

ENGAGEMENT AND MOTIVATION IN LEARNING:
PERSPECTIVES OF MIDDLE SCHOOL AGRICULTURAL EDUCATION STUDENTS

By

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To my mom and dad
For their constant love, support, and encouragement, which has molded me into the
person I am today.

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LIST OF ABBREVIATIONS

CMP	Civic Marshall Plan
FFA	The National FFA Organization
IRB	Institutional Review Board
MES	Motivation and Engagement Scale
MES-JS	Motivation and Engagement Scale- Junior School
MEW	Motivation and Engagement Wheel
NAEP	National Assessment of Educational Progress
NCLB	No Child Left Behind Act
SAE	Supervised Agricultural Experience
U.S.	United States
USDE	U.S. Department of Education

Abstract of Thesis Presented to the Graduate School
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The purpose of this study was to ascertain the perspectives of middle school agricultural education students on engagement and motivation in learning. Descriptive research was used to identify middle school agricultural education students' self-perceptions of motivation and engagement in learning. Correlational research was used to examine the relationship between students' age, grade level, and gender (independent variables) and students' self-perceptions of motivation and engagement in learning (dependent variable). Data were analyzed using 213 completed instruments received from students within the classrooms of six agricultural educators in North Florida.

Majority of students were female, and a large portion of students were 13 years old and in the 8th grade. Students in this study tended to report higher scores in learning focus, lower scores in valuing, and higher scores in anxiety. Additionally, students tended to report higher scores in task management, lower scores in planning, and high scores in self-sabotage. Students in higher grade levels within this study tended to report slightly lower levels of self-belief, uncertain control, task management, valuing, and persistence. Additionally, students in higher grade levels within this study tended to

report slightly higher levels of self-sabotage and disengagement. Older students within the study tended to report slightly higher levels of self-sabotage and uncertain control. Males within the study tended to report slightly higher levels of disengagement and females tended to report slightly higher levels of anxiety and learning focus. Based on the findings of this study recommendations on ways to increase students' valuing, planning, self-belief, task management, and persistence, as well as ways to decrease anxiety, self-sabotage, uncertain control, and disengagement, were made to the educators who participated in this study.

CHAPTER 1 INTRODUCTION

“The high school dropout crisis in the United States claims more than one million students each year, costing individuals the loss of potential earnings and the nation hundreds of billions of dollars in lost revenue, lower economic activity and increased social services” (Balfanz, Bridgeland, Bruce, & Horning Fox, 2012, p.5). This was how the Civic Enterprises Everyone Graduates Center at Johns Hopkins University began its annual update of the *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic* report. The dropout crisis in the United States affects more than an individual’s ability to earn higher wages to support his or her family. On a national scale the dropout crisis affects every U.S. citizen. The Civic Enterprises Everyone Graduates Center (2012) indicated that by graduating half of one class of dropouts the U.S. taxpayer would save \$45 billion dollars in that single year. According to the U.S. Department of Education (USDE) report, *Trends in High School Dropout and Completion Rates in the United States: 1972-2009*, the average high school dropout costs the U.S. economy roughly \$240,000 over his or her lifetime in lower tax contributions, higher criminal activity, and higher dependence on programs such as Medicaid, Medicare, and welfare (U.S. Department of Education, 2009, p.1).

The Civic Enterprises Everyone Graduates Center (2012) argued that raising educational achievement translates to higher wages and social mobility for individuals, thus improving economic returns through increased revenues from productive workers. Education has been accredited for the productivity growth of the United States between the 1950s and 1990s. By continuing to improve education more jobs will be created,

and the workforce will have the power to grow the economy through a boost in gross domestic products (Civic Enterprises Everyone Graduates Center, 2012).

According to the annual update of the *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic* report (2012), “lagging high school graduation rates have risen in a time when the demands of today’s globally competitive economy have placed a high premium on education” (p.18). Today’s global and fast changing economy demands workers who are knowledgeable, can synthesize and evaluate information, think critically, and solve problems (Fredicks, Bluenfield & Paris, 2004). The requirements of today’s workforce have dramatically changed in the last forty years. In 1973, 73% of all U.S. jobs only required a high school diploma, whereas the workforce of this decade and future decades will require not only completing high school but also attaining some college or post-secondary training (Civic Enterprises Everyone Graduates Center, 2012).

In March of 2010 a union of U.S. organizations joined to develop the Civic Marshall Plan (CMP) to end the dropout crisis in the United States (Civic Enterprises Everyone Graduates Center, 2012). The CMP created two clear goals (Civic Enterprises Everyone Graduates Center, 2012):

A 90 percent nationwide high school graduation rate for the class of 2020 (at 75.5 percent for the class of 2009, ~ 1.3 percent point increase per year is needed through 2020); and

The highest college attainment rates in the world, with at least six in ten students earning a college degree by 2020 (up from three in ten today) (p.20).

To address these goals the CMP leadership council developed a phased approach with clear benchmarks for the years ahead that focused on all levels of education, beginning with elementary schools and working through middle and high schools (Civic

Enterprises Everyone Graduates Center, 2012). While the national graduation rate is currently at 75 percent, the rate of improvement has not been occurring fast enough to achieve the goal of a 90 percent national graduation rate by the class of 2020 (Civic Enterprises Everyone Graduates Center, 2012). As a result, attention and investments at all levels - including local, state, and federal - have been called for to address the high school dropout crisis (Civic Enterprises Everyone Graduates Center, 2012).

Approaches to decreasing high school dropout rates have focused on raising educational achievements at all levels and ages of education. The Bush administration acknowledged a gap in student achievement within U.S. secondary schools and formulated a means for intervention. In 2002, the Elementary and Secondary Education Act of 1965 was reauthorized as the No Child Left Behind (NCLB) Act “to close the achievement gap with accountability, flexibility, and choice, so that no child was left behind” (Public Law 107–110, 2002, 115 STAT 1425). The No Child Left Behind Act (2002) was designed with

the purpose to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments (Public Law 107–110, 2002, 115 STAT. 1439).

The Act outlined numerous objectives in order to accomplish the purpose, including:

(1) high-quality academic assessments, curriculum, and instructional materials be aligned with challenging state academic standards, in order to measure progress against common expectations for student academic achievement; (2) meeting the educational needs of low-achieving children in our Nation’s highest-poverty schools, limited English proficient children, migratory children, children with disabilities, Indian children, neglected or delinquent children, and young children in need of reading assistance; (3) closing the achievement gap between high- and low- performing children; (4) and holding schools, local educational agencies, and states accountable for improving the academic achievement of all students (Public Law 107–110, 2002, 115 STAT. 1439-1440).

Conversely, the National Assessment of Educational Progress (NAEP) reported no significant difference in assessment reading scores in 2008; no significant change from 2004 to 2008 for 13 year old students in mathematic assessment scores; and no measurable changes in science assessment scores from 1996 to 2005 for 8th grade students (National Center for Educational Statistics, 2010).

Newmann, Wehlage, and Lamborn (1992) indicated the most urgent and continuing issue for students and teachers has not been low achievement but student disengagement. Moreover, low achievement levels have been attributed to low student motivation and engagement in learning (Fredricks et al., 2004). Newman et al. (1992) has argued that efforts must be focused on learning how to engage students in order to enhance achievement. Over the past decade research has shown academic engagement as a key factor to student success in school, as it predicts learning, grades, achievement test scores, attendance patterns, student retention, academic resilience, and graduation rates (Skinner, Furrer, Marchand, & Kindermann, 2008). Therefore, an investigation of student engagement is the most local approach to close gaps in student achievement and develop interventions to decrease school dropout rates (Appleton, Christenson, Kim, & Reschly, 2006).

Appleton et al. (2006) noted that although interest in engagement has exponentially amplified in recent years, the distinction between motivation and engagement remains a matter of debate. Engagement has been defined as a person's participation in a task, or "energy in action" (Appleton et al., 2006, p.428), while motivation differentiates the direction, concentration, and quality of an individual's energies, answering the "why" question of an individual's given behavior (Appleton et

al., 2006, p.428). Furthermore, motivation has been stated to underpin student achievement (Martin, 2003). Therefore, motivation and engagement have been suggested as separate but cohesive constructs (Appleton et al., 2006).

Motivation and engagement have been defined as a student's energy and drive to engage, learn, work effectively, and achieve potential at school and have been argued to play a large role in students' interest and enjoyment in school (Martin, 2007; 2008). Marks (2000) noted that student engagement leads to achievement and contributes to students' social and cognitive development. According to Patrick, Ryan, and Kaplan (2007), a student's success in school is dependent upon the extent to which he or she engages in classroom learning tasks. Marks (2000) argued that students who are engaged in the classroom will be more likely to learn, view classroom experiences as rewarding, graduate from school, and pursue higher education. Research has shown a variety of indicators which affect students' motivation and engagement, including nature of instruction, relationships with teachers, parental attitudes and expectations, peers, the classroom learning environment, structure and culture of the school, and socio-demographic status, gender, and age of the student (Martin, 2008).

Efforts to increase student engagement arose in the mid 1980s and have been a theme in school reforms over the past three decades (Marks, 2000; Taylor & Parsons, 2011). Today, schools have consistently faced the issue of student disengagement due to an increased cultural diversity in the student body, large portions of students with special needs, and a vast array of distractions which compete with students' time and emotional investments (Newmann et al., 1992). The challenge for students in schools today has been the ability to cope with high demands of the teacher while avoiding

boredom, maintaining self respect, and aiming to succeed in school (Newmann et al., 1992). At the same time, teachers have been faced with the challenge of encouraging students to do academic work while taking it seriously enough to learn (Newmann et al., 1992). Additionally, a lack of student engagement has been attributed to factors of school characteristics including curriculum fragmentation, weak instruction, and low expectations for learning (Marks, 2000).

A call for reform in all school levels has been prevalent in research, yet a call on schools serving early adolescents has been especially strong (Lee & Smith, 1993). Middle school students continue to be underperformers in the U.S. educational system (Balfanz, Herzog & Iver, 2007). While steep declines of motivation have been seen across all grade levels (Fredicks et al., 2004) students' academic motivation has been recorded to steadily decline following the transition from elementary to middle school (Jang, 2008). Jang (2008) indicated that as students transition through levels of school workloads and difficulty of work increase, grading becomes more rigorous, and instruction becomes less personalized. Consequently, a steady decline in engagement has been documented to start in kindergarten and extend through graduation (or dropout), particularly during the transition to middle or high school (Skinner et al., 2008; Taylor & Parsons, 2011). In point of fact, U.S. Secretary of Education Arne Duncan noted "the middle grade years have been called the 'Bermuda Triangle' of K-12 education. It's the time when students sink or swim" (Civic Enterprises Everyone Graduates Center, 2012, p.8).

According to Balfanz et al. (2007) signs of behavioral and emotional disengagement are most prevalent in adolescent children. Early adolescence has been

noted as an instrumental phase in terms of creating changes in student achievement beliefs and behaviors (Ryan & Patrick, 2001). Therefore, focusing on addressing student disengagement within adolescents will provide the most impact on the development of students (Lee & Smith, 1993).

Nevertheless, current reform efforts have focused on improving instructional curriculum and improving the responsibilities, capabilities, and views of teachers and administrators (Balfanz et al., 2007). To address student achievement gaps and the high school dropout epidemic within the U.S. secondary school system, research must begin with further investigation into the viewpoints of middle school students on engagement and motivation in learning.

Statement of the Problem

The problem of lagging increased graduation rates, disappointing achievement levels, and lack of engagement and motivation in adolescents has been facing the U.S. secondary school system for decades (Appleton et al., 2006; Baifanz et al., 2012; Fredicks et al., 2004; Lee & Smith, 1993; Jang, 2008; Marks, 2000; Skinner et al., 2008). Currently, almost one in four Americans do not complete high school with their graduating class, and while dropout rates in the U.S. have been decreasing, reports have shown rates are not decreasing fast enough to meet the goal of a 90 percent national graduation rate by the class of 2020 (Baifanz et al., 2012). Low levels of engagement have been reported in U.S. schools over the past three decades, and chronic disengagement has been noted to affect forty to sixty percent of secondary schools (Marks, 2000). Additionally, a need for all learners to be actively and emotionally engaged in learning was called for by the *National Research Agenda*

(Doerfert, 2011) in the Research Priority Area of *Meaningful, Engaged Learning in All Environments*.

Dropping out of school has been known as a continuous process which does not occur overnight, thus student engagement and motivation have been noted as methods for intervening when early signs of disconnect in learning are recognized (Appleton et al., 2006). Ryan and Patrick (2001) noted that adolescence has been the most effective stage to create impactful learning gains in achievement and motivation. However, current reform methods have focused primarily on school teachers and administrators (Balfanz et al., 2007). Therefore, an investigation into the perspectives of students is essential to understanding the trend of disengagement and motivation in learning (Figure 1-1).



Figure 1-1. Significance of Motivation and Engagement on Student Achievement

Purpose and Objectives

The purpose of the study was to ascertain the perspectives of middle school agricultural education students on engagement and motivation in learning. This study aimed to address the following objectives:

- 1) Identify middle school agricultural education students' self-reported perceptions of motivation to learn,
- 2) Identify middle school agricultural education students' self-reported perceptions of engagement in learning,
- 3) Examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level), and their perceptions of motivation to learn and engagement in learning.

Significance of Study

The inferences gathered from this study provide several promises of significance for all stakeholders of the U.S. secondary school system, as “the problem of school dropout has become something of a national obsession” (Finn, 1989, P.117). Rumberger (1987) indicated that student dropout should be examined as a process of disengagement from school, and that the means for implementation of effectual interventions can be developed by identifying probable dropouts at an early age (Rumberger, 1987). Literature on motivation and engagement to date has been conceptualized in numerous studies (Fredricks et al., 2004). In spite of that, a shortage of information concerning students' insights on motivation and engagement in learning exists. The findings of this study will enhance researchers' knowledge base to include information concerning adolescents' perspectives of engagement and motivation in learning.

Additionally, knowledge attained from this study will assist teachers and school administrators in understanding students' perspective of engagement and motivation.

Educators will be able to use the conclusions of this study to increase student engagement by transforming teaching methods to include strategies which will motivate students to engage in academic activities (Jang, 2008). As a result, teachers will improve student success, as success has been noted to be determined by the extent to which students engage in learning tasks (Patrick et al., 2007). Thus, teachers and administrators will be closer to closing the gap between high-achieving and low-achieving students and meeting objectives mandated by the No Child Left Behind Act (Public Law 107–110, 2002). Lastly, engagement and motivation in learning may be a solution to the broader conundrum of preventing student dropout and meeting the high demands of a globally changing workforce.

Definitions of Terms

1. *Achievement*- “the quality and quantity of a student's work” Merriam-Webster’s Dictionary (n.d.). In this study, achievement was operationalized by students’ motivation and engagement level in learning (Martin, 2007).
2. *Adaptive Behaviors*- “Positive behaviors” (Martin, 2012). In this study adaptive behaviors were operationally defined as persistence, planning, and task management, which were found in the Engagement and Motivation Scale (Martin, 2009).
3. *Adaptive Cognitions*- “Positive thoughts” (Martin, 2012). In this study adaptive cognitions were operationally defined as self-efficacy, mastery orientation, and valuing, which were found in the Engagement and Motivation Scale (Martin, 2009).
4. *Agricultural Education* - “the scientific study of the principles and methods of teaching and learning as they pertain to agriculture” (Barrick, 1988, p.26).
5. *Age*- “the time of life at which some particular qualification, power, or capacity arises or rests” Merriam-Webster’s Dictionary (n.d.). In this study, age was operationalized as 11, 12, 13, 14, 15, and 16 years old.
6. *Anxiety*- “has two parts: feeling nervous and worrying. Feeling nervous is the uneasy or sick feeling students get when they think about their school or university work or tasks. Worrying is their fear of not doing very well in their school or university work” (Martin, 2009, p.804-805). In this study, anxiety was

operationalized by the maladaptive engagement construct found on the Engagement and Motivation Scale (Martin, 2009).

7. *Autonomy*- “self-directing freedom, especially moral independence” Merriam-Webster’s Dictionary (n.d.). In this study, autonomy was operationalized by adaptive and maladaptive cognitions constructs found in the Engagement and Motivation Scale (Martin, 2009).
8. *Belonging*- “close or intimate relationship” Merriam-Webster’s Dictionary (n.d.). In this study, belonging was operationalized by adaptive and maladaptive cognitions constructs found in the Engagement and Motivation Scale (Martin, 2009).
9. *Competence*- “the knowledge that enables a person to speak and understand a language” Merriam-Webster’s Dictionary (n.d.). In this study, competence was operationalized by adaptive and maladaptive cognitions constructs found in the Engagement and Motivation Scale (Martin, 2009).
10. *Disengagement*- “occurs when students give up or are at risk of giving up at school or school activities” (Martin, 2009, p.805). In this study, disengagement was operationalized by the maladaptive cognitive construct found on the Engagement and Motivation Scale (Martin, 2009).
11. *Engagement*- “described as ‘energy in action’, the connection between person and activity” (Appleton et al., 2006, p.428). In this study, engagement was operationalized by adaptive and maladaptive engagement constructs found in the Engagement and Motivation Scale (Martin, 2009).
12. *Failure Avoidance*- “occurs when the main reason students try at school or university is to avoid doing poorly or to avoid being seen to do poorly” (Martin, 2009, p. 805). In this study, failure avoidance was operationalized by the maladaptive cognition construct found on the Engagement and Motivation Scale (Martin, 2009).
13. *Gender*- “the behavioral, cultural, or psychological traits typically associated with one sex” Merriam-Webster’s Dictionary (n.d.). In this study, gender was operationalized as male or female.
14. *Global Booster Behavior*- “the average of planning, task management, and persistence MQ scores” (Martin, 2012, p.17).
15. *Global Booster Thought*- “the average of self-belief, valuing, and learning focus MQ scores” (Martin, 2012, p.17).
16. *Global Guzzler*- “the average of self-sabotage and disengagement MQ scores” (Martin, 2012, p.17).

17. *Global Muffler*- “the average of anxiety, failure avoidance, and uncertain control MQ scores” (Martin, 2012, p.17).
18. *Grade Level*- “a class organized for the work of a particular year of a school course” Merriam-Webster’s Dictionary (n.d.). In this study, grade level was operationalized as sixth, seventh, or eighth grade.
19. *Learning focus*- “being focused on learning, solving problems, and developing skills” (Martin, 2003, p.92). In this study learning focus was operationally defined by the adaptive engagement constructs found in the Motivation and Engagement Scale (Martin, 2009).
20. *Maladaptive Behaviors*- “Negative behaviors” (Martin, 2012). In this study negative behaviors were operationally defined as self-handicapping and disengagement, which were found in the Engagement and Motivation Scale (Martin, 2009).
21. *Maladaptive Cognitions*- “Negative thoughts” (Martin, 2012). In this study negative cognitions were operationally defined as anxiety, failure avoidance, and uncertain control, which were found in the Engagement and Motivation Scale (Martin, 2009).
22. *Mastery Orientation*- “entails being focused on understanding, learning, solving problems, and developing skills” (Martin, 2009, p.804). In this study, mastery orientation was operationalized by the adaptive cognitions construct found in the Engagement and Motivation Scale (Martin, 2009).
23. *Middle School*- “a school usually including grades five to eight or six to eight” Merriam-Webster’s Dictionary (n.d.). In this study, middle school was operationalized as including students in grades six, seven, and eight.
24. *Motivation*- “terms of the direction, intensity, and quality of one’s energies, answering the “why question” of a given behavior. In this regard, motivation is related to underlying psychological processes including, autonomy, belonging, and competence (Appleton et al., 2006, p.428). In this study, motivation is operationalized by adaptive and maladaptive cognitions constructs found in the Engagement and Motivation Scale (Martin, 2009).
25. *Planning*- “is how much students plan their work and how much they keep track of their progress as they are doing it (Martin, 2009, p.804). In this study, planning was operationalized by the adaptive engagement construct found in the Engagement and Motivation Scale (Martin, 2009).
26. *Persistence*- “reflects students’ capacity to persist in situations that are challenging and at times when they find it difficult to do what is required” (Martin, 2009, p.804). In this study, persistence was operationalized by the adaptive engagement construct of the Engagement and Motivation Scale (Martin, 2009).

27. *Self-belief*- “students’ belief and confidence in their ability to understand or to do well in their school or university work, to meet challenges they face, and to perform to their best of their ability (Martin, 2009, p.804). In this study, self-belief was operationalized by the adaptive cognitions construct found in the Engagement and Motivation Scale (Martin, 2009).
28. *Self-sabotage*- “occurs when students reduce their chances of success at school or university” (Martin, 2009, p.805). In this study, self-sabotage was operationalized by the maladaptive engagement construction found in the Engagement and Motivation Scale (Martin, 2009).
29. *Task Management*- “refers to the way students use their time, organize their timetables, and choose and arrange where they prepare for school or university and school or university tasks” (Martin, 2009, p.804). In this study, task management was operationalized by the adaptive engagement construct found in the Engagement and Motivation Scale (Martin, 2009).
30. *Valuing*- “how much students believe what they do and learn at school or university is useful, important, and relevant to them” (Martin, 2009, p.804). In this study, valuing was operationalized by the adaptive cognitions construct found in the Engagement and Motivation Scale (Martin, 2009).
31. *Uncertain Control*- “assesses students’ uncertainty about how to do well or how to avoid doing poorly” (Martin, 2009, p.805). In this study, uncertain control was operationalized by the maladaptive cognitions construction found in the Engagement and Motivation Scale (Martin, 2009).

