while Sue was very conscious of the importance of supporting all students. She recognized how finding her own go-to literacy strategy was important for her academic development, and helps her students find their own go-to literacy strategy. Amy's personal experience with her grandfather allowed her recognize reading as an important aspect in becoming a lifelong learner (Buehl, 2011; Schmoker, 2011). The participants' personal experiences were not solely defined by struggles.

While all the participants identified as readers, only Beth and Stevie described making conscious efforts to include leisure reading as part of their regular routine. Agriculture teachers often identify themselves as readers (Hasselquist & Kitchel, 2016c). Besides the personal benefits of reading, teachers who identify as readers are more likely to view it as an instructional tool (Park & Osborne, 2006a). Despite being a reader and seeing literacy as an instructional tool, it was not influential in how often agriculture teachers used literacy in the classroom (Hasselquist & Kitchel, 2016a). This gap can best be explained through the participants' responses. They enjoy reading, but do not prioritize it. The lack of prioritization in their personal lives could be why they also fail to prioritize and include it in their classroom practices (Park & Osborne, 2006b). Stevie's prioritization of literacy arose from her desire to model it for her students. She has also entered the mid-career phase of teaching and begun to develop expertise (Darling-

Hammond & Bransford, 2005). This transition provided her some free time due to the decreased time needed to plan lessons and learn content. If time is a limiting factor (Eraut, 1994; Shulman, 1987), agriculture teachers need resources to help them easily integrate literacy into their classrooms. An early investment of time is beneficial for the agriculture teachers. As teachers become more comfortable with literacy strategies, the less time it takes for them to include it in the classroom (Chambers Cantrell et al., 2008; Hasselquist & Kitchel, 2016c). Since time is such a limited resource, finding ways to collect and disseminate strategies must be explored. Potentially, the less time it takes for teachers to seek out new materials, the more likely they are to include literacy.

Jane's enjoyment and use of educational podcasts is an illustration of how the definition of text is changing (Moje, Young, Readence, & Moore, 2000). Her love of educational podcasts has an influence over her classroom practice. Readers are more likely to view reading as a teaching tool (Park & Osborne, 2006a), does the same hold true for teachers who listen to podcasts or is Jane an outlier? Future research should be conducted to determine how podcasts are used in the classroom and if factors of influence exist.

For participants who completed literacy-related coursework, the instructor's approach influenced how the class was perceived. Facilitators have a large impact on professional development programs (Borko, 2004), the same argument could be made concerning course instructors. For participants, the most effective literacy instructors approached reading from a secondary perspective and helped them develop lessons and knowledge they could use in the classroom. Efforts should be made to recruit literacy

instructors with secondary school experience with the intention of helping pre-service teachers develop the necessary knowledge needed to include literacy in the classroom.

Communities of practices are often associated with individuals who have attended the same professional development or teach the same content. When the participants established their communities of practice, they did not reach to those groups. They utilized the core teachers in their community. Little is known about how agriculture teachers form their communities of practice outside professional development. This type of networking behavior may be come for other types of teacher concerns (e.g. classroom management); however, we do not know. It was their professional relationships with individuals in their buildings that allowed them to improve their practice. The participants were purposeful in seeking out fellow teachers who they felt help could help them. They felt it was necessary to look outside of agricultural education, possibly due to the profession's reluctance to include literacy, to find activities and strategies that could be modified and used within the agriculture classroom. How often do professional relationships among teachers in a building have a direct influence on classroom activities?

Communities of practice were developed in response to students' literacy needs. Participants partnered with core academic teachers to help improve their practice (Darling-Hammond & Richardson, 2009; Desimone et al., 2002; Garet et al., 2001), typically including an English or Language Arts (ELA) teacher. By using and learning from experts in the literacy field, participants found new and different ways to include literacy and maximize learning in the content area (Brozo et al., 2013; Hand & Prain, 2002; Moje, 1996). All participants reported gaining activities and ideas from fellow

teachers, many of which contained aspects of literacy. It also helped them develop an emotional support network, which is important for job satisfaction (Hasselquist, Herndon, & Kitchel, 2017). While they are improving their classroom practices and student learning, they are unintentionally developing important relationships which may sustain them over their careers. For pre-service teachers, special consideration should be given to restructuring general teacher education classes to promote collaboration among the content areas by providing students the opportunity to work with other pre-service teachers.

Finally, it is important to note the participants in this study were considered to be high literacy implementers by their peers. It is possible their attitudes, beliefs, and practices are not representative of a “typical” agriculture teacher. Future research should be conducted with a larger participant pool to determine if this process is followed by other agriculture teachers. Despite targeted recruitment, the participants for this study were entirely female. In future studies, special attention should be paid to male teachers who integrate literacy to determine if their process is any different.

APPENDIX A: LETTER OF CONSENT

Exploring Agriculture Teachers' Classroom Literacy Integration Process

Consent to participate in research study

You are being invited to take part in a research study exploring how professional development experiences and other factors translate into classroom literacy practices of agriculture teachers. If you volunteer to take part in this study, you will be one of about 8 people to do so.