Limitations of the Study

The inferences gathered from this investigation were subject to the following limitations:

- 1) The data collected during this investigation included perceptions and beliefs of individual adolescents in terms of motivation and engagement.
- 2) Data were collected from middle school agricultural education students in six selected middle schools within Florida; therefore, generalizability is limited to areas with similar demographics and characteristics specific to the sampling frame.
- 3) The data collected represented students’ perceptions of their personal engagement and motivation at the time they completed the instrument.

Basic Assumptions

The assumptions of this study were that all participants responded in a truthful manner and put forth authentic effort into reading, understanding, and answering the

questions found on the instrument. In addition, the Engagement and Motivation Scale has been previously used with middle school students and was assumed to be a valid and reliable instrument for the middle school students who participated in this study.

Chapter Summary

Low levels of student achievement and the current high school dropout epidemic facing the United States' secondary school system pose not only a threat to our economy (Civic Enterprises Everyone Graduates Center, 2012), but also a threat to the future workforce of our country, as they will be demanded to not only obtain a high school diploma but also some college or postsecondary training in order to compete in the globally competitive market (Civic Enterprises Everyone Graduates Center, 2012; Fredicks, Bluenfield & Paris, 2004). Research has indicated that increasing graduation rates among students can be achieved through raising student achievement levels (Civic Enterprises Everyone Graduates Center, 2012), and that student achievement can be enhanced by focusing on the constructs of student engagement and motivation (Appleton et al., 2006; Newmann et al., 1992; Skinner et al., 2006). Also, a focus is required on adolescent children in order to create the most significant changes in students' attitudes towards engagement and motivation (Civic Enterprises Everyone Graduates Center, 2012; Balfanz, Herzog & Iver, 2007; Jang, 2008; Lee & Smith, 1993; Skinner et al., 2008; Taylor & Parsons, 2011). The *National Research Agenda* (Doefert, 2011) recognized the necessity for increasing student engagement and motivation in secondary school systems by calling for all learners to be actively and emotionally engaged in learning in the Research Priority Area of *Meaningful, Engaged Learning in All Environments*.

This study aimed to meet the priorities of the *National Research Agenda* and the concerns of student achievement and graduation rates by ascertaining the perspectives of middle school students on motivation and engagement in learning. Conclusions gathered in this study will add information concerning middle school agricultural education students' insights to the current research of student engagement and motivation. Additionally, teachers will be able to use the findings of this study to alter teaching methods to include tactics which will enhance student motivation and engagement. Lastly, teachers and administrators will be closer to closing gaps in student achievement and meeting objectives mandated by the No Child Left Behind Act (2002).

CHAPTER 2 REVIEW OF LITERATURE

Chapter one explained the issue of low levels of student achievement and the high school dropout epidemic that have been facing the United States secondary school system for several decades. The literature focused on student motivation and engagement as points of intervention. Thus, the purpose of this study was to obtain middle school agricultural education students' perspective on student motivation and engagement in learning. Chapter one also provided definitions, objectives, limitations, and assumptions pertaining to this study.

Chapter two provides the theoretical and conceptual frameworks that directed this study. In addition, this chapter offers substantial support for the study through findings of pragmatic literature. The literature review focused on defining agricultural education and explaining the foundations of student dropout indicators, stages of adolescent cognition, and student motivation and engagement in learning.

Agricultural Education

Agricultural Education has been described as the community of scholarship between education and the study of agriculture, as it is defined as “the scientific study of the principles and methods of teaching and learning as they pertain to agriculture” (Barrick, 1988, p.26). Agricultural education in public schools has had an affluent history of developing personal skills of students and providing abilities needed for career employment through three main components: classroom and laboratory instruction, supervised agricultural experiences (SAE) and FFA (Huges & Barrick, 1993). Huges and Barrick (1993) explained agricultural education through their program model (Figure

2-1). The program model described agricultural education to take place within the context of school and community (Hughes & Barrick, 1993).

Classroom and laboratory instruction uses instruction to teach technical agriculture, leadership, and personal development (Hughes & Barrick, 1993). SAE and FFA give educators a means to provide experiential learning opportunities, reinforce curriculum taught in the classroom and laboratory setting, and provide motivation for students (Hughes & Barrick, 1993). It is important to note incentives such as contests, degrees, and awards outlined in the model (Figure 2-1) do not drive activities FFA and SAE's are based on, but rather serve as reinforcement and motivation tools by recognizing students for exemplary performance (Hughes & Barrick, 1993). While employment, education, and a career in agriculture are the intentions of the model, an agricultural education program has been viewed as an asset in preparing students for productive lives in several careers (Hughes & Barrick, 1993).

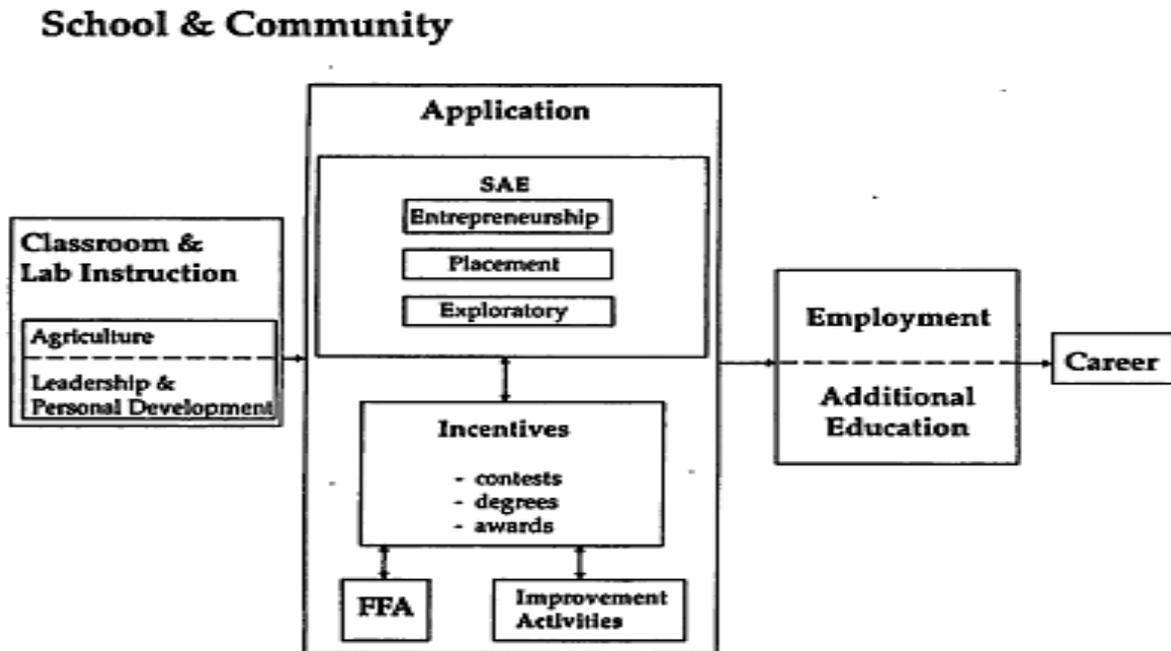


Figure 2-1. Agricultural Education Program (Hughes & Barrick, 1993)

Student Dropout

“Dropping out of high school has long been viewed as a serious educational and social problem” (Rumberger, 1987, p.101) that has been facing the United States for more than three decades, and has become something of a national obsession (Finn, 1989). Additionally, student dropout has been a continuing issue for many stakeholders within the educational system and has been noted as an issue which will continue for times to come (Rumberger, 1987). Accordingly, while the rates of high school dropouts have decreased from 60% in the 1940s to less than 16% in the 1980s (Rumberger, 1987) student dropout rates have not been decreasing at a rate to meet current goals of a 90% national graduation rate by 2020 (Civic Enterprises Everyone Graduates Center, 2012). In fact, high school dropout rates, which are currently at 15%, have barely decreased beyond those reported in the 1980s (Civic Enterprises Everyone Graduates Center, 2012).

Ultimately, student dropout has been noted to provide several individual and social concerns (Rumberger, 1987). Accordingly, “leaving high school prior to completion has proved to have serious educational deficiencies, which will severely limit students’ economic and social well-being throughout their adult lives” (Rumberger, 1987, p.101).

Social Consequences of Dropout

Dropping out of school has been noted to affect not only individual students but also society as a whole (Civic Enterprises Everyone Graduates Center, 2012; Rumberger, 1987). Rumberger (1987) indicated seven social consequences of dropping out of school as:

- (1) forgone national income;
- (2) forgone tax revenues for the support of government services;
- (3) increased demand for social services;
- (4)

increased crime; (5) reduced political participation; (6) reduced intergenerational mobility; and (7) poorer levels of health (p.114-115).

The most cited social consequence of student dropout has been forgone income (Rumberger, 1987). The forgone income of the cohort of dropouts of the 1981 national high school class amounted to \$228 billion, resulting in forgone government revenues of more than \$68 billion (Rumberger, 1987).

Social consequences have continued to arise from dropping out of school. By completing high school the dropouts of the national graduation class of 2011 would have generated up to \$154 billion additional earnings over their lifetimes (Civic Enterprises Everyone Graduates Center, 2012). Additionally, graduating half of one class of dropouts would save the U.S. taxpayer \$45 billion a year, as the average dropout costs the economy \$240,000 over his or her lifetime in lower tax contributions and higher reliance on social services (Civic Enterprises Everyone Graduates Center, 2012; National Center for Educational Statistics, 2009). Ultimately, dropout students will continue to place burdens on social welfare programs (Finn, 1989).

Individual Consequences of Dropout

Dropouts have continued to suffer the struggle of obtaining steady, well-paying occupations throughout their lifetimes (Rumberger, 1987). Dropouts in today's society will be more disadvantaged in the ever-changing global job market than ever before (Rumberger, 1987). Students today and in the future will be required to not only complete high school but also seek further education (Civic Enterprises Everyone Graduates Center, 2012).

Dropout behaviors have been associated with poor academic performance in school, which has been measured through grades, test scores, and grade retention

(Rumberger, 1987). Behavioral problems such as absenteeism and discipline problems have also been associated with dropping out of school (Rumberger, 1987). Finally, students who have the potential to become dropouts have lower levels of self-esteem, a sense of less control over their lives, poorer attitudes toward school, and lower educational and professional ambitions (Rumberger, 1987).

Preventing Dropout

“Dropping out of school itself might better be viewed as a process of disengagement from school, perhaps for either social or academic reasons” (Rumberger, 1987, p.111), and has been noted to be triggered by early school failure (Finn, 1989). Additionally, academic failure has been noted to have a direct effect on student motivation, thus resulting in a lack of engagement and ultimately dropout behavior (Mac Iver & Mac Iver, 2009). Student motivation and engagement in learning have been noted as factors for intervention and prevention of student dropout (Fredricks et al., 2004; Lee & Smith, 1993, Jang, 2008; Marks, 2000; Rumberger, 1987; Skinner et al., 2008; Taylor & Parsons, 2011).

Identifying potential dropouts at an early age has been noted to be the most beneficial to providing effective interventions (Barrington & Hendricks, 1989; Lee & Smith, 1993; Jang, 2008; Rumberger, 1987). Barrington and Hendricks (1989) found that by middle elementary years characteristics of potential dropout are apparent. Mac Iver and Mac Iver (2009) suggested that low levels of attendance, course failure in English or mathematics, and a record of poor discipline have been evident in dropouts as early as the sixth grade and predict at least 50% of eventual dropout.

In addition, middle school students’ decisions to miss school regularly, act out in class, and display low efforts are all indicators of disengagement from school and

strongly predict eventual dropout (Balfanz et al., 2007). Moreover, experiencing course failure in middle school dramatically reduces an adolescent's control and engagement (Balfanz et al., 2007). Balfanz et al. (2007) was convinced that the combination of becoming an adolescent and moving into new structures of schools that consist of complex academic and social demands creates conditions that can push students off the path of graduation. Balfanz et al. (2007) demanded that these conditions required attention and called for proactive and preventive interventions at the middle-grade levels.

Cognitive Development of Adolescents

Ryan and Patrick (2001) indicated early adolescence as the most precarious stage in terms of changing students' achievement beliefs and behaviors. Young adolescence has been noted to mark the beginning of a downward movement in academics, as it is the stage in which children become uncertain in their abilities to succeed in school and begin to question the value of completing schoolwork (Ryan & Patrick, 2001). Piaget's theory of cognitive development and Erikson's theory of human development rationalize the changes in student's beliefs and behaviors towards academics.

Piaget's Theory of Cognitive Development

The first person to evolve a theory of child cognitive development was Jean Piaget (1896-1987) (Fisher, 2005). Piaget believed that knowledge is built through interacting with the world, and that a child's ongoing interaction with the world is an essential characteristic of constructivism (Salkind, 2008). According to Piaget, the goal of intelligence is to achieve cognitive equilibrium (a reasonable, congruent relation) between cognitive structures (thought processes) and the surrounding environment (Fisher, 2005).

Piaget's belief was that intelligence is influenced by biological factors which exhibit organization and adaptation, in which organization is defined as cognitive structures arranged into rational systems to promote adaptation to the environment (Fisher, 2005). Piaget defined adaptation as a complementary process between assimilation and accommodation (Fisher, 2005), where assimilation gives the meaning of incorporating experiences into existing knowledge (Salkind, 2008) and accommodation allows for new experiences to be created or for previous experiences to be adjusted to aspects of the current environment (Fisher, 2005). Piaget's implications of the constructs of accommodation and assimilation explain development as a constant process that results in the structural change of differentiation and integration of knowledge (Salkind, 2008).

Piaget recognized development as a continuous process and developed stages children move through to develop cognition (Fisher, 2005). His goal was to denote the linear succession children encounter as they move towards a point of cognitive development in which they attain logical rational reasoning (Fisher, 2005). Piaget's four stages of intellectual development (Table 2-1) are designed to build on each other and develop in sequence (Salkind, 2008).

Table 2-1. Piaget's Stages of Adolescent Cognitive Development

Stage	Age
Sensorimotor Intelligence	Birth - 1.5-2 Years
Preoperational Intelligence	2-7 Years
Concrete Operational Intelligence	7-11 Years
Formal Operational Intelligence	11-Adulthood

Note. Source: (Fisher, 2005; Salkind, 2008)

Sensorimotor intelligence

Piaget believed that infants are not capable of mental thought but only overt action schemes, such as basic reflexes like grasping or sucking (Fisher, 2005). He believed infants to be egocentric, in that their initial experiences of the world are centered on their own bodies because they have not developed the ability to understand themselves as individual objects amongst other independent objects (Salkind, 2008). Piaget created six sub-stages within the sensorimotor stage in which children's action schemes become more complex unified, and goal oriented (Fisher, 2005). Ultimately, this stage of development accumulates with the achievement of the concept of object permanence, in which adolescents understand that objects continue to exist independent of their own activities (Fisher, 2005;Salkind, 2008).

Preoperational intelligence

Piaget's preoperational intelligence stage marks the emergence of symbolic functioning (mental representation). In this stage, children are able to understand objects that are not in the immediate spatio-temporal field (Fisher, 2005; Salkind, 2008). Ultimately, children develop the notion of preconceptual thought, which includes pretend play, drawing, recall memory, and language (Salkind, 2008).

Concrete operational intelligence

During the concrete operational intelligence stage children are able to overcome the logical deficiencies of the preoperational stage (Fisher, 2005; Salkind, 2008). Additionally, children's reasoning skills become nonegocentric, in that they do not solely focus on their own bodies (Fisher, 2005).Ultimately, children are able to create thoughts which are bound by concrete and physical reality, and children are able to put objects together and place them into one-to-one correspondence (Fisher, 2005; Salkind, 2005).

Formal operational intelligence

Once children have reached the formal operational intelligence stage they have developed the ability to surpass operating on concrete objects and are able to operate on logical forms of thought (Salkind, 2008). Children in this stage are able to discriminate between thoughts of reality and actual reality (Fisher, 2005). Furthermore, adolescents develop hypothetical-deductive reasoning, or the ability to explore general theories and all possible variables which influence outcomes, and are able to deduce or hypothesize outcomes (Fisher, 2005; Salkind, 2008). Ultimately, the formal operational intelligence stage marks the advent of “formal” and scientific reasoning (Fisher, 2005).

Cognitive Development and Middle School Students

Piaget believed that a child cannot understand instruction if he or she has not developed the structures of understanding (Salkind, 2008). Middle school has been defined as grades six, seven, and eight, and middle school children typically fall between the ages of eleven through thirteen. Furthermore, the middle grade years have been noted to be the most challenging for students emotionally and cognitively, as most are transitioning between Piaget’s stages of concrete operational intelligence and formal operational intelligence (Fisher, 2005; Salkind, 2008).

The Carnegie Council on Adolescent Development (1989) noted that serving schools which focus on middle school-aged students would “have the most potential to make a tremendous impact on the development of their students” (p.12-13). Balfanz et al. (2007) indicated that current reform efforts have focused on making middle schools more academically exceptional by creating schools which are developmentally appropriate for students by adjusting for the developmental needs of an increased desire for autonomy, increased reflection on abstract concepts, and an increased need

for positive and supportive relationships with peers and nonparental adults. Ryan and Patrick (2001) noted that changes in self-reflection, autonomy, and identity exploration can lead to positive student outcomes. Ultimately, Ryan and Patrick (2001) called for an intervention in the middle grade years in order to increase student achievement and promote graduation.

Erikson’s Theory of Human Development

Erik Erikson (1902-1994) was considered the father of psychosocial development and school psychology (Lee, 2005). He was concerned with the psychological development of children throughout their lifespan, and focused on the importance of changes in individuals on the social world (Lee, 2005). Erikson’s theory indicated that children move through eight stages in their life span and within each stage are faced with a particular psychosocial tasks or “crisis” (Lee, 2005).

Table 2-2. Erikson’s Stages of Human Development

Stage	Psychosocial Task
Oral Sensory	Trust vs. Distrust
Muscular-Anal	Autonomy vs. Doubt
Locomotor-Genital	Initiative vs. Gilt
Latency	Industry vs. Inferiority
Puberty and Adolescence	Identity vs. Role Confusion
Young Adulthood	Intimacy vs. Isolation
Adulthood	Generativity vs. Stagnation
Maturity	Identity vs. Despair

Note. Source: (Lee, 2005)

Oral-sensory stage

During this stage the psychosocial task children encounter is trust vs. distrust. According to Erikson (Lee, 2005), the task of trust vs. distrust reflects the significance of a child's experiences during their first year of life, primarily the quantity and quality of trustfulness displayed from caregivers.

Muscular-anal stage

In this stage, children encounter the psychosocial task of autonomy vs. doubt. The control of all muscles becomes the focus of a child's energy during this stage, including their ability to regulate or control their own physical behaviors such as potty training (Lee, 2005). Eventually, the change of control will result in a successful feeling of control over his/her behavior for a child rather than feelings of less control (Lee, 2005).

Locomotor-genital stage

Children encounter a psychosocial task of initiative vs. guilt in this stage of Erikson's theory. As a result of a child's new found autonomy and control, social expectations arise for children to have independent movement and motivation (Lee, 2005). This stage marks a child's movement away from dependency on parents towards the own ability to meet personal needs. In this stage, children are seen to become more capable of initiating more complex actions on their own, which results in more satisfaction than was possible when they depended on their parents (Lee, 2005).

Latency

The psychosocial task seen in this stage involves industry vs. inferiority. This stage is marked by a child's development of a sense of industry. According to Erikson, it is crucial for children to master social skills which are necessary to compete and function in society (Lee, 2005). Cultural experiences are seen to take precedence in this

stage as a child's ability to accomplish skills and abilities become important (Lee, 2005). Children must be able to develop their own world, and when faced with unsuccessful experiences children will develop a sense of inferiority and/or a lack of worthiness (Lee, 2005).

Puberty and adolescence

Children face the psychosocial task of identity vs. role confusion during this stage of Erikson's theory. Erikson indicates that this stage is biologically and culturally the end of childhood and entrance into adulthood (Lee, 2005). In this stage children are expected to develop their identity and definition of self (Lee, 2005). Erikson indicated that the development of their identity begins with defining an interest in career choices, furthering education, trade skills, and family (Lee, 2005).

According to Fisher (2005), if adolescents face prolonged periods of identity confusion, especially in cultures which encourage a high degree of choice, they will not be able to develop a sense of ego identity. Without a fully developed sense of ego identity, adolescents will not have sufficient ego strength or fidelity to function as an adult and will continue to function with adolescent like regressive behaviors throughout their lifetime (Fisher, 2005).

Young adulthood

In young adulthood adolescents are faced with the psychosocial task of intimacy vs. isolation. In this stage adolescents encounter new tasks and create goals that directly involve other people. Individuals are expected to further develop and meet career goals (Lee, 2005). This stage marks a beginning into the developmental process of interacting with others of the same and opposite sex (Lee, 2005).

Adulthood

In adulthood young adults face the psychosocial task of generativity vs. stagnation. Young adults are expected to define a style or life role in this stage and society places an emphasis on the continuity of proceeding with former stages (Lee, 2005). According to Erikson, a sense of generativity comes from the need to support and encourage the development of the next generation (Lee, 2005). Conversely, individuals who cannot lend continuity to the next generation become absorbed in personal needs and begin to ignore others and become stagnated (Lee, 2005).

Maturity

In Erikson's final stage adults face the psychosocial task of integrity vs. despair. As adults age Erikson indicates that they begin to develop ego integrity in which they come to realize that they have led meaningful and productive lives, and they begin to dispense their wisdom to young children (Lee, 2005).

Motivation

Motivation, in terms of academics, has been defined as what drives a student to partake in a given learning activity (McLaughlin et al., 2005). According to McLaughlin et al. (2005), a student's willingness to contribute to learning activities may not reflect his or her interest in the activity or the subject matter. Accordingly, students are known to be motivated by several influences, including internal, external, positive (or interest), and negative (fear) influences (McLaughlin et al., 2005). Motivation theorists have argued that motivation involves the performance of all learned responses in which a learned behavior will not occur unless it is activated (McLaughlin et al., 2005).

The earliest motivation theories were derived from a biological perspective, which stated that people are inherently determined to uphold an optimal level of excitement

because it is physiologically pleasing (McLaughlin et al., 2005). However, the biological perspective has failed to address the workings of the mind. Therefore, a school of thought based on cognition evolved (McLaughlin et al., 2005). The beliefs of motivation based on cognition included the notions that individuals motivate behavior, and people change behavior to align with what they believe to be true (McLaughlin et al., 2005). The social motivation theory stemmed from motivations of cognition, and social theorists have believed that students are motivated to mimic positive models and yearn to be accepted as part of a group (McLaughlin, 2005). Additionally, humanistic theories of behavior have indicated the importance of an individual's self-evaluation, and that people are motivated by inner feelings of worth, self esteem, self-efficacy, and control (McLaughlin, 2005).

Over the past 30 years researchers have focused on theories of motivation which concentrate on individual's beliefs, goals, and values as the pivotal motivational underpinnings of behavior (Wigfield & Wentzel, 2007). Numerous theories of motivation have been reported to explain an individual's drive to participate in a particular activity. McLaughlin et al. (2005) noted that academic motivation stemmed from a combination of cognitive, social, and humanistic theories of motivation, which included expectancy-value theory, self-determination theory, and achievement goal theory (Dolezal, 2011; McLaughlin, 2005; Wigfield & Wentzel, 2007).

Expectancy-Value Theory of Motivation

Expectancy-value theory has been noted to be coherent with major theories of motivation, has been used to observe motivation in classrooms, and has been linked to student achievement (McLaughlin et al., 2005). The key theme of the expectancy-value theory indicates that students do not engage in experiences unless there is a

reasonable expectation of success and they find value in the activity (McLaughlin et al., 2005). This theory can be better understood by explaining the two components- expectation and value.

Expectation. Self-efficacy is at the core of the expectation component of the expectancy-value theory (McLaughlin et al., 2005). Self-efficacy has been described as an individual's belief in his or her ability to accomplish tasks or implement behaviors in particular situations (McLaughlin et al., 2005; Wigfield & Wentzel, 2007). According to McLaughlin et al. (2005), an individual's decision to engage in a task is dependent on his or her self-perception of efficacy, which has been associated with persistence and performance in school. Additionally, Wigfield and Wentzel (2007) stated that efficacious students take on more strenuous academic challenges, persist longer in struggles, and carry beliefs that they will succeed in school. Finally, McLaughlin et al. (2005) noted students' attributes (external or internal forces) of success or failure are important links between prior events and current self-efficacy.

Value. Value consists of what students value and how they decide what to value (McLaughlin et al., 2005). Value refers to the motives and enticements students view for participating in learning tasks, which include interest in activity, importance of the activity to the individual, and the apparent worth of the activity (Wigfield & Wentzel, 2007). In addition, Wigfield and Wentzel (2007) argued that a student's ability to identify with teachers and peers aides him/her in determining the value of classroom activities. McLaughlin et al. (2005) noted that the value a learning activity holds for a student is what attracts the student into action. In these terms, value can be considered more than mere interest in a learning activity, but as the cause for a student wanting to complete

the tasks (McLaughlin et al., 2005). Ultimately, value can arise from interest in the subject matter of learning activities, or from a sense of the effectiveness of undertaking tasks (McLaughlin et al., 2005).

Self-Determination Theory of Motivation

Self-determination theory suggested that learning can only occur when individuals become cognitively and emotionally engaged in learning tasks (Dolezal, 2011).

According to the theory, every individual needs the comprehension of the fundamental needs of autonomy, competence, and relatedness (Dolezal, 2011). The need for autonomy pertains to the feeling that the origin of an individual's behavior exists within the individual's self (Dolezal, 2011). The human need to control desired outcomes and feel successful in bringing the desired outcomes refers to an individual's need for competence (Dolezal, 2011). The need to feel a sense of belonging to a social group refers to an individual's need for relatedness (Dolezal, 2011).

Achievement-Goal Theory of Motivation

Achievement goal theorists have noted student behavior as a means to achieve special goals and that students aim to achieve academic performance and mastery goals. Dolezal (2011) described students who pursue mastery goals to be self-regulating and self-determining, and believed that intelligence will increase with effort. Students who have shown interest in performance and mastery goals are known to be concerned with their own abilities, how well they can perform, and how others perceive them (Dolezal, 2011).

Motivational Behaviors over Time

Factors which motivate an individual's behavior have been known to change throughout time (McLaughlin et al., 2005). Appropriately, factors which have been noted

to motivate first-grade students are not expected to motivate the same students once enrolled in high school (McLaughlin et al., 2005). However, some forms of extrinsic motivation (such as social acceptance) have been known to remain unchanged (McLaughlin et al., 2005). Wigfield and Wentzel (2007) denoted that students who continue to hold beliefs of self-control over learning and have autonomy over aspects of learning tend to become more engaged in their learning activities. Fundamentally, motivation has been noted to directly impact social and academic functioning of individuals (Wigfield & Wentzel, 2007).

Engagement

Learning has been noted to develop due to the effort of the student, who must be enticed to participate in an ongoing cycle of studying, producing, correcting mistakes, and starting over (Newmann et al., 1992). Engagement has become an important component of motivational research, because it has been considered to be an outward manifestation of a motivated student (Skinner et al., 2008). Engagement emerged as the core theoretical framework to explain student dropout and has been noted as the most promising method to preventing the phenomena (Appleton et al., 2006; Finn, 1989). Additionally, educators have recognized the importance of student engagement in learning and have noted that too many students appear to be bored, unmotivated, uninvolved, and disengaged from the academic and social aspects of school (Appleton, Christenson, & Furlong, 2008). Moreover, research has indicated that students invest the majority of their energy in performing rituals, procedures, and routines, and fail to develop substantial understanding (Newmann et al., 1992). According to Skinner, Kindermann and Furrer (2009), a child's active participation in classroom learning activities predicts achievement and completion in school.

Engagement has been generally defined as active involvement, commitment, and concentrated attention in an activity (Newmann et al., 1992). In terms of academics, engagement has been defined as a psychological process in which students devote their undivided attention and efforts to an endeavor of schooling activities, goals, and values in order to master knowledge and skills that academic work is intended to promote (Marks, 2000; Newmann et al., 1992; Skinner et al., 2009). Accordingly, engagement represents a potentially impressionable influence in shaping adolescents' academic retention, achievement, and resilience (Skinner et al., 2009). In addition, engagement has been known to capture the quality of participation in classroom learning activities and create energized, focused, and positive interactions with academic activities rather than apathetic withdrawal (Skinner et al., 2009).

Engagement has been noted to vary in force and duration. Students have been known to become engaged in short term, specific situational contexts or in a long term, stable context (Fredricks et al., 2011). Ultimately, rates of student engagement have been known to stem from opportunities for participation, interpersonal relations, and intellectual endeavors within the school or classroom (Fredricks et al., 2011).

Historically, engagement was measured using attendance, test scores, truancy, and graduation rates data, and was viewed as a method of reclaiming at-risk dropout students and managing classroom behavior (Taylor & Parsons, 2011). Using these types of data resulted in tracking student achievement levels but failed to gauge student engagement in learning (Taylor & Parsons, 2011).

Current research describes engagement as a meta-construct which incorporates multiple components of engagement (Fredricks et al., 2004; Newmann et al., 1992;

Taylor & Parsons, 2011). Traditionally, the literature has indicated that engagement unifies the components of behavioral, emotional, and cognitive engagement (Appleton et al., 2006; Fredricks et al., 2004).

Behavioral Engagement

Behavioral engagement describes the idea of participation in a learning task (Fredricks et al., 2004). Behavioral engagement includes involvement in academic, social, and extracurricular activities, and is considered vital to reaching positive academic outcomes and preventing student dropout (Fredricks et al., 2004). Behavioral engagement has also been known to include positive conduct, effort, and participation (Appleton et al., 2006). Additionally, behavioral engagement can range from doing work and following the rules to participating in organizations like student council (Fredricks et al., 2004). Ultimately, behavioral engagement has been noted to be measured by student conduct, persistence, and participation in learning tasks (Fredricks et al., 2004).

Cognitive Engagement

Cognitive engagement implicates the idea of investment and has been noted to integrate the eagerness to exert the necessary effort to compare complex ideas and master difficult skills (Fredricks et al., 2004). Cognitive engagement has been noted to describe student's self-regulation, learning goals, and investments in learning (Appleton et al., 2006) and can range from memorization to the use of self-regulated learning strategies, which promote understanding and expertise in a skill (Fredricks et al., 2004). Ultimately, cognitive engagement has been conceptualized as psychological investments in learning and has been measured through problem solving, preferences for rigorous work, independent work styles, and methods of coping with perceived failure (Fredricks et al., 2004).

Emotional Engagement

Emotional engagement has been described to include students' interest in and positive attitude toward learning, as well as a sense of belonging (Appleton et al., 2006). The construct of emotional engagement includes positive and negative reactions to teachers, peers, academics, and the school environment and has been presumed to create student attachments to school and influence students' willingness to work. Additionally, emotional engagement can range from a straightforward liking of school to valuing or identification with the school (Fredricks et al., 2004). Ultimately, students' emotional engagement has been measured through self-reported measures of positive and negative emotions towards school, school work, and people at school (Fredricks et al., 2004).

How do Learners Become Engaged?

Taylor and Parsons (2011) raised the question of determining how students are engaged. Literature indicated that engagement can be a form of a meta-construct which combines forms of engagement, including academic, cognitive, intellectual, institutional, emotional, behavioral, social, and psychological engagement (Taylor & Parsons, 2011). Taylor and Parsons (2011) questioned whether a student must be engaged in all types of engagement to be considered successful. Accordingly, Dunlevy, Milton, and Crawford (2012) found in their research that:

Students want to experience work that is meaningful and not easy: They want to work with ideas that matter, solve real problems, learn from each other, people in their communities, and experts, and want to engage in dialogue in their classes (p.1).

Ultimately, Taylor and Parsons (2011) indicated four major ways for educators to engage students in learning tasks, including focusing on areas of interaction, exploration, relevancy, and multimedia and instruction.

Interaction

Considerate relationships and interactions have been shown to improve student engagement (Taylor & Parsons, 2011). In their study, Willms, Friesen, and Milton (2009) found that students stated a need to interact with people within and beyond the environment of the classroom and school. Students indicated that they desire environments which promote supportive connections and provide continuous interactions (Taylor & Parsons, 2011). Taylor and Parsons (2011) argued that students must have social interaction to be fully engaged in academic tasks.

Exploration

Taylor and Parsons (2011) found that learners seek opportunities to explore and find solutions for themselves. Additionally, Hay (2000) found that students yearn for more hands-on experiences and are less willing to absorb information that is placed in front of them. Lastly, Taylor and Parsons (2011) argued that students value seeing how “a thing works in real life” as more engaging than learning about it in class.

Relevancy

Taylor and Parsons (2011) found that students want their learning to be applicable to their lives as opposed to being theoretical and text based. Providing students the ability to work with genuine problems or community-based issues promotes student engagement and builds a purpose in the learning (Willms et al., 2009; Taylor & Parsons, 2011) Ultimately, research findings have shown that students need to feel as if academic work is worth their time (Jang, 2008; Willms et al., 2009).

Multimedia and Instruction

Duleavy and Milton (2009) found multimedia and technology (like cameras, videos, Smartboards, gaming software, PowerPoint) to be helpful in engaging students in learning about subjects and help students control their own learning. Additionally, Taylor and Parsons (2011) found that students desire to interact globally with people and events, and that by using multimedia and technology educators are able to provide learners with accessible and pertinent information and experts. Conclusively, teachers have reported that the use of technology and multimedia have proven to increase the factors of student cognitive, affective, behavioral, academic, and social engagement (Taylor & Parsons, 2011).

Motivation and Engagement

To-date motivation research has been considered to be fragmented, and a call for a more comprehensive approach to research has been seen in this area (Martin, 2007; 2008; 2009). Additionally, a number of educational and psychological theories have been identified to describe the nature of human cognition and behavior (Martin, 2007; 2008; 2009). Martin identified three significant levels of commonalities which provided direction in the creation of the fundamental dimensions of motivation and engagement. Martin (2007; 2008; 2009) stated that:

Level one delineates cognitive and behavioral components of work, entailing cognitive and behavioral orientations to learning strategies; cognitive antecedents of behavioral strategies in environmental demands; cognitive-behavioral approaches to engagement and behavioral changes, and cognitive-affective and behavioral dimensions of academic engagement.

Level two demonstrates differential empirical strengths of components of motivation and engagement- for example, self-efficacy reflects highly adaptive motivation, anxiety impedes individual's engagement, and self-handicapping behaviors reflect maladaptive engagement.

Lastly, level three informs the structure of motivation and engagement frameworks, especially those which demonstrate the hierarchical models of human cognition and behavior (p.797, 2009).

Martin (2008) ultimately defined motivation and engagement as students' force and drive to engage, learn, work effectively, and achieve potential at school. He noted that engagement and motivation underpin student achievement, and play large roles in students' interest in and enjoyment of school. Through his research Martin (2008) identified motivation and engagement as a multidimensional construct and developed the Motivation and Engagement Wheel (Figure 2-2).

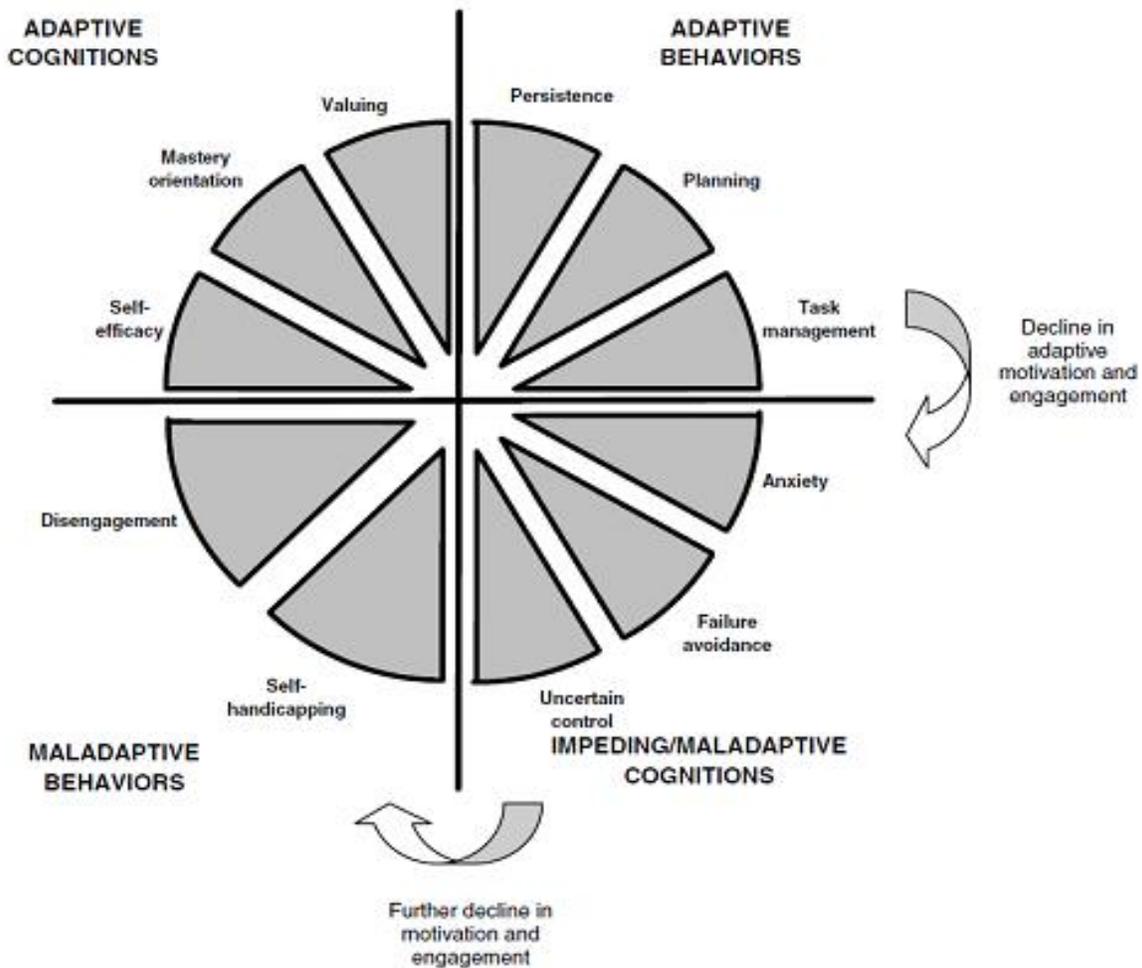


Figure 2-2. The Motivation and Engagement Wheel (Martin, 2008; 2009)

The Motivation and Engagement Wheel

The Motivation and Engagement Wheel (MEW) describes an integrative framework that reflects seminal motivation and engagement theories (Martin, 2007; 2008; 2009). Martin (2007; 2008; 2009) developed the MEW for practitioners who sought to capture the diversity of motivation and engagement dimensions. Martin (2007; 2008; 2009) was driven to create the MEW by the need of practitioners to have a broader framework than those characterized by previous theories. Martin's (2007; 2008; 2009) purpose in creating the MEW was to bridge the disparities between the dimensions of educational theories and practitioners, and create a framework which would be readily accessible for practitioners, parents, and students.

The MEW is designed with separated components which reflect adaptive and maladaptive dimensions. These dimensions aim to assist practitioners and students in separating "helpful" and "unhelpful" motivations (Martin, 2007; 2008; 2009). Martin (2007) indicated that when students are able to understand the dimensions of motivation and engagement, an intervention is more likely to be successful, as it is more meaningful to the student. In the MEW, Martin (2007; 2008; 2009) characterized motivation and engagement into four higher order groups, including adaptive cognitive dimensions, adaptive behavioral dimensions, impeding/maladaptive cognitive dimensions, and maladaptive behavioral dimensions. Martin (2007; 2008; 2009) stated that the higher order conceptualization addresses the aims of enhancing carefulness, provides amalgamating approaches to seminal educational and psychological theories, and offers an opportunity to comprehend basic structures of student motivation and engagement. Furthermore, a basis for measuring student motivation and engagement must exist, thus, a lower level of constructs which reflect diversity of student academic

engagement and motivation are guided through theory and research to operationalize the higher order dimensions of the MEW (Martin, 2007; 2008; 2009). Martin's (2007) lower order constructs were identified through seven substantive questions for the development of motivational science proposed by Pintrich (2003) from salient and seminal theories which included: self-efficacy, attributions, control, valuing, goal orientation, self-determination, need achievement, self-worth, and self-regulation.

Self-Efficacy and Expectancy-Value Theory

Students who exhibit high self-efficacy are inclined to create and question alternative sources of action when they are not initially met with success (Martin, 2007). Individuals who have high self-efficacy have been noted to perform better in classrooms due to their elevated levels of effort and persistence (Martin, 2007). Finally, students who have high self-efficacy tend to handle problem situations more efficiently by using cognitive and emotional processes related to the situation (Martin, 2007).

Martin (2007) indicated self-belief as a critical component to student motivation. He also noted that the interaction of experiences and task value predicts student motivation and engagement (Martin, 2007). Additionally, individuals who have high expectations and value tasks are more motivated and engaged to complete those tasks (Martin, 2007). Fundamentally, self-efficacy and value of school is reflected in the self-efficacy and value dimensions of the MEW model (Figure 2-2) (Martin, 2007; 2009).

Attribution Theory and Control

Attribution theory explains the reasons an individual accredits to an experience may determine how the individual behaves in future occurrences (Martin, 2007). Martin (2007) noted that attributions created in the classroom affect students' optimism and performance. Accordingly, Martin (2007) stated that attributions of outcomes can vary

based on students' controllability, and control ultimately determines students' responses to setbacks, pressure, and fear of failure. Conclusively, from an attribution theory perspective Martin (2007; 2009) indicated control as an important construct to include in the MEW, and attributions and control are reflected in the dimension of uncertain control (Figure 2-2).

Goal orientation and self-regulation

Goal orientation indicates an individual's focus on mastering the task at hand (mastery orientation) and performance on the task (performance orientation) (Martin, 2007). Mastery orientation is driven by intrinsic motivation and is more directly pertinent to the framework of motivation and engagement than performance orientation, which is driven by extrinsic motivation (Martin, 2007). Martin (2007) noted that mastery orientation is a critical element of student motivation and that it is manifested in the lives of students through self-regulatory behaviors, such as planning, study management, and persistence. In addition, self-regulation and motivation have been found to be predictive of student achievement and adaptive orientations of academic tasks (Martin, 2007). Self-determination and motivation orientation are present in the mastery orientation dimensions, and self-regulation is reflected in the planning, task management, and persistence dimensions of the MEW (Figure 2-2) (Martin, 2009).

Need achievement and self-worth motivation theory

According to the need achievement and self-worth models of motivation, students can be categorized as success-oriented, failure-avoidant, and failure-accepting (Martin, 2007).

1. **Success-oriented students:** The success-oriented student is noted to be optimistic, proactive, and positive towards his or her studies, and is not

debilitated by setback but rather is able to respond with optimism and energy (Martin, 2007).