The person in charge of this study is Laura Hasselquist of the University of Missouri Department of Agricultural Education and Leadership, under the advisement of Drs. Tracy Kitchel and Anna Ball. We hope to examine the process of how of agriculture teachers come to incorporate literacy practices in their classroom.

The research will be conducted using various forms of data and will take place over one week. The first portion of data collection will a thirty-minute pre-observation interview, the second portion of data collection will be conducted through one observation of two regular class periods. The third portion is a sixty to seventy-five minute semi-structured post-observation interview. The interview will be audio recorded for transcription purposes only and you will not be identified in the study. The final portion of data collection is artifact collection. Any materials or notes associated with classroom literacy practices will be collected. These documents can be scanned and given to the research during the site visit or emailed.

Information gathered from this study may be reported in academic articles or papers. To the best of our knowledge, the things will be doing have no more risk of harm than you would experience in everyday life. Your willingness to take part may help researchers better understand this topic and provide higher quality professional development experiences.

We will make every effort to keep private all research records that identify you to the extent allowed by law. Your information will be combined with information from other participants in the study. When we write about the study to share with other researchers, you will not be personally identified in anyway. We may publish the results of the study; however, we will keep your name and any identifying information private. Only Drs. Kitchel, Ball and Laura Hasselquist will have access to any data collected, any audio tapes, transcribed interviews, literacy artifacts, and field notes. All transcriptions and data will be kept in a locked office and password protected computer.

Refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Before you decide whether to accept this invitation to take part in this study, please ask any questions that may come to mind immediately. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the principal investigator, Laura Hasselquist or advisor, Dr. Tracy Kitchel at 614-292-6909. If you have questions about your rights as a volunteer in this research, contact the staff in the Office of Research Campus Institutional Review Board at the University of Missouri at 573-882-9585. If you wish to contact someone not involved with this study, please contact Dr. Jon Simonsen at 573-884-7375.

Signature of person agreeing to take part in study

Date

Printed name of person agreeing to take part in the study

Laura Hasselquist, Primary Investigator

Name of [authorized] person obtaining informed consent Date

Signature of Investigator

APPENDIX B: INTERVIEW PROTOCOL

Interview Protocol

Pre-Observation

1. Tell me about your background as an agriculture teacher.
 - a. What was your ag program like when you were in school?
 - b. What was the program you student taught in like?
 - c. What is your background regarding literacy (personal habits, coursework, etc.)?
2. How do you define literacy and literacy activities?
 - a. How did you define literacy as a beginning teacher?
 - b. Has that changed over time? How?
 - c. Did anything cause those changes?
3. When you hear the phrase “all teachers are teachers of literacy,” how do you feel about that?
 - a. Is there ever a time when literacy doesn't fit/belong in a classroom?
4. Can you describe your attitude about literacy to me?
 - a. Has your attitude, regarding literacy, ever changed during your career?
 - b. What were some key moments or experiences?
 - c. What would you tell a student teacher about literacy integration?
5. Describe your literacy related professional development experiences for me?
 - a. Where they impactful in any way?
 - b. Why did you choose to attend? What factors played a role in your decision?

- c. Where you exposed it any ideas or information that made you reflect on your own teaching?
 - d. Have you ever attended professional development where literacy wasn't the main focus, but it was included? Tell me about that experience(s)
6. I asked you to design the “perfect literacy professional development for agriculture teachers,” what would it look like?
- a. What would be your ultimate goal?
 - b. Why did you select those topics?
7. What do you wish would have known at the start of your career regarding literacy?
8. What should pre-service teachers know about literacy?

Post-Observation

1. Earlier today, you did X. Walk me through process that deciding to use a literacy strategy, selecting it, and what you hoped to accomplish with it.
- a. Were you as successful as you hoped? What changes would you need to make to be successful?
 - b. How will today's success (or lack of it) influence future literacy-related activity decisions?
2. How else do you use literacy activities in your classroom?
- a. Why do you choose literacy?
 - b. How do you choose the activities?
 - c. If you want to incorporate a new activity, where you would go for ideas and why?

- d. What do you need to know to use a literacy strategy?
 - e. Have you run into in challenges in implementing new activities? How did you overcome them?
 - f. What has been your biggest struggle while incorporate literacy? How did you overcome that?
 - g. What advice would you give yourself as a young teacher regarding literacy incorporation?
 - h. Do you use literacy the same for all your classes? Do you place more emphasis on it in one class over another?
3. Anything else you would like to add you feel we didn't cover?

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VITA

Laura Hasselquist grew up in Northern Wisconsin and is the daughter of a dairy farmer and an elementary school teacher. Even as a young child she had an interest in agriculture and became an active 4-H and FFA member. Laura decided to major in agricultural education to give back to the field that had given her so much. She obtained a bachelor's degree from the University of Wisconsin-River Falls and taught middle and high school agriculture for eight years, earning a master's degree from University of Wisconsin-River Falls in the process. She earned her doctorate from the University of Missouri, where she developed a passion for research. In the summer of 2017, she started her academic career as an assistant professor at South Dakota State University. Laura's goal is to make a positive impact on the agricultural education profession through teaching, research, and service.