2. **Failure-avoidant students:** The failure-avoidant student is noted to be anxious, motivated by his or her fear of failure, and may even handicap his or her chances of success in order to create an excuse for not performing well (Martin, 2007).
3. **Failure-accepting students:** The failure-accepting student has given up to the extent of not trying to avoid failure, is often disengaged from his or her studies, and has learned to display helpless patterns of motivation (Martin, 2007).

Success-oriented students show signs of higher self-efficacy and control, and failure-avoidant and failure-accepting students show signs of anxiety, failure avoidance, self-handicapping, and disengagement (Martin, 2007). Self-worth and need achievement are reflected in the failure-avoidance, anxiety, self-handicapping, and disengagement dimensions of the MEW (Figure 2-2) (Martin, 2009).

Empirical Research

Dolezel

Dolezel (2011) conducted a study on student and teacher perceptions of motivation and engagement. The study utilized 144 students in grades 6-12 focusing on gender, grade, and the qualification for free or reduced lunch, as well as, 36 teachers who taught in grades 6-12, of whom none were in their first 3 years of teaching. Dolezel (2011) administered a 42 item Likert-type instrument with one open ended question focusing on three subscales including instructional strategies, teacher relationships/expectations, and goals/motivation theory. Students were instructed to think about a particular class in which they felt motivated and engaged in while responding to the instrument.

Instructional strategies. Students reported classes in which students were allowed to work collaboratively and engage in projects that had real life applications

were most motivating and engaging (Dolezel , 2011). Dolezel (2011) found data to be supported by Yazze-Mintz's study (2009) in which students were found to be most engaged and motivated with methods that involved working and learning with peers. Conversely, students reported that having the ability to choose their own topics of study as an instructional strategy was not being used as often by teachers in classes students considered motivation and engaging (Dolezel, 2011).

Teacher relationships/expectations. Dolezel's (2011) findings were consistent with Juvonen's study (2007) in that students who do not feel supported and respected by teachers are more likely to lack engagement and motivation. Students reported that they are more motivated and engaged when their teachers like them, want them to do well, and are fair, thus implying that positive relationships with teachers are an important component of a classroom which students find to be motivation and engaging (Dolezel, 2011). Dolezel (2011) noted that teachers should be aware that all behaviors are noticed by students and can be interpreted as caring, showing indifference, or even dislike for a student.

Goals/motivation theory. Students identified effort and learning strategies as attributions which lead to academic success (Dolezel, 2011). Additionally, students signify receiving good grades in school motivated them to be engaged, as they were eligible for extracurricular activities, college acceptance, pleasing parents, and meeting personal goals (Dolezel, 2011). Dolezel's (2011) findings indicated students are motivated by rewards other than those which are immediate and extrinsic and found these to be consistent with Ryan and Deci's (2000) self-determination theory.

Ultimately, Dolezel (2011) noted positive relationships with teachers appeared to be the most power indicator for student motivation and engagement. Additionally, students desire classroom environments in which teachers hold high expectations for learning and use instructional strategies that allow learning to be adapted to real life applications (Dolezel, 2011).

Turner and Herren

Turner and Herren's (1997) study of 15,000 high school agricultural education students found students to have the highest need for achievement and the lowest need for power. Overall, all agricultural education students expressed a higher need for achievement than affiliation over power and a higher need for affiliation than power (Turner & Herren, 1997). When compared to non-members agricultural education students who were members of FFA had a higher need for achievement, a higher need for affiliation, and a higher need for power (Turner & Herren, 1997). No statistically significant differences were found based on gender for the need for achievement (Turner & Herren, 1997). Female students were found to have a higher need for affiliation and a higher need for power than male students enrolled in agricultural education classes (Turner & Herren, 1997). As a result of their findings Turner and Herren (1997) suggested agricultural educators should emphasize activities that appeal to agricultural education students' appeal for a higher need for achievement than the need for affiliation. Female agricultural education students need activities which will meet their need for affiliation and need for power more than male agricultural students (Turner & Herren, 1997).

Rohs and Anderson

Rohs and Anderson (2001) noted few studies to focus on the perspectives of students on their motivational needs and no studies to focus on middle school students. According to Rohs and Anderson (2001) middle school students need more hands-on activities and teamwork tasks, and school-based agricultural education has been tailored to meet these needs of the developmental stages of adolescents. Additionally, Rohs and Anderson (2001) noted that by exploring the motivation needs of students educators can determine students' motivations to enroll and participate in agricultural classes.

Rohs and Anderson (2001) conducted a study using 14,115 seventh and eighth grade students in 38 school based agricultural education programs in Georgia focusing on FFA and non-FFA students' need for achievement, affiliation, and power. Middle school students were found to have the highest need for achievement ($M=3.97$), with a second need for affiliation ($M=3.63$), and lastly a need for power ($M=3.33$) (Rohs & Anderson, 2001). No significant difference between FFA and non-FFA students was found (Rohs & Anderson, 2001). Females were found to be more concerned with relationships and influence than males; however, there was no significant difference found for achievement between males and females (Rohs & Anderson, 2001).

Ultimately, Rohs and Anderson (2001) noted that the developmental stage of adolescence is a period of self-discovery, and exploratory teaching methods can lead to helping student develop motivational needs. Additionally, teaching methods should be developed to meet the current motivational needs of students and can be used to aide students in self-discovery for continual personal development (Rohs & Anderson, 2001). Finally, activities which are designed to experiment with personal developmental

characteristics can assist in developing motivational needs that become more evident as students mature (Rohs & Anderson, 2001).

Martin

Martin (2008) implemented workshops within youth enrichment programs which targeted student engagement and motivation. The purpose of the study was to create an intervention which impacted participants' academic motivation and engagement (Martin, 2008). Martin (2008) implemented an intervention of self-complete modules over a school term using 53 high school boys in a capital city of Australia. Using the Motivation and Engagement Scale- High School (MES-HS), Martin (2008) administered a pre-intervention and post-intervention assessment for the treatment and control group. Data collected showed gains on key factors of student motivation at the end of the workshop sustained six to eight weeks later (Martin, 2008). Moreover, the treatment group demonstrated positive motivation changes on task management, persistence, anxiety, failure avoidance, and uncertain control (Martin, 2008). Furthermore, compared to a comparison group, the treatment group exhibited positive shifts on valuing, mastery orientation, planning, task management, persistence, failure avoidance, uncertain control, and self-handicapping (Martin, 2008). Ultimately, the cumulative results of the study findings demonstrated the potential for multidimensional interventions for enhancing student motivation and engagement.

Upon completion of the 2008 study Martin noted that students across all grade-levels share commonalities (2009). Martin (2009) argued that

Students must apply themselves over a sustained period of time to develop academic skills, engage with key performance demands, negotiate the rigors of competitions, deal with setbacks and adversity, cope with possible self-doubt and uncertainty, and develop psychological and behavioral skills

to manage the highs and lows of ordinary course work of their academic life (p.794-795).

Martin (2009) felt it was practical to propose core and common constructs which were relevant and meaningful across academic life. He developed a study to investigate the developmental construct validity of the MEW (using the MES) across elementary, high school, and universities (Martin, 2009). In his study, Martin (2009) distributed the MES to 624 upper-elementary age students (9-11.5 years old) from five Australian schools, 21,579 high school students from 58 Australian schools, and 420 undergraduate students from two Australian universities. Martin (2009) found results which supported the developmental construct validity of motivation and engagement at the varying levels of the academic life span and found largely analogous findings among the very distinct educational stages. Data confirmed the generality of the MEW and the MES amongst young students through mature-age students (Martin, 2009).

Conceptual Model of Engagement and Motivation

Martin (2007, 2008, 2009) provided instrumental research in evaluating student engagement and motivation across all ages of students' academic life span. The conceptual model (Figure 2-3), which served as a foundation for this study, was developed using Martin's (2007, 2008, 2009) Motivation and Engagement Wheel (Figure 2-2). Findings from the literature review were also incorporated into the conceptual model (Figure 2-3) to account for factors which impact student motivation and engagement including:

- Nature of instruction
- Relationships
- Parental attitudes and expectations towards learning
- Peers
- Classroom climate

- School structure and culture
- Gender
- Age
- Grade level (Marks, 2000; Martin, 2008).

At the core of the conceptual model is Martin's (2007, 2008, 2009) Motivation and Engagement Wheel. The MEW includes adaptive and maladaptive cognitions and behaviors that predict student engagement and motivation. External variables are found at the top of the model as they have been recorded to influence student engagement and motivation. These variables are broken into student and environmental attributes and will be explained in further detail in the following sections.

Student Attributes

Student attributes was noted as the first component of external variables to influence student engagement and motivation. Attributes included gender, age, and grade level (Marks, 2000; Martin, 2007, 2008, 2009).

Gender

Marks (2000) found across all grade levels girls have been noted to be consistently more engaged in academics than boys. Additionally, Martin (2007) indicated that the number of high achieving Australian girls surpasses the number of high achieving boys, and that more females have been noted to complete school since 1976. Boys have also been noted to be more negative about school, have higher rates of discipline issues, view homework as less useful, are less likely to ask for help, and are more unwilling to complete extra school work (Martin, 2007). Finally, educators have noted that boys are ultimately less productive because they are less able to concentrate and less motivated to solve complex problems (Martin, 2007).

Age

Middle and high school students who are more academically successful have been noted to have greater engagement with school and class work. Martin (2007) noted that students' self-perception of competence and subjective value decline as children grow older.

Grade level

Marks (2000) discovered that engagement in academic work decreases as grade level increases. Martin (2007) noted that motivation and engagement decline in middle school years. As students transition into middle school changes in domain-specific subjective task values become more noticeable (Martin, 2007). Ultimately, Martin (2009) found that upper elementary students (ages 9-11.5) reflect higher levels of motivation, which is consistent with previous research indicating declines between elementary and middle or high school (Jang, 2008).

Environmental Attributes

The second component of external variables noted to influence student engagement and motivation was labeled as environmental attributes and included peer pressures, societal norms, home influences, and institutional influences (Barrington & Hendricks, 1989; Dunleavy & Milton, 2009; Fredricks et al., 2004; Marks, 2000; Ryan & Patricks, 2001; Taylor & Parsons, 2011).

Home influences

Home influences have been noted to affect student engagement and motivation (Barrington & Hendricks, 1989; Marks, 2000). In the conceptual model of this study home influences included cultural norms, parental attitudes and expectations, and parental/sibling relationships. Barrington and Hendricks (1989) found results which

suggested that parental attitudes should be more supportive in order to encourage motivation and engagement. Likewise, Marks (2000) found in his study that parental involvement supported engagement at all grade levels.

Institutional influences

Institutional influences have been proven to have a large impact on student engagement and motivation (Barrington & Hendricks, 1989; Dunleavy & Milton, 2009; Fredricks et al., 2004; Mac Iver & Mac Iver, 2009; Marks, 2000; Ryan & Patrick, 2001; Taylor & Parsons, 2011). In the conceptual model of this study institutional influences included the school structure and culture, the classroom learning environment, and nature of instruction.

School structure and culture: In this study, school structure and culture included teacher/teacher and teacher/administration relationships. Marks (2000) found that a positive school environment that supports student learning benefits student engagement. According to Mac Iver and Mac Iver (2009), schools which promote personal relationships among teachers and students have shown improved student engagement. Furthermore, student course performance is related to how well teachers work together within the school (Mac Iver & Mac Iver, 2009). Student performance has also been noted to be higher in schools which promote high goals, positive work ethics, and plans for students' future (Mac Iver & Mac Iver, 2009).

Classroom learning environment: In this study, the classroom learning environment included elements of teacher/student relationships and learning expectations. Marks (2000) found that the role of classroom support increases as students' progress through school. In Barrington and Hendricks' (1989) study, they found that middle school students require personal attention from teachers and group

counseling sessions to help meet their social needs, help them recognize their abilities, and to help them identify their options for future academic or vocational options. In addition, teacher support has been noted to influence behavioral, emotional, and cognitive engagement (Fredricks et al., 2004). Mac Iver and Mac Iver (2009) indicated student performance was related to relationships with teachers, especially where students can trust their teachers and teachers provide personal support to students. Additionally, open, caring, and respectful relationships between students and teachers have been noted to be necessary to develop social and psychological engagement (Taylor & Parsons, 2011). Taylor and Parsons (2011) found students desire stronger relationships with teachers, each other, and their communities. Students also want their teachers to know how they learn and to establish learning environments which build interdependent relationships and promote a culture of learning (Taylor & Parsons, 2011). Furthermore, Taylor and Parsons (2011) indicated that educators need to change how they teach and what they teach in order to engage learners. Conclusively, teachers who make expectations clear and provide steady responses have students with higher behavioral engagement (Fredricks et al., 2004). When middle school students believe their teacher to be supportive, their value for communicating and interacting with the teacher is increased, they engage in more self-regulated learning, and they are less likely to take part in disruptive behavior (Ryan & Patrick, 2001; Patrick et al., 2007). Ultimately, Patrick et al., (2007) found students who are provided with adaptive classroom environments tend to focus on mastery and feelings of efficacy, and show engagement.

Nature of instruction: In this study, nature of instruction included curriculum, teacher instruction ability, and subject interest. Marks (2000) found class subject matter proved to be a significant factor of engagement. Barrington and Hendricks' (1989) study found that differentiated instruction which is appropriate for the students' ability and level of academic achievement is needed. Mac Iver and Mac Iver (2009) stated schools which provide less curriculum differentiation among students have seen improvements in student engagement. Additionally, Mac Iver and Mac Iver (2009) indicated that student performance is related to students' perception of the relevance of instruction to their future. Taylor and Parsons (2011) found students want instruction which is intellectually engaging and relevant to their lives. Students also desire instruction to be presented in socially, emotionally, and intellectually engaging ways (Taylor & Parsons, 2011). Furthermore, Taylor and Parsons (2011) indicated that effective teaching is distinguished by creating learning tasks which incorporate deep thinking, a student immersion in disciplinary inquiry, connections to the world outside the classroom, and substantive conversation (Willms, Friesen, & Milton, 2009, p.34).

Student Development

The end result of the conceptual model is student development, which leads to either student achievement or student dropout if influenced positively or negatively through the conjunction of external variables motivational thoughts and behaviors (Barrington & Hendricks, 1989; Dunleavy & Milton, 2009; Finn, 1989; Fredricks et al., 2004; Marks, 2000; Martin, 2007; 2008; 2009; Patrick et al., 2007; Ryan & Patrick 2001; Taylor & Parsons, 2011).

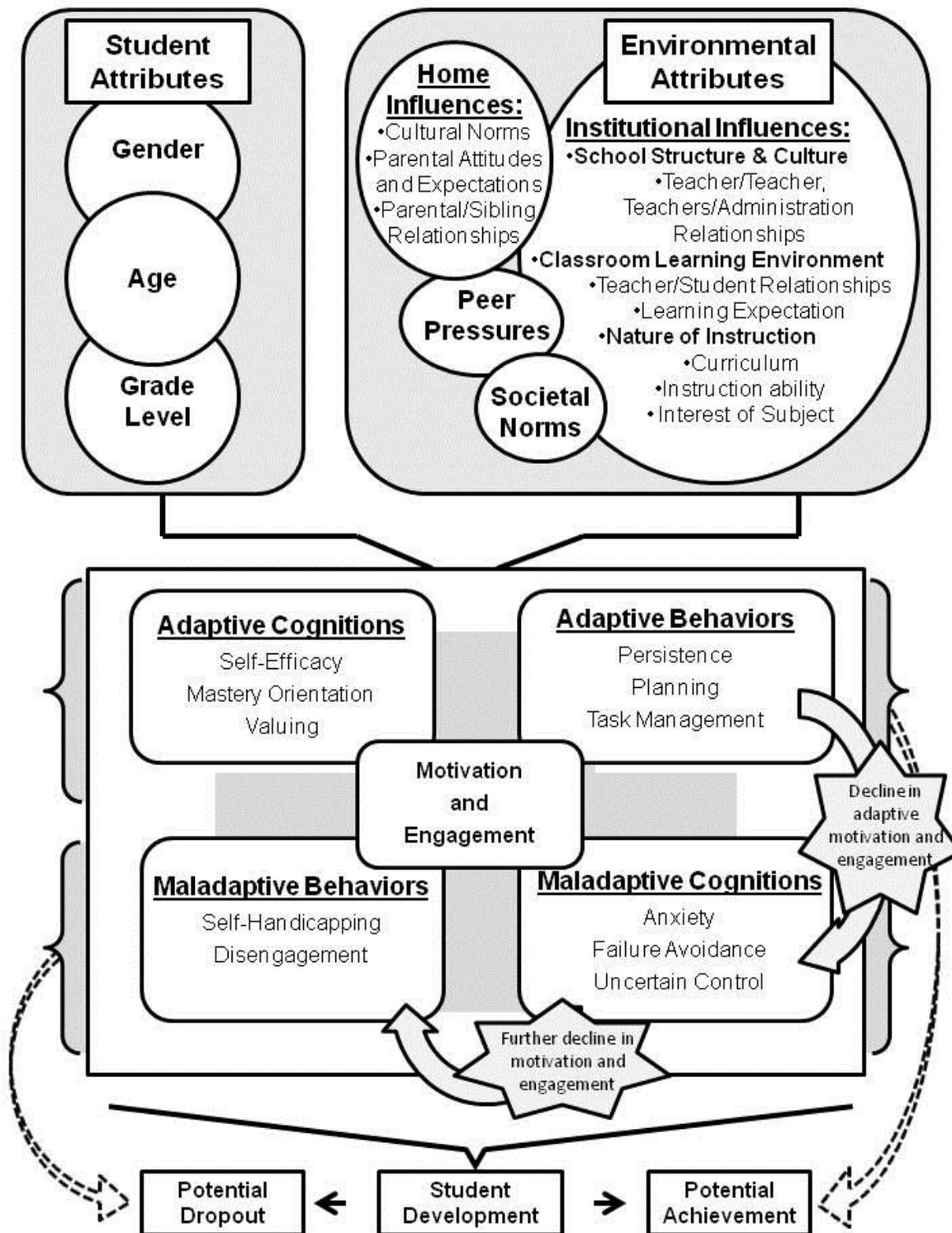


Figure 2-3. A Conceptual Model for Motivation and Engagement (Adapted from Martin (2007, 2008, 2009))

Chapter Summary

Chapter two introduced the theories which provided a foundational basis for this study as student dropout, adolescent cognition theories, theories of motivation, theories of engagement, and motivation and engagement theory. A conceptual model of motivation and engagement was presented based on these theories. Additionally, chapter two provided empirical literature to reinforce the conceptual model of motivation and engagement.

The literature review suggested that theories of motivation and engagement are vast and broad, and most consider them to be disjointed. Martin (2007; 2008; 2009) developed the Engagement and Motivation Wheel as a means to connect influential literature and methods for practitioners. The MEW was viewed as a multi-dimensional construct which combined theories of motivation and engagement in four higher order factors, including adaptive cognitions, adaptive behaviors, maladaptive cognitions, and maladaptive behaviors (Martin, 2007; 2008; 2009). The higher order factors of the MEW are operationalized through eleven lower order components, including self-efficacy, mastery orientation, valuing, persistence, planning, task management, anxiety, failure avoidance, uncertain control, self-handicapping, and disengagement (Martin, 2007; 2008; 2009).

External variables including student attributes (gender, age, and grade level) and environmental attributes (peer pressures, societal norms, home influences, and institutional influences) were noted in the literature to impact student motivation and engagement and were incorporated into the conceptual model of this study. The conceptual model noted that external variables, in addition to positive and negative components of the MEW, can result in either student achievement or dropout.

CHAPTER 3 METHODOLOGY

Chapter one of this study discussed the concerns of low student achievement and high school dropout which have been facing the United States secondary school system. The concepts of student engagement and motivation in learning were portrayed as possible interventions to increase student achievement and decrease the number of students dropping out of school. Additionally, definitions of significant terms, purpose, limitations, assumptions, and objectives of the study were presented in chapter one.

Chapter two offered theoretical frameworks of student dropout, engagement, and motivation. Additionally, the conceptual model of student motivation and engagement was described with supporting empirical literature.

Chapter three describes the methodology of the study including research design, population, instrumentation, data collection and data analysis procedures. The purpose of this study was to ascertain the perspectives of middle school students on engagement and motivation in learning. Specific objectives of the study included:

- 1) Identify middle school agricultural education students' self-reported perceptions of motivation to learn,
- 2) Identify middle school agricultural education students' self-reported perceptions of engagement in learning,
- 3) Examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level), and their perceptions of motivation to learn and engagement in learning.

Research Design

This study utilized a quantitative research perspective, as the purpose of quantitative research is to study cause and effects and relationships of a phenomenon (Ary, Jacobs, & Sorenson, 2010). According to Ary et al. (2010), quantitative research

can be conducted in the forms of experimental and non-experimental research. This study was a form of non-experimental research which utilized a descriptive/correlational research design.

The researcher considered a descriptive/correlational design appropriate to fulfill the research objectives. Descriptive research was utilized to address objectives one and two of this study because descriptive research provides the opportunity to gather information from groups of individuals, and provides the researcher the ability to summarize the characteristics of the groups or to measure the groups' attitudes and opinions toward an issue (Ary et al., 2010). Additionally, correlational research was utilized to address objective three of this study because it enabled the researcher to gather data from individuals on gender, age, and grade level (independent variables) and determine the relationships with students' self-perceptions of engagement and motivation in learning (dependent variable) (Ary et al., 2010).

Validity of the Research Design

According to Ary et al. (2010), researchers must be able to determine if the conclusions drawn concerning the relationships between the variables in the study are valid. Validity of the this study's research design was measured in accordance to Shadish, Cook, and Campbell's (2002) four categories of validity threats, including internal validity, external validity, construct validity, and statistical conclusion validity.

Internal Validity

Internal validity has been noted as the basic requirement to interpret correct conclusions from a study (Ary et al., 2010). Ary et al. (2010) described internal validity as the observed changes in the dependent variable being caused by the independent variable(s) rather than by extraneous factors. Additionally, Ary et al. (2010) noted that

the research design must control extraneous variables in order to eliminate alternative explanations of the outcomes. Several of the noted threats of validity described by Ary et al. (2010) were not considered to affect this study as they pertained solely to experimental designs. However, the four following types of threats were considered to apply to this study: selection bias, attrition, experimenter bias, and subject effects.

Selection bias: Selection bias has been noted to occur when the researcher must use intact groups and/or volunteers (Ary et al., 2010). For this study, middle school agricultural education instructors were invited to participate, and those instructors who agreed to participate administered the MES to the students within their classrooms. Thus, selection of participants served as a minor limitation of this study.

Attrition: The threat of attrition occurs when there is a loss of participations from comparison groups (Ary et al., 2010). Attrition and/or nonresponse were considered threats to this study because data were limited to those students who chose to participate, were given permission by their parents, and were present the day the MES was administered.

Experimenter bias: Ary et al. (2010) indicated that experimenter bias occurs when the researcher has unintentional effects on the study. Experimenter bias was considered to be a limitation of the study as students were administered the MES-JS by their teacher, which may have affected how students responded to questions on the instrument. However, to try to prevent experimenter bias, uniform protocols were developed and used in this study. Instructions were provided to teachers to be read verbatim to participants, and teachers were instructed to solely answer questions

regarding the instructions and IRB consent. Finally, participants were instructed to place the instrument in a large envelope in order to ensure privacy and security.

Subject effects: Subject effects were considered to be a minor limitation to this study. The MES-JS was designed to measure students' self-perception of motivation and engagement in learning. Consequently, there was a possibility of students providing socially desirable answers. However, the researcher assumed that all participants answered in a truthful manner.

External Validity

According to Ary et al. (2010), external validity refers to the degree to which the conclusions of the study can be generalized to other subjects and settings. This study utilized a convenience sample. Thus, the results of this study cannot be generalized beyond students similar to those used in this study.

Construct Validity

Ary et al. (2010) defined construct validity as the extent to which an instrument measures the psychological construct it is intended to measure. McMillan and Schumacher (2010) indicated three important construct validity threats to educational research. However, the researcher deemed only the two following threats as applicable to the research design of this study.

Inadequate preoperational explication of constructs: To prevent the threat of inadequate preoperational explication of constructs, this study used well-known constructs within educational research. Additionally, each construct was operationally defined according to the literature and the instrument used.

Mono-method bias: Mono-method bias was recognized as a limitation of this study as the researcher utilized a self-reported method as the sole means of data collection.

Statistical Conclusion Validity

Ary et al. (2010) defined statistical conclusion validity as the proper use of statistics to conclude that an observed relationship between the independent and dependent variable in a study is an accurate case of a cause and effect relationship rather than due to chance. Shadish et al. (2002) indicated several threats to statistical conclusion validity. However, most of these threats were deemed as not applicable to this study as they addressed experimental designs. The following threats were considered as applicable to this study.

Low statistical power: To account for the threat of low statistical power the researcher used a uniform protocol for administering the instrument to help ensure conditions were the same when data were collected. Additionally, a reliable instrument was used in order to reduce measurement error (McMillan & Schumacher 2010).

Violated assumptions of statistical tests: The assumptions of the statistical tests utilized in this study were explained in the data analysis section in order to avoid violating assumptions of statistical tests.

Unreliability of measures: Reliability estimates of the instrument were reported in the instrumentation section and were found to be satisfactory by the researcher.

Population

The population of interest for this study included middle school agricultural education students in Florida. A convenience sample was used in this study based on geographical location to the researcher. An invitation to participate in this study (See

Appendix A) was sent to twelve middle school agricultural educators in North Florida, and six educators agreed to participate in the study. The six educators who agreed to participate were located in Alachua, Baker, Clay, Gilchrist, Levy and Suwannee counties.

The students within the six classrooms of those agricultural education educators who agreed to participate became the accepting population of this study. Based on enrollment figures an estimated 700 instruments were sent to participants among the six educators who agreed to participate in the study. A total of 218 instruments were received from participants; however only 213 were included in the analysis of this study as five instruments were incomplete.

Instrumentation

This study utilized a directly administered questionnaire in order to increase the probability of receiving a high response rate (Ary et al., 2010). The Motivation and Engagement Scale-High School was first developed by Martin (2007). In previous studies Martin (2007) found the confirmatory factor analysis (CFA) to fit the data. Martin (2007) found the mean correlation between adaptive factors to be $r = .33$, the mean correlation between impeding factors to be $r = .51$, and the mean correlation between maladaptive dimensions to be $r = .58$, indicating that there was concurrent validity but sufficient distinctiveness to be retained as separate first-order factors. Additionally, Martin (2007) found lower levels of shared variance between factor groups than within factor groups, which was indicated by a mean correlation between adaptive and impeding dimensions of $r = .02$, a mean correlation between adaptive and maladaptive dimensions of $r = .41$, and a mean correlation between impeding and maladaptive dimensions of $r = .33$.

In a further study, Martin (2009) described the development of the Motivational and Engagement Scale across the academic life span, including junior high school, high school, and university. A pilot study conducted by Martin showed younger students had difficulty differentiating the finer-grained points on the 7-point scale. Martin (2009) indicated that in order to simplify the instrument for younger students, the scale was shortened to a 5-point Likert-type scale versus a more typical 7-point scale used in most studies. Martin (2009) indicated that all three sample loadings were acceptable and was supported by acceptable reliability coefficients. Ultimately, Martin (2009) found invariance across junior high school, high school, and university settings.

The Motivation and Engagement Scale-Junior School (MES-JS) (See Appendix B) was used in this study. The MES-JS was designed to measure junior high school students' (9-13 years old) perception of motivation and engagement in learning (Martin, 2012). The MES-JS collected data on student motivation and engagement through three adaptive cognitive dimensions, three adaptive engagement dimensions, three maladaptive cognitive dimensions, and two maladaptive engagement dimensions (Life Martin, 2012). The instrument was a 44-item questionnaire comprised of four items for each of the eleven factors (Martin, 2012). The questionnaire was a 5-point Likert-type scale with answer choices consisting of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) (Martin, 2012).

Martin (2012) reported psychometric properties based on data collected from 1,249 students across 63 classes in 15 junior high schools. A satisfactory fit to the data was reported from a first order CFA using LISREL 8.80 yielding ($\chi^2=2,724.92$, $df=847$) and a higher order CFA ($\chi^2= 3,197.18$, $df=886$,) (Martin, 2012). A mean reliability

(Cronbach's α) for the eleven subscales was reported as .78 (Martin, 2012). The current researcher calculated a post hoc reliability analysis, the results of which will be reported in chapter four.

Data Collection

This study was approved by the Institutional Review Board (IRB) at the University of Florida (See Appendix D). After receiving IRB approval, data were collected between December 2012 and January 2013. Middle school agricultural educators were invited to participate in this study. After agreement to participate in the study, packets containing administration protocols (See Appendix C), IRB consent forms (See Appendices E and F), the MES-JS (See Appendix B), and a large envelope to collect the instruments were distributed to teachers.

Teachers were instructed to read the script of IRB directions (See Appendix C) and distribute IRB consent forms to be sent home with students in order to obtain parental consent, as participants were minors. Once returned, IRB consent forms were collected and educators were instructed to administer the MES-JS to only those students who returned IRB consent forms. Additionally, teachers were provided a script of instructions (See Appendix C) to read aloud in order ensure consistency, and directions were also printed at the top of the instrument. Upon completion of the instrument students were instructed to place their questionnaire in a large envelope in order to ensure privacy and security.

Data Analysis

Data were entered into Microsoft Excel by the researcher and analyzed using SPSS version 17.0 for Windows XP software. Research objectives one and two utilized descriptive statistics and included means, range, frequencies, and standard deviations.

Research objective three investigated relationships and correlations were utilized to analyze the data.

Research Objective One

Research objective one was to identify middle school agricultural education students' self-reported perceptions of motivation to learn. Data were collected using the MES-JS to accomplish this objective. Instrument scoring procedures given by Martin (2012) in the MES-JS test user manual were used to score the instrument. Scores for each question were entered into Microsoft Excel to formulate raw scores for each construct. Raw scores were calculated using a formula provided by Martin (2012), such as the following example.

$$\textit{Self-Belief: } ((Q13 + Q 23 + Q33 + Q40) / 20) \times 100$$

The following is an explanation of the formula: Q13, Q23, Q33, Q40 represent the four questions from the instrument which pertain to the *self-belief* construct which were added together. The sum was then divided by 20 and multiplied by 100.

Scoring procedures described in the test manual were followed when encountering instruments with missing items for constructs. Martin (2012) provided an additional formula to use when one question per construct was left unanswered, such as the following example:

$$\textit{Self-Belief: } ((Q13 + Q 23 + Q33 + Q40) / 15) \times 100$$

The following is an explanation of the formula: Q13, Q23, Q33, Q40 represent the four questions from the instrument which pertain to the *self-belief* construct which were added together. The sum was then divided by 15 to reflect the missing question and multiplied by 100. Those instruments with more than one missing answer for each construct were eliminated from the study.

Raw scores were calculated for each construct for each participant. The means and standard deviations were then calculated for each construct with all participants, as well as, by gender, age, and grade level.

Global booster thought scores were calculated following a formula provided by Martin (2012) in the MES-JS test user manual, such as the example that follows:

$$(SB + V + LF) / 3$$

The following is an explanation of the formula: SB represents the self-belief raw score, V represents the valuing raw score, and LF represents the learning focus raw score. The sum was divided by 3 to represent the average of the adaptive motivational thoughts.

Global muffler scores were calculated following a formula provided by Martin (2012) in the MES-JS test user manual, such as the example that follows:

$$(A+ FA+ UC) / 3$$

The following is an explanation of the formula: A represents the anxiety raw score, FA represents the failure avoidance raw score, and UC represents the uncertain control raw score. The sum was divided by 3 to represent the average of the maladaptive motivational thoughts.

Global booster thought and global muffler scores were calculated for each participant. The means and standard deviations were then calculated for global booster thought and global muffler scores for all participants, as well as, by gender, age, and grade level.

Data were analyzed using descriptive statistics including the mean and standard deviations. Assumptions of central tendency were met, as the MES-JS collected interval

data using a 5-point Likert-type scale (Ary et al., 2010). The test user manual instructions were followed when interpreting scores. Raw scores were evaluated based off of an average of 100 for junior school students (Martin, 2012). For adaptive motivational scores (self-belief, valuing, and learning focus) higher scores were considered better, and for maladaptive motivational scores (anxiety, failure avoidance, and uncertain control) lower scores were considered better (Martin, 2012).

Research Objective Two

Research objective two was to identify middle school agricultural education students' self-reported perceptions of engagement in learning. Data were collected using the MES-JS to accomplish this objective. Instrument scoring procedures given by Martin (2012) in the MES-JS test user manual were used to score the instrument. Scores for each question were entered into Microsoft Excel to formulate raw scores for each construct. Raw scores were calculated using a formula provided by Martin (2012), such as the following example.

$$\textit{Task Management: } ((Q3 + Q17 + Q32 + Q44) / 20) \times 100$$

The following is an explanation of the formula: Q3, Q17, Q32, Q44 represent the four questions from the instrument which pertain to the *task management* construct which were added together. The sum was then divided by 20 and multiplied by 100.

Scoring procedures described in the test manual were followed when encountering instruments with missing items for constructs. Martin (2012) provided an additional formula to use when one question per construct was left unanswered, such as the following example:

$$\textit{Task Management: } ((Q3 + Q17 + Q32 + Q44) / 15) \times 100$$

The following is an explanation of the formula: Q3, Q17, Q32, Q44 represent the four questions from the instrument which pertain to the *task management* construct which were added together. The sum was then divided by 15 to reflect the missing question and multiplied by 100. Those instruments with more than one missing answer for each construct were eliminated from the study.

Raw scores were calculated for each construct for each participant. The means and standard deviations were then calculated for each construct with all participants, as well as, by gender, age, and grade level.

Global booster engagement scores were calculated following a formula provided by Martin (2012) in the MES-JS test user manual, such as the example that follows:

$$(PLN + TM + P) / 3$$

The following is an explanation of the formula: PLN represents the planning raw score, TM represents the task management raw score, and P represents the persistence raw score. The sum was divided by 3 to represent the average of the adaptive engagement behaviors.

Global guzzler scores were calculated following a formula provided by Martin (2012) in the MES-JS test user manual, such as the example that follows:

$$(D+ SS) / 2$$

The following is an explanation of the formula: D represents the disengagement raw score and SS represents the self-sabotage raw score. The sum was divided by 2 to represent the average of the maladaptive engagement behaviors.

Global booster engagement and global guzzler scores were calculated for each participant. The means and standard deviations were then calculated for global booster

engagement and global guzzler scores for all participants, as well as, by gender, age, and grade level.

Data were analyzed using descriptive statistics including the mean and standard deviations. Assumptions of central tendency were met as the MES-JS collected interval data using a 5-point Likert-type scale (Ary et al., 2010). The test user manual instructions were followed when interpreting scores. Raw scores were evaluated based off of an average of 100 for junior school students (Martin, 2012). For adaptive engagement scores (planning, task management, and persistence) higher scores were considered better, and for maladaptive engagement scores (disengagement and self-sabotage) lower scores were considered better (Martin, 2012).

Research Objective Three

Research objective three was to examine the relationship between middle school agricultural education students' demographic characteristics (age, gender, and grade level), and self-reported perceptions of motivation and engagement in learning. Data were collected using the MES-JS to accomplish this objective. Construct raw scores and global scores calculated according to formulas provided by Martin (2012) in the MES-JS test user manual, as described in objectives one and two, were used to run correlations.

Pearson r correlations were used to determine the relationship between age, grade level, and engagement and motivation in learning as these variables contain continuous data. This study aimed to collect data on participants operationalized as "middle school" students. Therefore, while a small portion of students in the sample fell outside of "traditional" ages of middle school students, their data was still included as they are students attending middle school.

Point biserial correlations were calculated between gender and engagement and motivation in learning, as it is dichotomous data (Ary et al., 2010). This study meets the assumptions of Pearson r correlations and biserial correlations, as data were collected using interval data from the MES-JS and were assumed to be normally distributed.

Chapter Summary

Chapter three discussed the details of the research methodology of this study including the research design, population, instrumentation, data collection, and data analysis. This study used a descriptive/correlational research design to gather information on students' self-perceptions of motivation and engagement (dependent variable) and students' demographic variables including, age, gender, and grade level (independent variable), and to determine relationships between the independent and dependent variables. The study's population included middle school agricultural education students in Florida. A convenience sample of students was taken from six schools within Florida.

The MES-JS was used to collect data concerning middle school students' perceptions of motivation and engagement in learning. Data were analyzed using SPSS version 17.0 for Windows XP software. Descriptive statistics including means, range, frequencies, and standard deviations were used to analyze data concerning research objectives one and two, and Pearson r and biserial point correlations were used to analyze the relationships between variables in objective three. The results of the data analysis will be discussed in chapter four.

CHAPTER 4 RESULTS

The problem of the current drop out epidemic facing the United States was introduced in chapter 1 of this study. Student motivation and engagement were introduced as constructs that can potentially decrease student dropout rates in the United States. Additionally, definitions of key terms, the purpose of the study, limitations and assumptions, and the objectives of the study were discussed. The purpose of this study was to ascertain the perspectives of agricultural education middle school students on motivation and engagement in learning. The specific objectives of this study were to:

- 1) Identify middle school agricultural education students' self-reported perceptions of motivation to learn,
- 2) Identify middle school agricultural education students' self-reported perceptions of engagement in learning,
- 3) Examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level), and their perceptions of motivation to learn and engagement in learning.

Chapter 2 discussed the foundational theories of this study including student dropout, adolescent cognition theories, theories of motivation, theories of engagement, and motivation and engagement theory. A conceptual model of motivation and engagement was also presented based on these theories. Additionally, empirical literature was provided to reinforce the conceptual model of motivation and engagement.

Chapter 3 discussed the research methodology of this study. Research design, population, instrumentation, data collection procedures, and data analysis were also described in this chapter.

Chapter 4 discusses the results of the data analysis listed by objective.

Response Rates

Twelve agricultural education teachers located in North Florida were invited to participate in this study. Six of the twelve teachers agreed to participate in the study. Thus, the students within the classrooms of the teachers who agreed to participate became the accepting population of the study.

Based on enrollment figures an estimated 700 instruments were sent to participants among the six educators who agreed to participate in the study. Students were administered the MES-JS from December 2012-January 2013. A total of 218 instruments were received back from participants; however only 213 were included in the analysis of this study as five instruments were incomplete.

Post-Hoc Reliability of Instruments

Cronbach's alpha was utilized to determine a post-hoc reliability of .79 of the instrument used in this study. The MES-JS (Lifelong Achievement Group, 2012) measured student motivation through three adaptive cognitive dimensions (self-belief, learning focus, and valuing) and three maladaptive cognitive dimensions (uncertain control, failure avoidance, and anxiety) (Lifelong Achievement Group, 2012). The MES-JS measured student engagement through three adaptive behaviors (persistence, planning, and task management) and two maladaptive behavior dimensions (self-sabotage and disengagement) (Lifelong Achievement Group, 2012).

Description of Population

The population was described using age, gender, and grade level. An overview of the descriptive statistics is given in Table 4-1.

Gender

The majority of students were female (51.6%); 47.4% were males. A small portion of students (.9%) did not report their gender (Table 4-1).

Age

Age of participants was categorized as ages 11, 12, 13, 14, 15, and 16. The largest group of participants was 13 years old (38.0%). The second largest group was 12 years old (28.6%), followed by 14 years old (19.2 %), 11 years old (10.8 %), 15 years old (2.3 %), and 16 years old (.5 %). A small portion (.5%) of participants did not report their age (Table 4-1).

Grade Level

Participants' grade levels were categorized into grades 6, 7, and 8. The largest group of participants was in the 8th grade (37.6 %), followed by 7th grade (36.6%), and 6th grade (24.9 %). A small portion (.9%) of students did not report their grade level (Table 4-1).

Table 4-1. Descriptive Statistics of the Sample ($n = 213$)

	Frequency (<i>f</i>)	Percent (%)
Gender		
Male	101	47.4
Female	110	51.6
Not Reported	2	.9
Age		
11	23	10.8
12	61	28.6
13	81	38.0
14	41	19.2
15	5	2.3
16	1	.5
Not Reported	1	.5

Table 4-1. Continued

Grade Level	Frequency (<i>f</i>)	Percent (%)
6	53	24.9
7	78	36.6
8	80	37.6
Not Reported	2	.9

Objective One

Objective 1 was to identify middle school agricultural education students' self-reported perceptions of motivation to learn (See Table 4-2). Students were asked to complete the MES-JS which measured the constructs of adaptive cognitive dimensions (self-belief, learning focus, and valuing) and maladaptive cognitive dimensions (uncertain control, failure avoidance, and anxiety) (Lifelong Achievement Group, 2012). There was a total of 213 useable responses. Constructs were measured using a Likert-type scale of 1-5, with 1 being *strongly disagree* to 5 *strongly agree* (Martin, 2012). Means for adaptive cognitive constructs were self-belief 83.05 (SD = 12.4, *n* = 213), learning focus 83.24 (SD = 13.1, *n* = 213), and valuing 80.92 (SD = 14.9, *n* = 213). Means for maladaptive cognitive constructs were uncertain control 41.37 (SD = 15.6, *n* = 213), failure avoidance 55.27 (SD = 21.6, *n* = 213), and anxiety 62.78 (SD = 17.3, *n* = 213).

Table 4-2. Adaptive and Maladaptive Motivation Construct Means (*n* = 213)

	Range		Mean	Std Deviation
	Low	High		
Adaptive Construct				
Self-Belief	40	100	83.05	12.4
Learning Focus	40	100	83.24	13.1
Valuing	30	100	80.92	14.9

Table 4-2. Continued

	Range		Mean	Std Deviation
	Low	High		
Maladaptive Construct				
Uncertain Control	20	87	41.37	15.6
Failure Avoidance	20	100	55.27	21.6
Anxiety	20	100	62.78	17.3

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Mean construct scores for adaptive and maladaptive constructs were also calculated by age (See Table 4-3), grade level (See Table 4-4), and gender (See Table 4-5). Means for adaptive constructs for 11 year old participants were self-belief 83.48 (SD = 17.6, $n = 23$), learning focus 83.91 (SD = 13.3, $n = 23$), and valuing 79.64 (SD = 17.5, $n = 23$). Means for maladaptive constructs for 11 year old participants were uncertain control 42.68 (SD = 19.3, $n = 23$), failure avoidance 50.43 (SD = 23.6, $n = 23$), and anxiety 63.26 (SD = 17.6, $n = 23$). Means for adaptive constructs for 12 year old participants were self-belief 84.67 (SD = 10.6, $n = 61$), learning focus 84.02 (SD = 13.3, $n = 61$), and valuing 81.89 (SD = 14.6, $n = 61$). Means for maladaptive constructs for 12 year old participants were uncertain control 41.72 (SD = 15.6, $n = 61$), failure avoidance 54.51 (SD = 20.5, $n = 61$), and anxiety 62.38 (SD = 17.2, $n = 61$). Means for adaptive constructs for 13 year old participants were self-belief 82.90 (SD = 13.0, $n = 81$), learning focus 82.90 (SD = 13.6, $n = 81$), and valuing 80.60 (SD = 15.8, $n = 81$). Means for maladaptive constructs for 13 year old participants were uncertain control 39.63 (SD = 14.3, $n = 81$), failure avoidance 53.60 (SD = 22.0, $n = 81$), and anxiety 60.68 (SD = 17.2, $n = 81$). Means for adaptive constructs for 14 year old participants were self-belief 80.37 (SD = 10.0, $n = 41$), learning focus 81.46 (SD = 12.5, $n = 41$), and valuing 80.61

(SD = 11.9, $n = 41$). Means for maladaptive constructs for 14 year old participants were uncertain control 41.22 (SD = 15.7, $n = 41$), failure avoidance 60.12 (SD = 21.0, $n = 41$), and anxiety 65.28 (SD = 17.3, $n = 41$). Means for adaptive constructs for 15 year old participants were self-belief 85.00 (SD = 13.6, $n = 5$), learning focus 89.00 (SD = 11.4, $n = 5$), and valuing 81.00 (SD = 15.9, $n = 5$). Means for maladaptive constructs for 15 year old participants were uncertain control 50.00 (SD = 9.3, $n = 5$), failure avoidance 70.00 (SD = 21.5, $n = 5$), and anxiety 78.00 (SD = 10.9, $n = 5$). Means for adaptive constructs for 16 year old participants were self-belief 80 ($n = 1$), learning focus 85 ($n = 1$), and valuing 70 ($n = 1$). Means for maladaptive constructs for 16 year old participants were uncertain control 60 ($n = 1$), failure avoidance 55 ($n = 1$), and anxiety 45 ($n = 1$).

Table 4-3. Adaptive and Maladaptive Motivation Construct Age Means

	Range		Mean	Std Deviation
	Low	High		
Age 11 ($n = 23$)				
Adaptive Construct				
Self-Belief	40	100	83.48	17.6
Learning Focus	50	100	83.91	13.3
Valuing	40	100	79.64	17.5
Maladaptive Construct				
Uncertain Control	20	87	42.68	19.3
Failure Avoidance	20	100	50.43	23.6
Anxiety	25	95	63.26	17.6
Age 12 ($n = 61$)				
Adaptive Construct				
Self-Belief	60	100	84.67	10.6
Learning Focus	50	100	84.02	13.3
Valuing	30	100	81.89	14.6
Maladaptive Construct				
Uncertain Control	20	80	41.72	15.6
Failure Avoidance	20	100	54.51	20.5
Anxiety	30	100	62.38	17.2

Table 4-3. Continued

	Range		Mean	Std Deviation
	Low	High		
Age 13 (<i>n</i> = 81)				
Adaptive Construct				
Self-Belief	50	100	82.90	13.0
Learning Focus	40	100	82.90	13.6
Valuing	30	100	80.60	15.8
Maladaptive Construct				
Uncertain Control	20	75	39.63	14.3
Failure Avoidance	20	100	53.60	22.0
Anxiety	20	95	60.68	17.2
Age 14 (<i>n</i> = 41)				
Adaptive Construct				
Self-Belief	60	100	80.37	10.0
Learning Focus	55	100	81.46	12.5
Valuing	55	100	80.61	11.9
Maladaptive Construct				
Uncertain Control	20	75	41.22	15.7
Failure Avoidance	20	100	60.12	21.0
Anxiety	20	95	65.28	17.3
Age 15 (<i>n</i> = 5)				
Adaptive Construct				
Self-Belief	65	100	85.00	13.6
Learning Focus	75	100	89.00	11.4
Valuing	60	100	81.00	15.9
Maladaptive Construct				
Uncertain Control	40	65	50.00	9.3
Failure Avoidance	45	95	70.00	21.5
Anxiety	60	86	78.00	10.9
Age 16 (<i>n</i> = 1)				
Adaptive Construct				
Self-Belief	80	80	80	-----
Learning Focus	85	85	85	-----
Valuing	70	70	70	-----
Maladaptive Construct				
Uncertain Control	60	60	60	-----
Failure Avoidance	55	55	55	-----
Anxiety	45	45	45	-----

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Means for adaptive constructs for 6th grade participants were self-belief 83.87 (SD = 13.8, *n* = 53), learning focus 83.96 (SD = 12.9, *n* = 53), and valuing 86.64 (SD = 16.9, *n* = 53). Means for maladaptive constructs for 6th grade participants were uncertain control 42.33 (SD = 18.2, *n* = 53), failure avoidance 51.70 (SD = 22.4, *n* = 53), and anxiety 62.83 (SD = 16.9, *n* = 53). Means for adaptive constructs for 7th grade participants were self-belief 84.04 (SD = 11.2, *n* = 78), learning focus 84.68 (SD = 13.0, *n* = 78), and valuing 81.60 (SD = 14.2, *n* = 78). Means for maladaptive constructs for 7th grade participants were uncertain control 41.45 (SD = 13.9, *n* = 78), failure avoidance 56.99 (SD = 22.2, *n* = 78), and anxiety 62.20 (SD = 18.2, *n* = 78). Means for adaptive constructs for 8th grade participants were self-belief 81.31 (SD = 12.4, *n* = 80), learning focus 81.31 (SD = 13.7, *n* = 80), and valuing 78.94 (SD = 14.0, *n* = 80). Means for maladaptive constructs for 8th grade participants were uncertain control 40.25 (SD = 15.0, *n* = 80), failure avoidance 55.77 (SD = 20.7, *n* = 80), and anxiety 63.19 (SD = 16.9, *n* = 80).

Table 4-4. Adaptive and Maladaptive Motivation Construct Grade Level Means

	Range		Mean	Std Deviation
	Low	High		
Grade 6 (<i>n</i> = 53)				
Adaptive Construct				
Self-Belief	40	100	83.87	13.8
Learning Focus	50	100	83.96	12.9
Valuing	35	100	82.64	16.9
Maladaptive Construct				
Uncertain Control	20	87	42.33	18.2
Failure Avoidance	20	100	51.70	22.4
Anxiety	25	100	62.83	16.9
Grade 7 (<i>n</i> = 78)				
Adaptive Construct				
Self-Belief	55	100	84.04	11.2
Learning Focus	50	100	84.68	13.0
Valuing	30	100	81.60	14.2

Table 4-4. Continued

	Range		Mean	Std Deviation
	Low	High		
Maladaptive Construct				
Uncertain Control	20	75	41.45	13.9
Failure Avoidance	20	100	56.99	22.2
Anxiety	20	95	62.20	18.2
Grade 8 (<i>n</i> = 80)				
Adaptive Construct				
Self-Belief	50	100	81.31	12.4
Learning Focus	40	100	81.31	13.7
Valuing	30	100	78.94	14.0
Maladaptive Construct				
Uncertain Control	20	75	40.25	15.0
Failure Avoidance	20	100	55.77	20.7
Anxiety	80	20	63.19	16.9

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Means for adaptive constructs for male participants were self-belief 82.92 (SD = 11.8, *n* = 101), learning focus 81.63 (SD = 12.9, *n* = 101), and valuing 79.88 (SD = 16.0, *n* = 101). Means for maladaptive constructs for male participants were uncertain control 40.97 (SD = 15.1, *n* = 101), failure avoidance 54.90 (SD = 21.0, *n* = 101), and anxiety 57.79 (SD = 16.9, *n* = 101). Means for adaptive constructs for female participants were self-belief 83.00 (SD = 12.9, *n* = 110), learning focus 84.68 (SD = 13.2, *n* = 110), and valuing 81.74 (SD = 13.8, *n* = 110). Means for maladaptive constructs for female participants were uncertain control 41.44 (SD = 15.8, *n* = 110), failure avoidance 55.47 (SD = 22.4, *n* = 110), and anxiety 67.27 (SD = 16.5, *n* = 110).

Table 4-5. Adaptive and Maladaptive Motivation Construct Gender Means

	Range		Mean	Std Deviation
	Low	High		
Male (<i>n</i> = 101)				
Adaptive Construct				
Self-Belief	55	100	82.92	11.8

Table 4-5. Continued

	Range		Mean	Std Deviation
	Low	High		
Learning Focus	40	100	81.63	12.9
Valuing	30	100	79.88	16.0
Maladaptive Construct				
Uncertain Control	20	87	40.97	15.1
Failure Avoidance	20	100	54.90	21.0
Anxiety	20	100	57.79	16.9
Female ($n = 110$)				
Adaptive Construct				
Self-Belief	40	100	83.00	12.9
Learning Focus	45	100	84.68	13.2
Valuing	35	100	81.74	13.8
Maladaptive Construct				
Uncertain Control	20	75	41.44	15.8
Failure Avoidance	20	100	55.47	22.4
Anxiety	25	95	67.27	16.5

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Global mean construct scores were also calculated for adaptive and maladaptive motivation constructs (See Table 4-6). A Global Booster Thought mean score of 82.40 (SD = 11.3, $n = 213$) was calculated using the average mean scores of adaptive cognitive constructs (self-belief, learning focus, and valuing). A Global Muffler mean score of 53.14 (SD = 13.7, $n = 213$) was calculated using the average mean scores of maladaptive cognitive constructs (uncertain control, failure avoidance, and anxiety).

Table 4-6. Adaptive and Maladaptive Global Motivation Construct Means ($n = 213$)

	Range		Mean	Std Deviation
	Low	High		
Global Booster Thought	43.33	100.00	82.40	11.3
Global Muffler	23.33	86.66	53.14	13.7

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

Global mean construct scores for adaptive and maladaptive motivation constructs were also calculated by age (See Table 4-7), grade level (See Table 4-8), and gender (See Table 4-9). The mean Global Booster Thought score for 11 year old participants was 82.34 (SD = 14.5, $n = 23$) and the mean Global Muffler was 52.12 (SD = 16.8, $n = 23$). The mean Global Booster Thought score for 12 year old participants was 83.52 (SD = 10.4, $n = 61$) and the mean Global Muffler was 52.87 (SD = 13.6, $n = 61$). The mean Global Booster Thought score for 13 year old participants was 82.13 (SD = 12.0, $n = 81$) and the mean Global Muffler was 51.30 (SD = 12.7, $n = 81$). The mean Global Booster Thought score for 14 year old participants was 80.81 (SD = 8.7, $n = 41$) and the mean Global Muffler was 55.54 (SD = 13.1, $n = 41$). The mean Global Booster Thought score for 15 year old participants was 85.00 (SD = 12.9, $n = 5$) and the mean Global Muffler was 66.00 (SD = 12.45, $n = 5$). The mean Global Booster Thought score for 16 year old participants was 78.33 ($n = 1$) and the mean Global Muffler mean was 53.33 ($n = 1$).

Table 4-7. Adaptive and Maladaptive Global Motivation Construct Age Means

	Range		Mean	Std Deviation
	Low	High		
Age 11 ($n = 23$)				
Global Booster Thought	43.33	100.00	82.34	14.5
Global Muffler	26.66	81.66	52.12	16.8
Age 12 ($n = 61$)				
Global Booster Thought	56.66	100.00	83.52	10.4
Global Muffler	30.00	86.66	52.87	13.6
Age 13 ($n = 81$)				
Global Booster Thought	46.66	100.00	82.13	12.0
Global Muffler	23.33	83.33	51.30	12.7
Age 14 ($n = 41$)				
Global Booster Thought	60.00	98.33	80.81	8.7
Global Muffler	31.66	83.33	55.54	13.1

Table 4-7. Continued

	Range		Mean	Std Deviation
	Low	High		
Age 15 ($n = 5$)				
Global Booster Thought	66.66	98.33	85.00	12.9
Global Muffler	51.66	81.66	66.00	12.4
Age 16 ($n = 1$)				
Global Booster Thought	78.33	78.33	78.33	-----
Global Muffler	53.33	53.33	53.33	-----

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

The mean Global Booster Thought score for 6th grade participants was 83.49 (SD = 12.7, $n = 53$) and the mean Global Muffler was 52.29 (SD = 15.6, $n = 53$). The mean Global Booster Thought score for 7th grade participants was 83.44 (SD = 10.2, $n = 78$) and the mean Global Muffler was 53.54 (SD = 13.6, $n = 78$). The mean Global Booster Thought score for 8th grade participants was 80.52 (SD = 11.1, $n = 80$) and the mean Global Muffler was 53.06 (SD = 12.6, $n = 80$).

Table 4-8. Adaptive and Maladaptive Global Motivation Construct Grade Level Means

	Range		Mean	Std Deviation
	Low	High		
Grade 6 ($n = 53$)				
Global Booster Thought	43.33	100.00	83.49	12.7
Global Muffler	26.66	83.33	52.29	15.6
Grade 7 ($n = 78$)				
Global Booster Thought	55.00	100.00	83.44	10.2
Global Muffler	25.00	86.66	53.54	13.6
Grade 8 ($n = 80$)				
Global Booster Thought	46.66	100.00	80.52	11.1
Global Muffler	23.33	81.66	53.06	12.6

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

The mean Global Booster Thought score for male participants was 81.48 (SD = 11.4, $n = 101$) and the mean Global Muffler was 51.22 (SD = 13.3, $n = 101$). The mean Global Booster Thought score for female participants was 83.14 (SD = 11.1, $n = 110$) and the mean Global Muffler was 54.72 (SD = 13.9, $n = 110$).

Table 4-9. Adaptive and Maladaptive Global Motivation Construct Gender Means

	Range		Mean	Std Deviation
	Low	High		
Males ($n = 101$)				
Global Booster Thought	46.66	100.00	81.48	11.4
Global Muffler	28.33	83.33	51.22	13.3
Female ($n = 101$)				
Global Booster Thought	43.33	100.00	83.14	11.1
Global Muffler	23.33	86.66	54.72	13.9

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

Objective Two

Objective 2 was to identify self-reported perceptions of engagement in learning of middle school agricultural education students (See Table 4-10). Students were asked to complete the MES-JS which measured the constructs of adaptive engagement behaviors (persistence, planning, and task management) and maladaptive engagement behavior dimensions (self-sabotage and disengagement) (Lifelong Achievement Group, 2012). There was a total of 213 useable responses. Constructs were measured using a Likert-type scale of 1 to 5; with 1 being *strongly disagree* to 5 *strongly agree* (Martin, 2012). Means for adaptive engagement constructs were persistence 73.30 (SD = 13.9, $n = 213$), task management 75.02 (SD = 16.4, $n = 213$), and planning 68.22 (SD = 17.3, $n = 213$). Means for maladaptive engagement constructs were disengagement 35.33 (SD = 13.9, $n = 213$) and self-sabotage 36.92 (SD = 16.3, $n = 213$).

Table 4-10. Adaptive and Maladaptive Engagement Construct Means ($n = 213$)

	Range		Mean	Std Deviation
	Low	High		
Adaptive Construct				
Persistence	25	100	73.30	13.9
Task Management	30	100	75.02	16.4
Planning	20	100	68.22	17.3
Maladaptive Construct				
Disengagement	20	85	35.33	13.9
Self- Sabotage	20	95	36.92	16.3

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Means for adaptive and maladaptive engagement constructs were also calculated by age (See Table 4-11), grade level (See Table 4-12), and gender (See Table 4-13). Means for adaptive engagement constructs for 11 year old participants were persistence 74.49 (SD = 19.5, $n = 23$), task management 76.52 (SD = 19.0, $n = 23$), and planning 67.39 (SD = 18.8, $n = 23$). Maladaptive engagement constructs for 11 year old participants were disengagement 31.96 (SD = 16.3, $n = 23$) and self-sabotage 31.88 (SD = 20.3, $n = 23$). Means for adaptive engagement constructs for 12 year old participants were persistence 74.62 (SD = 11.9, $n = 61$), task management 78.28 (SD = 14.3, $n = 61$), and planning 68.61 (SD = 17.1, $n = 61$). Maladaptive engagement constructs for 12 year old participants were disengagement 33.20 (SD = 12.3, $n = 61$) and self-sabotage 32.92 (SD = 13.6, $n = 61$). Means for adaptive engagement constructs for 13 year old participants were persistence 71.89 (SD = 14.9, $n = 81$), task management 73.83 (SD = 17.6, $n = 81$), and planning 68.09 (SD = 17.8, $n = 81$). Maladaptive engagement constructs for 13 year old participants were disengagement 36.21 (SD = 14.5, $n = 81$) and self-sabotage 38.27 (SD = 16.4, $n = 81$). Means for adaptive engagement constructs for 14 year old participants were persistence 72.68

(SD = 11.2, $n = 41$), task management 71.59 (SD = 15.9, $n = 41$), and planning 68.54 (SD = 16.6, $n = 41$). Maladaptive engagement constructs for 14 year old participants were disengagement 36.99 (SD = 13.1, $n = 41$) and self-sabotage 41.42 (SD = 15.5, $n = 41$). Means for adaptive engagement constructs for 15 year old participants were persistence 82.00 (SD = 10.3, $n = 5$), task management 81.00 (SD = 8.2, $n = 5$), and planning 71.00 (SD = 18.8, $n = 5$). Maladaptive engagement constructs for 15 year old participants were disengagement 40.00 (SD = 12.7, $n = 5$) and self-sabotage 37.00 (SD = 9.0, $n = 5$). Means for adaptive engagement constructs for 16 year old participants were persistence 60.00 ($n = 1$), task management 50.00 ($n = 1$), and planning 45.00 ($n = 1$). Maladaptive engagement constructs for 16 year old participants were disengagement 65.00 ($n = 1$) and self-sabotage 65.00 ($n = 1$).

Table 4-11. Adaptive and Maladaptive Engagement Construct Age Means

	Range		Mean	Std Deviation
	Low	High		
Age 11 ($n = 23$)				
Adaptive Construct				
Persistence	25	100	74.49	19.5
Task Management	35	100	76.52	19.0
Planning	25	100	67.39	18.8
Maladaptive Construct				
Disengagement	20	75	31.96	16.3
Self-Sabotage	20	85	31.88	20.3
Age 12 ($n = 61$)				
Adaptive Construct				
Persistence	40	100	74.62	11.9
Task Management	35	100	78.28	14.3
Planning	20	100	68.61	17.1
Maladaptive Construct				
Disengagement	20	80	33.20	12.3
Self-Sabotage	20	65	32.92	13.6

Table 4-11. Continued

	Range		Mean	Std Deviation
	Low	High		
Age 13 (<i>n</i> = 81)				
Adaptive Construct				
Persistence	30	100	71.89	14.9
Task Management	30	100	73.83	17.6
Planning	25	100	68.09	17.8
Maladaptive Construct				
Disengagement	20	85	36.21	14.5
Self-Sabotage	20	95	38.27	16.4
Age 14 (<i>n</i> = 41)				
Adaptive Construct				
Persistence	50	100	72.68	11.2
Task Management	40	100	71.59	15.9
Planning	30	100	68.54	16.6
Maladaptive Construct				
Disengagement	20	75	36.99	13.1
Self-Sabotage	20	65	41.42	15.5
Age 15 (<i>n</i> = 5)				
Adaptive Construct				
Persistence	75	100	82.00	10.3
Task Management	75	95	81.00	8.2
Planning	50	100	71.00	18.8
Maladaptive Construct				
Disengagement	20	55	40.00	12.7
Self-Sabotage	25	50	37.00	9.0
Age 16 (<i>n</i> = 1)				
Adaptive Construct				
Persistence	60	60	60	-----
Task Management	50	50	50	-----
Planning	45	45	45	-----
Maladaptive Construct				
Disengagement	65	65	65	-----
Self-Sabotage	65	65	65	-----

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Means for adaptive engagement constructs for 6th grade participants were persistence 75.94 (SD = 16.3, *n* = 53), task management 77.80 (SD = 16.8, *n* = 53), and planning 69.25 (SD = 18.7, *n* = 53). Maladaptive engagement constructs for 6th grade

participants were disengagement 34.06 (SD = 14.3, $n = 53$) and self-sabotage 34.18 (SD = 17.5, $n = 53$). Means for adaptive engagement constructs for 7th grade participants were persistence 74.42 (SD = 11.9, $n = 78$), task management 77.99 (SD = 14.7, $n = 78$), and planning 70.32 (SD = 17.2, $n = 78$). Maladaptive engagement constructs for 7th grade participants were disengagement 33.14 (SD = 13.7, $n = 78$) and self-sabotage 35.77 (SD = 17.4, $n = 78$). Means for adaptive engagement constructs for 8th grade participants were persistence 70.42 (SD = 13.9, $n = 80$), task management 70.48 (SD = 17.0, $n = 80$), and planning 66.00 (SD = 16.3, $n = 80$). Maladaptive engagement constructs for 8th grade participants were disengagement 38.44 (SD = 13.6, $n = 80$) and self-sabotage 40.10 (SD = 14.0, $n = 80$).

Table 4-12. Adaptive and Maladaptive Engagement Construct Grade Level Means

	Range		Mean	Std Deviation
	Low	High		
Grade 6 ($n = 53$)				
Adaptive Construct				
Persistence	25	100	75.94	16.3
Task Management	35	100	77.80	16.8
Planning	20	100	69.25	18.7
Maladaptive Construct				
Disengagement	20	75	34.06	14.3
Self-Sabotage	20	85	34.18	17.5
Grade 7 ($n = 78$)				
Adaptive Construct				
Persistence	45	100	74.42	11.9
Task Management	35	100	77.99	14.7
Planning	25	100	70.32	17.2
Maladaptive Construct				
Disengagement	20	85	33.14	13.7
Self-Sabotage	20	95	35.77	17.4
Grade 8 ($n = 80$)				
Adaptive Construct				
Persistence	30	100	70.42	13.9
Task Management	30	100	70.48	17.0
Planning	30	100	66.00	16.3

Table 4-12. Continued

	Range		Mean	Std Deviation
	Low	High		
Maladaptive Construct				
Disengagement	20	75	38.44	13.6
Self-Sabotage	20	70	40.10	14.0

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Means for adaptive engagement constructs for male participants were persistence 72.77 (SD = 14.0, $n = 101$), task management 73.33 (SD = 16.8, $n = 101$), and planning 67.38 (SD = 17.4, $n = 101$). Maladaptive engagement constructs for male participants were disengagement 38.12 (SD = 14.3, $n = 101$) and self-sabotage 37.49 (SD = 15.6, $n = 101$). Means for adaptive engagement constructs for female participants were persistence 73.76 (SD = 14.0, $n = 110$), task management 76.71 (SD = 16.1, $n = 110$), and planning 69.36 (SD = 17.2, $n = 110$). Maladaptive engagement constructs for female participants were disengagement 32.86 (SD = 13.2, $n = 110$) and self-sabotage 36.58 (SD = 17.0, $n = 110$).

Table 4-13. Adaptive and Maladaptive Engagement Construct Gender Means

	Range		Mean	Std Deviation
	Low	High		
Male ($n = 101$)				
Adaptive Construct				
Persistence	40	100	72.77	14.0
Task Management	35	100	73.33	16.8
Planning	20	100	67.38	17.4
Maladaptive Construct				
Disengagement	20	80	38.12	14.3
Self-Sabotage	20	75	37.49	15.6
Female ($n = 110$)				
Adaptive Construct				
Persistence	25	100	73.76	14.0
Task Management	30	100	76.71	16.1
Planning	25	100	69.36	17.2

Table 4-13. Continued

	Range		Mean	Std Deviation
	Low	High		
Maladaptive Construct				
Disengagement	20	85	32.86	13.2
Self-Sabotage	20	95	36.58	17.0

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for adaptive constructs and lower scores are considered better for maladaptive constructs (Martin, 2012).

Global mean construct scores were also calculated for adaptive and maladaptive engagement constructs (See Table 4-14). A Global Booster Engagement mean score of 72.18 (SD = 13.3, $n = 213$) was calculated using the average mean scores of adaptive engagement constructs (persistence, task management, and planning). A Global Guzzler mean score of 36.12 (SD = 13.3, $n = 213$) was calculated using the average mean scores of maladaptive engagement constructs (disengagement and self-sabotage).

Table 4-14. Adaptive and Maladaptive Global Engagement Construct Means ($n = 213$)

	Range		Mean	Std Deviation
	Low	High		
Global Booster Engagement	32	100	72.18	13.3
Global Guzzler	20	90	36.12	13.3

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

Global mean construct scores for adaptive and maladaptive engagement constructs were also calculated by age (See Table 4-5), grade level (See Table 4-16), and gender (See Table 4-17). The mean Global Booster Engagement score for 11 year old participants was 72.80 (SD = 16.0, $n = 23$) and the mean Global Guzzler was 31.92 (SD = 16.3, $n = 23$). The mean Global Booster Engagement score for 12 year old

participants was 73.83 (SD = 12.1, $n = 61$) and the mean Global Guzzler was 33.06 (SD = 11.6, $n = 61$). The mean Global Booster Engagement score for 13 year old participants was 72.27 (SD = 14.3, $n = 81$) and the mean Global Guzzler was 37.24 (SD = 13.5, $n = 81$). The mean Global Booster Engagement score for 14 year old participants was 70.93 (SD = 11.4, $n = 41$) and the mean Global Guzzler was 39.21 (SD = 11.7, $n = 41$). The mean Global Booster Engagement score for 15 year old participants was 78.00 (SD = 11.9, $n = 5$) and the mean Global Guzzler was 38.50 (SD = 10.6, $n = 5$). The mean Global Booster Engagement score for 16 year old participants was 51.67 ($n = 1$) and the mean Global Guzzler was 65.0 ($n = 1$).

Table 4-15. Adaptive and Maladaptive Global Engagement Construct Age Means

	Range		Mean	Std Deviation
	Low	High		
Age 11 ($n = 23$)				
Global Booster Engagement	40	97	72.80	16.0
Global Guzzler	20	72.5	31.92	16.3
Age 12 ($n = 61$)				
Global Booster Engagement	32	96	73.83	12.1
Global Guzzler	20	70	33.06	11.6
Age 13 ($n = 81$)				
Global Booster Engagement	35	100	72.27	14.3
Global Guzzler	20	90	37.24	13.5
Age 14 ($n = 41$)				
Global Booster Engagement	43	100	70.93	11.4
Global Guzzler	20	70	39.21	11.7
Age 15 ($n = 5$)				
Global Booster Engagement	67	98	78.00	11.9
Global Guzzler	22.5	52.5	38.50	10.6
Age 16 ($n = 1$)				
Global Booster Engagement	52	52	51.67	-----
Global Guzzler	65	65	65.00	-----

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

The mean Global Booster Engagement score for 6th grade participants was 74.33 (SD = 14.8, $n = 53$) and the mean Global Guzzler was 34.11 (SD = 14.4, $n = 53$). The mean Global Booster Engagement score for 7th grade participants was 74.25 (SD = 12.4, $n = 78$) and the mean Global Guzzler was 34.46 (SD = 13.4, $n = 78$). The mean Global Booster Engagement score for 8th grade participants was 68.97 (SD = 12.7, $n = 80$) and the mean Global Guzzler was 39.27 (SD = 11.9, $n = 80$).

Table 4-16. Adaptive and Maladaptive Global Engagement Construct Grade Level Means

	Range		Mean	Std Deviation
	Low	High		
Grade 6 ($n = 53$)				
Global Booster Engagement	32	97	74.33	14.8
Global Guzzler	20	72.5	34.11	14.4
Grade 7 ($n = 78$)				
Global Booster Engagement	35	100	74.25	12.4
Global Guzzler	20	90	34.46	13.4
Grade 8 ($n = 80$)				
Global Booster Engagement	43	100	68.97	12.7
Global Guzzler	20	70	39.27	11.9

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

The mean Global Booster Engagement score for male participants was 71.16 (SD = 13.4, $n = 101$) and the mean Global Guzzler was 37.80 (SD = 13.2, $n = 101$). The mean Global Booster Engagement score for female participants was 73.28 (SD = 13.3, $n = 110$) and the mean Global Guzzler was 34.72 (SD = 13.2, $n = 110$).

Table 4-17. Adaptive and Maladaptive Global Engagement Construct Gender Means

	Range		Mean	Std Deviation
	Low	High		
Males ($n = 101$)				
Global Booster Engagement	32	100	71.16	13.4
Global Guzzler	20	72.5	37.80	13.2

Table 4-17. Continued

	Range		Mean	Std Deviation
	Low	High		
Female ($n = 101$)				
Global Booster Engagement	35	100	73.28	13.3
Global Guzzler	20	90	34.72	13.2

Note. Scores are based on an average of 100 for junior school students. Higher scores are considered better for global booster thought and global booster engagement scores, and lower scores are considered better for global muffler and global guzzler scores (Martin, 2012).

Objective Three

Objective 3 was to examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level) and their perceptions of motivation to learn and engagement in learning. To accomplish this objective Pearson's Product Moment Correlations (Pearson R) were calculated between variables with continuous data and point biserial correlations were calculated for dichotomous data. The terminology presented by Davis (1971) was used to describe the magnitude of the associations among variables. A correlation of zero denotes no association between variables, whereas, a correlation of 1.00 denotes a perfect relationship (Davis, 1971). Accordingly, correlations which fall in the range of .01 to .09 are considered to be negligible, .10 to .29 to be low, .30 to .49 to be moderate, .50 to .69 to be substantial, and .70 to .99 to be very high (Davis, 1971).

Correlations were computed between global mean construct scores for adaptive/maladaptive motivation/engagement constructs and age, grade level, and gender. The matrixes of correlations are shown in Table 4-18 and Table 4-19.

A low negative association was found between grade level and mean global booster thought scores ($r = -.11$) (the average of self-belief, valuing, and learning focus constructs). Students in higher grades tended to report slightly lower levels of booster

thoughts. Low positive association was found between grade level and mean global guzzler scores ($r = .15$) (the average self-sabotage and disengagement constructs). Students in higher grades tended to report slightly higher levels of guzzler engagement. Low positive associations were found between age and mean global guzzler scores ($r = .17$) and mean global muffler scores ($r = .14$) (the average of anxiety, failure avoidance, and uncertain control constructs). Older students tended to report slightly higher levels of guzzler engagement and higher levels of muffler thoughts. A low negative association was found between gender and mean global guzzler scores ($r = -.12$), and a low positive association was found between gender and mean global muffler scores ($r = .14$). Males tended to report slightly higher levels of guzzler engagement, while females tended to report slightly higher levels of muffler thoughts. All other associations between mean global construct scores and age, grade level, and gender were found to be negligible.

Investigating individual constructs which comprise global scores (Table 4-20, Table 4-21), low negative associations were found between grade level and adaptive motivation constructs self-belief ($r = -.11$), valuing ($r = -.10$), and maladaptive motivation construct uncertain control ($r = -.10$). Students in higher grade levels tended to report slightly lower self-belief, uncertain control, and valuing. Low negative associations were also found between grade level and adaptive engagement constructs persistence ($r = -.12$) and task management ($r = -.11$). Students in higher grade levels tended to report slightly lower levels of task management and persistence. Low positive associations were found between grade level and maladaptive engagement constructs disengagement ($r = .12$) and self-sabotage ($r = .14$). Students in higher grade levels

tended to report slightly higher levels of self-sabotage and disengagement. All other associations between grade level and adaptive/maladaptive motivation and engagement constructs were found to be negligible.

Low positive associations were found between age and maladaptive motivational construct uncertain control ($r = .14$) and maladaptive engagement construct self-sabotage ($r = .19$). Older students tended to report slightly higher levels of self-sabotage and uncertain control. All other associations between age and adaptive/maladaptive motivation and engagement constructs were found to be negligible.

Low positive associations were found between gender and adaptive motivational construct learning focus ($r = .11$) and maladaptive motivational construct anxiety ($r = .27$). Females tended to report slightly higher levels of anxiety and learning focus. A low negative association was found between gender and maladaptive engagement construct disengagement ($r = -.19$). Males tended to report slightly higher levels of disengagement. All other associations between gender and adaptive/maladaptive motivation and engagement constructs were found to be negligible.

Table 4-18. Correlations Among Global Motivation/Engagement Mean Construct Scores and Age/Grade Level ($n = 213$)

		Grade	Age	Global Booster Thought	Global Booster Engagement	Global Muffler	Global Guzzler
Grade	Pearson Correlation	-----		-.11	-.08	-.03	.15
Age	Pearson Correlation		-----	.05	-.00	.14	.17

Table 4-19. Correlations Among Global Motivation/Engagement Mean Construct Scores and Gender ($n = 213$)

		Gender	Global Booster Thought	Global Booster Engagement	Global Muffler	Global Guzzler
Gender	Pearson Correlation	-----	.08	.05	.14	-.12

Table 4-20. Correlations Among Adaptive/Maladaptive Motivation/Engagement Mean Construct Scores and Age/Grade Level ($n = 213$)

		Grade	Age	Self-Belief	Persistence	Learning Focus	Valuing	Task Management	Planning	Disengagement	Self-Sabotage	Uncertain Control	Failure Avoidance	Anxiety
Grade	Pearson Correlation	--	--	-.11	-.12	-.07	-.10	-.11	.01	.12	.14	-.10	.02	-.00
Age	Pearson Correlation		--	.02	.00	.02	.08	-.02	.00	.09	.19	.14	.08	.09

Table 4-21. Correlations Among Adaptive/Maladaptive Motivation/Engagement Mean Construct Scores and Gender ($n = 213$)

		Gender	Self-Belief	Persistence	Learning Focus	Valuing	Task Management	Planning	Disengagement	Self-Sabotage	Uncertain Control	Failure Avoidance	Anxiety
Gender	Pearson Correlation	--	.02	.03	.11	.07	.08	.02	-.19	-.04	.04	.02	.27

Summary

The findings of this study were presented in Chapter 4 organized around the objectives of this research. The objectives of the study were to: (a) identify self-reported perceptions of motivation to learn in middle school agricultural education students, (b) identify self-reported perceptions of engagement in learning in middle school agricultural education students, and (c) examine the relationship between demographic variables (age, gender, and grade level) and the self-reported perceptions of motivation to learn and engagement in learning in middle school agricultural education students. The findings presented in Chapter 4 will be described in greater detail in Chapter 5 in addition to conclusions, recommendations, and implications being presented.

CHAPTER 5 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to ascertain middle school agricultural education students' self reported perceptions of motivation and engagement in learning. The independent variables for this study were gender, age, and grade level. The dependent variables in this study were students' self-perceptions of motivation and engagement in learning.

Objectives

The specific objectives of this study were to:

- 1) Identify middle school agricultural education students' self-reported perceptions of motivation to learn,
- 2) Identify middle school agricultural education students' self-reported perceptions of engagement in learning,
- 3) Examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level), and their perceptions of motivation to learn and engagement in learning.

Summary of Findings and Conclusions

The findings of this study are organized by a description of the population followed by a summary of findings by objective.

Description of Population

Students of the six agricultural educators who agreed to participate in this study were used as the accepted population of this study. Students were enrolled in middle school agricultural education courses in six counties in North Florida and completed the instrument between December 2012 and January 2013. The majority of the students were female (51.6%), and a large portion of students were 13 years old (38.0%) and in the 8th grade (37.6%).

Objective One

The aim of objective one was to identify self-reported perceptions of motivation to learn in middle school agricultural education students. Martin (2012) indicated that higher scores on adaptive motivational thoughts (self-belief, valuing, and learning focus) were considered better than lower scores.

Middle school agricultural education students in this study tended to report higher global booster thoughts (self-belief, valuing, and learning focus) than booster engagement behaviors. Specifically, 12 year old 6th grade girls in the study tended to report the highest levels of global booster thoughts. Examining the individual constructs which comprise global booster thoughts it was concluded that when reporting their self-perceptions of motivation to learn the students in this study tended to report higher scores in the construct learning focus and reported the lowest scores in the construct valuing. Based on the findings it was concluded that students in this study reported higher scores in self-belief than learning focus at 12 years of age, and tended to report the lowest scores of self-belief at 14 years old. Additionally, male students in the study tended to report higher scores in the construct self-belief than learning focus. The 6th grade students in this study tended to report the highest scores of valuing, and 7th grade students in this study tended to report the highest scores of self-belief and learning focus. Female students in this study tended to report higher scores of self-belief, valuing, and learning focus than males.

Additionally, Martin (2012) indicated that lower scores on maladaptive motivational thoughts (uncertain control, failure avoidance, and anxiety) were considered better than higher scores. Middle school agricultural education students in this study tended to report higher global muffler thoughts (anxiety, failure avoidance, and uncertain control)

than guzzler engagement behaviors. Particularly, 14 year old 7th grade females in this study tended to report the highest muffler thoughts.

Investigating individual constructs that encompass global muffler thoughts, it was concluded that when reporting self-perceptions of motivation to learn the students in this study tended to report the highest scores in anxiety and the lowest scores in uncertain control. It was also concluded that female students in this study tended to report higher scores of anxiety, uncertain control, and failure avoidance than males. Middle school agricultural students in this study tended to report the highest scores of anxiety at 14 years old. Additionally, 14 year old 7th grade students in this study tended to report the highest levels of failure avoidance, and 11 year old 6th grade students in this study tended to report the highest levels of uncertain control.

In summary, based on the findings of this study, the following conclusions were drawn.

- 1) Middle school agricultural education students in this study tended to report higher adaptive motivational thoughts than adaptive engagement behaviors, and tended to report higher maladaptive motivational thoughts than maladaptive engagement behaviors. More specifically, 12 year old 6th grade females in the study tended to report the highest motivational thoughts, and 14 year old and 7th grade students in the study tended to report the highest scores of maladaptive motivational thoughts.
- 2) Within the individual constructs of adaptive motivational thoughts, students in this study tended to report higher scores in the construct learning focus and the lowest scores in the construct valuing. Specifically, female students in the study tended to report higher scores in self-belief, valuing, and learning focus than male students. Furthermore, the highest levels of self-belief and learning focus were seen in 7th grade students within the study. However, the levels of self-belief were higher than learning focus at 12 and 14 years old in this study, and valuing was most important for sixth grade students of the study.
- 3) Within the individual constructs of maladaptive motivational thoughts, students in this study tended to report the highest scores in the construct anxiety and the lowest scores in the construct uncertain control. More specifically, female students in the study tended to report higher maladaptive motivational thoughts than males. Students in the study tended to report the highest levels of anxiety at 14 years old.

Furthermore, 7th grade and 14 year old students in the study tended to report the highest levels of failure avoidance, and 11 year old 6th grade students in the study tended to report the highest levels of uncertain control.

Objective Two

The aim of objective two was to identify self-reported perceptions of engagement in middle school agricultural education students. Martin (2012) indicated that higher scores on adaptive engagement behaviors (persistence, task management, and planning) were considered better than lower scores.

Middle school agricultural education students in this study tended to report lower global booster engagement behaviors (persistence, task management, and planning) than global booster thoughts. Particularly, 12 year old 6th grade females in this study tended to report the highest global booster engagement behaviors. Separating the constructs which comprise global booster engagement behaviors it was concluded that middle school agricultural education students in this study tended to report higher scores in the construct task management and the lowest scores in the construct planning. However, 14 year old students in this study tended to report higher levels of persistence than task management. Moreover, 7th grade students in this study tended to report the highest levels of task management and planning, while 6th grade students in this study tended to report the highest levels of persistence.

Additionally, Martin (2012) noted that lower scores on maladaptive engagement behaviors (disengagement and self-sabotage) were considered better than higher scores. Middle school agricultural education students within this study tended to report lower global guzzler engagement behaviors (self-sabotage and disengagement) than muffler thoughts. In particular, 14 year old 8th grade males within this study tended to report the highest global guzzler engagement behaviors.

Distinguishing between the constructs of global guzzler behaviors, middle school agricultural education students in this study tended to report higher levels of self-sabotage than disengagement. Specifically, 14 year old 8th grade males in the study tended to report the highest levels of self-sabotage. However, 11 and 12 year old students in the study tended to report higher levels of disengagement than self-sabotage.

In summary, based on the findings of this study, the following conclusions were drawn.

- 1) Middle school agricultural education students in this study tended to report lower scores of adaptive engagement behaviors than adaptive motivational thoughts, and tended to report higher scores of maladaptive engagement behaviors than maladaptive motivational thoughts. More specifically, 12 year old 6th grade females in the study tended to report higher levels of adaptive engagement behaviors, and 14 year old 8th grade students in the study tended to report higher levels of maladaptive engagement behaviors.
- 2) Within the constructs of adaptive engagement behaviors middle school agricultural education students in this study tended to report higher scores in the construct task management and the lowest scores in the construct planning. The highest levels of task management and planning were seen in 7th grade students in the study, while the highest levels of persistence were seen in 6th grade students in the study.
- 3) Within the constructs of maladaptive engagement behaviors middle school agricultural education students in the study tended to report higher levels of self-sabotage than disengagement. The highest levels of self-sabotage were seen in 14 year old 8th grade males in the study. However, disengagement levels were higher than levels of self-sabotage for 11 and 12 year old students in the study.

Objective Three

The aim of objective three was to examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level) and their perceptions of motivation to learn and engagement in learning.

Findings showed that middle school agricultural education students in higher grade levels in this study tended to report slightly lower global booster thoughts (self-belief, valuing, and learning focus) and slightly higher levels of global guzzler engagement behaviors (self-sabotage and disengagement). Older students within the study tended to report slightly higher levels of global guzzler engagement behaviors and slightly higher muffler thoughts (anxiety, failure avoidance, and uncertain control). Males in the study tended to report slightly higher global guzzler engagement behaviors while females tended to report slightly higher muffler thoughts.

In particular, the students in higher grade levels within this study tended to report slightly lower levels of self-belief, uncertain control, task management, valuing, and persistence. Additionally, students in higher grade levels within the study tended to report slightly higher levels of self-sabotage and disengagement. Older students in the study tended to report slightly higher levels of self-sabotage and uncertain control. Female students in the study tended to report slightly higher levels of anxiety and learning focus, and males within the study tended to report slightly higher levels of disengagement.

In summary, based on the participants in this study, the following conclusions were drawn.

- 1) Middle school agricultural education students in higher grade levels within this study tended to report slightly decreased levels of global booster thoughts and slightly increased levels of global guzzler engagement behaviors. Specifically, students in higher grade levels in the study reported slightly decreased levels of self-belief, uncertain control, task management, valuing, and persistence, and slightly increased levels of self-sabotage and disengagement.
- 2) Older middle school agricultural education students in the study tended to report slightly increased levels of global guzzler engagement behaviors and global muffler thoughts. Specifically, older students in the study tended to report slightly increased levels of self-sabotage and uncertain control.

- 3) Male middle school agricultural education in this study tended to report slightly higher levels of global guzzler behaviors, and females in the study tended to report slightly higher levels of global muffler thoughts. More specifically, female agricultural education students in this study tended to report slightly higher levels of anxiety and learning focus, while males within the study tended to report slightly higher levels of disengagement.

Discussion and Implications

Objective One-Identify middle school agricultural education students' self-reported perceptions of motivation to learn.

Conclusion 1: Middle school agricultural education students in this study tended to report higher adaptive motivational thoughts than adaptive engagement behaviors, and tended to report higher maladaptive motivational thoughts than maladaptive engagement behaviors. More specifically, 12 year old 6th grade females in the study tended to report the highest motivational thoughts, and 14 year old and 7th grade students in the study tended to report the highest scores of maladaptive motivational thoughts.

The expectation of the researcher was that participants in this study would report fairly high amounts of motivation to learn due to nature of self-reporting data collection. Additionally, earliest theories of motivation states that people are inherently determined to uphold an optimal level of excitement because it is physiologically pleasing (McLaughlin et al., 2005). It can also be assumed that the high levels of motivation to learn can be accredited to the combination of the classroom, SAE, and FFA activities which make up an agricultural education program. According to Hughes and Barrick (1993), FFA activities and SAEs serve as reinforcement tools and motivation by recognizing students for exemplary performance.

Ryan and Patrick (2001) noted that young adolescence marks the beginning in a downward movement in academics. The 6th grade is the first grade to enter middle

school. It can be assumed that motivation to learn is at its peak during this stage because students are excited to be entering new school and classroom environments. Additionally, it can be assumed that the peak of motivation occurs at 12 years of age because between 11 and 12 years of age students began to face emotional and cognitive challenges that are associated with the transition between Piaget's concrete operational intelligence and formal operational intelligence (Fisher, 2005; Salkind, 2008). The reporting of girls having more adaptive motivational thoughts are consistent with the literature which states that females are more motivated and engaged in academics (Marks, 2000). Additionally, Ryan and Patrick (2001) also noted that middle school aged children start to become uncertain in their abilities to succeed in school. This is consistent with the findings of this study that 14 year old and 7th grade students tended to report the highest levels of maladaptive motivational thoughts. After 6th grade students begin the biological changes and transitions between Piaget's cognitive stages, and students begin to become uncertain in their abilities to succeed in school.

Conclusion 2: Within the individual constructs of adaptive motivational thoughts, students in this study tended to report higher scores in the construct learning focus and the lowest scores in the construct valuing. Specifically, female students in the study tended to report higher scores in self-belief, valuing, and learning focus than male students. Furthermore, the highest levels of self-belief and learning focus were seen in 7th grade students within the study. However, the levels of self-belief were higher than learning focus at 12 and 14 years old in this study, and valuing was most important for sixth grade students of the study.

The conclusion was drawn that participants tended to report higher levels of learning focus. Learning focus refers to a student's tendency to feel successful and gain satisfaction in mastering what they have set out to do (Martin, 2012). These findings are consistent with self-determination theory claims of competence, in which humans have a need to control desired outcomes and feel successful in bringing the desired outcomes to life (Dolezel, 2011).

Additionally, the conclusion was drawn that students within the study tended to report lower scores in the motivational construct of valuing. Value refers to the motives and enticements students view for participating in learning, interesting in activities, importance of the activity to the individual and apparent worth of the activity (Wigfield & Wentzel, 2007). Valuing can be considered the cause for students' want to complete learning tasks (McLaughlin et al., 2005). These findings were consistent with Ryan and Patrick's (2001) argument that in young adolescence children become uncertain in their abilities to succeed in school and begin to question the value of completing school work.

The notation that students in this study tended to report lower levels of valuing is important in addressing the high school dropout crisis facing the U.S. school system. Recommendations to the educators who participated in this study will include ways to increase their students' value of schoolwork as a method of intervention to address the high school dropout crisis. As Fredricks et al. (2004) noted, students' low achievement levels have been attributed to low student motivation and engagement in learning, and low achievement levels lead to eventual student dropout behavior.

Conclusion 3: Within the individual constructs of maladaptive motivational thoughts, students in this study tended to report the highest scores in the construct

anxiety and the lowest scores in the construct uncertain control. More specifically, female students in the study tended to report higher maladaptive motivational thoughts than males. Students in the study tended to report the highest levels of anxiety at 14 years old. Furthermore, 7th grade and 14 year old students in the study tended to report the highest levels of failure avoidance, and 11 year old 6th grade students in the study tended to report the highest levels of uncertain control

It was also concluded the middle school agricultural education students in this study tended to report high levels of anxiety. According to need achievement and self-worth motivation theory the students in this study could be classified as failure-avoidant students. Failure-avoidant students tend to be anxious and are motivated by fear of failure, often live in self-doubt, and are uncertain about their ability to avoid failure and achieve success (Martin, 2012). The assumption could be made that middle school students within this study are prone to suffering from anxiety because they are entering Erikson's identity vs. role confusions stage in which students are expected to develop their own identity and definition of self through defining an interest in career choices, furthering education, and trade skills (Lee, 2005). According to Martin (2012) failure avoidant students may actively self-sabotage or handicap their chances of success due to their anxiety.

The conclusion that females within the study tended to report higher levels of maladaptive motivational thoughts is consistent with Marks' (2000) notation that females are consistently more engaged in academics than males. It can be assumed that if females are more prone to being successful in school their levels of anxiety, failure

avoidance, and uncertain control are going to increase due to their desire to be successful.

The assumption can be made that 14 year olds tended to report the highest levels of anxiety in this study due to the approaching transition from middle school to high school. The anxiety of an approaching transition between schools can lead to uncertainties about their abilities to be successful, which can be linked to the conclusion that 14 year old students in this study tended to report the highest level of failure avoidance.

Additionally, it was concluded that seventh grade students within the study tended to report high levels of failure avoidance. The assumption can be made that seventh grade students tend to report higher levels of failure avoidance due to their uncertainty in their abilities to be successful in school, which can be attributed to the cognitive changes occurring as they transition between Piaget's biological stages of cognitive development.

Finally, the conclusion that 11 year old 6th grade students within this study tended to report the highest levels of uncertain control can be attributed to the challenges of adjusting to new school and classroom environments.

Identifying student's self-perceptions of high levels of anxiety is another essential component in addressing the high school dropout crisis in the US. Recommendations to educators who participated in this study will include methods to reduce anxiety within their classroom as a means of intervention to the high school dropout crisis. Providing these educators with the ability to reduce their students' anxiety levels can help to increase their students' motivation and engagement, and in turn begin to address low

levels of student achievement within their schools which can lead to student dropout behavior.

Objective Two-Identify middle school agricultural education students' self-reported perceptions of engagement in learning.

Conclusion 1: Middle school agricultural education students in this study tended to report lower scores of adaptive engagement behaviors than adaptive motivational thoughts, and tended to report higher scores of maladaptive engagement behaviors than maladaptive motivational thoughts. More specifically, 12 year old 6th grade females in the study tended to report higher levels of adaptive engagement behaviors, and 14 year old 8th grade students within the study tended to report higher levels of maladaptive engagement behaviors.

The expectations of the researcher were that participants would report lower adaptive/maladaptive behaviors due to the nature of self-reporting data collection. Due to human nature students are going to naturally be inclined to have higher motivational thoughts (McLaughlin et al., 2005). However, student's abilities to have adaptive engagement behaviors (planning, task management, persistence) stem from facilitations and reinforcements from adult figures. Additionally, the lack of having adaptive engagement behaviors for the students in this study led way to being more affected by maladaptive motivational thoughts (anxiety, uncertain control, and failure avoidance) than engagement behaviors (self-sabotage and disengagement). This is consistent with the conclusions that the middle school agricultural education students in this study tended to report lower adaptive engagement behaviors and lower maladaptive engagement behaviors than maladaptive motivational thoughts.

The conclusions that 12 year old 6th grade female students in this study tended to report higher levels of adaptive engagement behaviors are consistent with Marks (2000) in that females are more academically engaged with boys, and the conclusions from objective one in that 6th grade is the first grade of middle school in which students have not yet begun to face the emotional and cognitive challenges associated with biological transitions. Finally, the conclusion in that 14 year old 8th grade students in this study tended to report higher levels of maladaptive engagement behaviors is consistent with Marks (2000) in that student's engagement levels decrease as grade levels increase and Martin (2007) in that students' self-perception of competence and subjective value decline as children grow older.

Conclusion 2: Within the constructs of adaptive engagement behaviors middle school agricultural education students in this study tended to report higher scores in the construct task management and the lowest scores in the construct planning. The highest levels of task management and planning were seen in 7th grade students in the study, while the highest levels of persistence were seen in 6th grade students in the study.

The conclusion was drawn that when self-reporting engagement in learning, students in this study tended to report higher scores in the construct task management. These findings are consent with students reporting high scores in learning focus as both constructs are a component of self-determination theory and humans have a need to control their desired outcomes in order to feel successful (Dolezel, 2011). It can be assumed that the highest levels of task management were reported by 7th grade

students in this study because these studies are more adjusted to transitions in schooling and teacher expectations that 6th grade students.

Additionally, the conclusion was drawn that students in this study tended to report the lowest scores in the adaptive engagement construct of planning. While this construct is also a component of self-determination theory the assumption can be made that student's ability to plan could be linked to the conclusion that students tended to report the lowest scores in self-sabotage.

The assumption can be made that the highest reported levels of planning were seen in 7th grade students in this study because 7th grade aged students are typically beginning to enter Erikson's identify vs. role confusion stage in which students begin to mark their identity by describing interest in career choices and further education.

Finally, the assumption can be made that the highest level of persistence were seen in 6th grade students within this study because 6th grade marks the beginning of middle school. While 6th grade students in the study tended to report the highest levels of adaptive motivational thoughts, typically 6th grade students are faced with the struggles of transitioning to new school and classroom environments, thus increasing their levels of persistence.

Identifying student's self-perceptions of low levels of planning is another essential component in addressing the high school dropout crisis in the US. Recommendations to educators who participated in this study will include methods to increase planning for their students as a means of intervention to the high school dropout crisis. Providing those educators who participated in this study with the ability to assist their students in increasing their levels of planning will help to increase their students' engagement levels

within the classroom, and in turn begin to address low levels of student achievement which can lead to student dropout behavior.

Conclusion 3: Within the constructs of maladaptive engagement behaviors middle school agricultural education students in the study tended to report higher levels of self-sabotage than disengagement. The highest levels of self-sabotage were seen in 14 year old 8th grade males in the study. However, disengagement levels were higher than levels of self-sabotage for 11 and 12 year old students in the study.

According to Martin (2012) failure-avoidant students can actively sabotage their chances of success (ie. procrastinating or lack of planning) in order to provide an excuse for their lack of performance. This excuse is used as a protective measure for students' to attribute their poor performance to their lack of planning rather than a possible lack of ability (Martin, 2012). This stems from conclusions drawn in objective one that the middle school agricultural education students in this study reported high levels of anxiety. Their anxiety increases their levels of uncertain control, and in order to become failure avoidant students begin to self-sabotage themselves in order to protect their egos. The conclusions that the highest level of self-sabotage were seen in 14 year old males within this study is consistent with the findings of this study that older students, particularly male students, tended to report the highest levels of anxiety and failure avoidance.

Identifying student's self-perceptions of high levels of self-sabotage is another essential component in addressing the high school dropout crisis in the US. Recommendations to educators that participated in this study will include methods to decreasing the tendency for students to self-sabotage as a means of intervention to the

high school dropout crisis. Providing the educators who participated in this study with the ability to assist students in decreasing their students' need to self-sabotage will help increase their students' engagement, and in turn begin to address low levels of student achievement which can lead to student dropout behavior within their school.

Objective Three-Examine the relationships between middle school agricultural education students' demographic characteristics (age, gender, and grade level), and their perceptions of motivation to learn and engagement in learning.

Conclusion 1: Middle school agricultural education students in higher grade levels in this study tended to report slightly decreased levels of global booster thoughts and slightly increased levels of global guzzler engagement behaviors. Specifically, students in higher grade levels in the study reported slightly decreased levels of self-belief, uncertain control, task management, valuing, and persistence, and slightly increased levels of self-sabotage and disengagement.

The expectations of the researcher were that as grade level increased motivation and engagement would decrease. The conclusion was drawn that students in higher grade levels within this study tended to report slightly lower levels of self-belief, uncertain control, task management, valuing, and persistence. These findings are consistent with Marks' (2000) findings that engagement in academic work decreases as grade level increases. The assumption can be made that this is due to the increase changes in domain-specific task values in higher grade levels (Martin, 2007).

Students in higher grade levels in this study also tended to report slightly higher levels of self-sabotage and disengagement. According to Martin (2012) students can result to self-sabotaging themselves and becoming disengaged due to their anxiety to be successful. The assumption can be made that as students progress into higher grade levels they are more prone to self-sabotage and disengagement due to the

transition between Piaget's stages of concrete operational intelligence and formal operational intelligence (Fisher, 2005; Salkind, 2008). Additionally, it can be assumed that students may become disengaged due to the lack of understanding content. These assumptions and conclusions are consistent with the conclusion that older students within this study tended to report slightly higher levels of self-sabotage and uncertain control as older students are typically found in higher grade levels and biologically are undergoing the transformation between cognitive stages.

The relationships identified in the results of this study also provide key insights in addressing the high school dropout crisis facing the US. Recommendations on ways to address the constructs in which students identified least with will be made to those educators who participated in this study. The low relationship identified in this objective is important to note to those agricultural educators who participated in this study. This relationship demonstrates to those educators that there is a need to focus on improving self-belief, uncertain control, task management, valuing, and persistence for students in higher grade levels within their classrooms in order to decrease those students' levels of self-sabotage and disengagement. Focusing on their higher grade level students in these construct areas can help improve student motivation and engagement in learning within those educators' classrooms that participated in this study, and in turn help to lower the rate of student dropouts within those schools.

Conclusion 2: Older middle school agricultural education students in the study tended to report slightly increased levels of global guzzler engagement behaviors and global muffler thoughts. Specifically, older students with the study tended to report slightly increased levels of self-sabotage and uncertain control.

The expectations of the researcher were that as age increased motivation and engagement would decrease. These findings are consistent with Martins' (2009) findings that upper elementary students (ages 9-11.5) reflect higher levels of motivation and Jang's (2008) findings that there is a decline in motivation between elementary and middle school.

Older students in this study also tended to report slightly higher levels of self-sabotage and uncertain control. According to Martin (2012) students can result to self-sabotaging themselves and becoming disengaged due to their anxiety to be successful. Students who are transitioning through this cognitive developmental stage may have yet to develop the cognitive structures of understanding (Salkind, 2008) and therefore are suffer from self-sabotaging their school work in order to protect themselves from feeling a lack of intelligence.

The relationships identified in the results of this study also provide key insights in addressing the high school dropout crisis facing the US. Recommendations on ways to address the constructs in which students identified least with will be made to those educators who participated in this study. The low relationship identified in this objective is important to note to the educators that participated in this study. This relationship demonstrates to those educators that there is a need to focus on improving self-sabotage and uncertain control for older students within their classrooms. Focusing on the older middle school students within their classrooms for these construct areas can help improve student motivation and engagement in learning in the agricultural education programs which participated in this study, and in turn help to lower the rate of student dropouts within those schools.

Conclusion 3: Male middle school agricultural education in this study tended to report slightly higher levels of global guzzler behaviors, and females in the study tended to report slightly higher levels of global muffler thoughts. More specifically, female agricultural education students in this study tended to report slightly higher levels of anxiety and learning focus, while males within the study tended to report slightly higher levels of disengagement.

In regards to their self-perceptions of motivation and engagement in learning, males within this study tended to report slightly higher levels of disengagement in this study. These findings are consistent with Marks' (2000) findings that boys have been noted to consistently be less engaged in academics than females. The assumption can be made that boy's higher levels of disengagement can be due to their negativity toward school, view of homework as less useful, and unwillingness to ask for help or complete extra school work (Martin, 2007).

Additionally, in regards to their self-perceptions of motivation and engagement in learning, females within this study tended to report slightly higher levels of anxiety and learning focus. These findings are consistent with Martin's (2007) findings that females are higher achieving than males and more females were noted to complete school than males since 1976. The assumption can be made that females' higher levels of anxiety could be due to their need to perform better in school than males.

The relationships identified in the results of this study provide key insights in addressing the high school dropout crisis facing the US. Recommendations on ways to address the constructs in which students identified with least will be made to those educators who participated in this study. The low relationship identified in this objective

is important to note to those educators. The relationship found in this study demonstrates to the educators who participated in this study that there is a need to focus on decreasing disengagement levels for males, and decreasing anxiety levels for females. Focusing on these construct areas within males and females can help improve student motivation and engagement in learning for the students within this study, and in turn could help to lower the rate of student dropouts within those schools which participated in this study.

Recommendation for Practitioners

Based on the findings of this study, the following recommendations were made for the educators who participated in this study:

- 1) Students in this study tended to report lower levels of valuing. The following examples are methods for the educators who participated in this study to improve their students' value in their schoolwork.
 - a. Educators should make connections between curriculum and world events (Martin, 2012). For instance, providing students with the opportunity to work with genuine problems or community-based problems allows students to see how their school work is relevant in their lives, such as incorporating research on a drought affecting the community into an environmental unit.
 - b. Educators should also make connections to curriculum being taught in other subjects (Martin, 2012). Connecting curriculum taught in their agricultural education classes to math, science, and reading concepts demonstrates to students the consecutiveness of all subjects taught within a school environment. Educators who participated in this study should work on teams with other subject area teachers to accomplish this recommendation. For example, the water cycle being taught in a science course could be related to a horticulture, environmental, and/or soil science unit being taught in the agricultural classroom.
 - c. Educators should also encourage students to think critically and analyze ways curriculum can be helpful in their individual lives (Martin, 2012). Encouraging students to think critically and analyze ways curriculum is relevant to their individual lives provides students the connection of lessons learned in the classroom to their social and personal lives, which can be transferred later into their careers. Educators can provide

opportunities for critical thinking and analyzing by developing activities which allow students to explore lesson concepts in their lives. For example, providing an activity which requires students to track their families' eating habits during a food science unit would provide opportunities for critical thinking and analyzing food science concepts in students' daily lives.

- d. Educators should serve as role models by showing value towards curriculum being taught (Martin, 2012). It is important for the educators in this study to show enthusiasm in their teaching. Demonstrating their own value towards the curriculum helps display the importance of curriculum to students.

These recommendations can aid the educators who participated in this study in increasing their students' value towards their schoolwork as valuing has been described as the extent to which students believe what they learn in school is useful and relevant to them (Martin, 2012).

- 2) Students in this study tended to report high levels of anxiety. The following are recommendations to educators who participated in this study to help reduce anxiety within their classrooms.
 - a. To reduce anxiety educators in this study should reduce uncertainty in the classroom by communicating clear expectations and objectives (Martin, 2012). When educators communicate to their students their expectations for behavior and in academics students levels of anxiety are lowered. Educators who participated in this study can communicate clear expectations by first reviewing expectations at the beginning of the school year, and then educators should strive to be consistent with these expectations throughout the school year. Educators can also be clear about expectations and objectives by providing rubrics for class assignments and projects. Additionally, educators should display their expectations within the classroom and should display daily objectives and schedules in a visible area for students.
 - b. Educators can also help students reduce anxiety leading up to assessments by teaching review techniques and clearly explaining material to be covered on the test (Martin, 2012). Today students are faced with an abundance of testing, and each teacher a student encounters may have a different testing styles. The educators in this study should teach their students ways to review for their tests, whether that is using vocabulary flash cards, or outlining techniques for notes or chapters in the text book. In addition to review techniques, educators should clearly explain which material will be covered on assessments, for example providing reviews in class and study guides that include important concepts which will be included on assessments.

- c. Educators can also teach students how to recognize the signs of anxiety (Martin, 2012). Helping students recognize the feelings of nervousness, feeling sick to their stomachs, and racing heart beats are signs of anxiety can help students to learn ways to relax, for instance, teaching students to practice deep breathing or focusing on answering the question rather than thinking about if they will fail (Martin, 2012).

These recommendations for educators who participated in this study can help in reducing student anxiety within the classroom as anxiety has been described as a twofold construct in which students suffer from feeling nervous and worrying (Martin, 2012).

- 3) Students in this study tended to report lower levels of planning. The following are recommendations to educators who participated in this study to help increase students' planning.
 - a. To improve student planning educators should ensure students have clear understandings of expectations on assignments and tests (Martin, 2012). Providing students with clear expectations on assignments and tests will enable students the ability to plan their work on assignments and study habits for tests. Educators in this study can provide clear expectations on assignments by providing example work and a grading rubric to students, and clear expectations on tests can be provided through reviews and study guides/packets. Educators can also help students plan for assignments and test by clearly explaining to students the meaning of key words that will be included in directions, such as compare, analyze, summarize, and discuss (Martin, 2012).
 - b. Educators can also help students plan by demonstrating how to check student progress and develop strategies for checking work as it is completed (Martin, 2012). Educators in this study can show students how to check electronic grade books (for schools which provide these) to check their grades and missing assignments. Educators can also provide specific procedures for students to check for missed work when absent. Finally, educators in this study can teach students strategies to check the progress of their work as it is completed through demonstrating how to ask clarifying questions and how to check work using notes and chapters in the textbook.
 - c. Educators can demonstrate better planning by showing how to break school work into components by outlining and thinking about assignments (Martin, 2012). When assigning extended projects or projects which contain a great deal of detail, educators can provide multiple checks during the duration of the project to demonstrate to students how to break apart the assignment and complete their work in portions.

- d. Educators can show students how to use time more effectively by prioritizing work (Martin, 2012). Educators in this study can demonstrate to students how to record due dates in their student planner. This will help students visualize when assignments are due and prioritize those which are most pressing to be completed first.

These recommendations to the educators who participated in this study will help students within their classroom develop planning skills as planning refers to how much students plan their assignments and homework and how much they keep track of progress in school work (Martin, 2012).

- 4) Students in this study tended to report high levels of self-sabotage. The following are recommendations to educators who participated in this study to help reduce their students' need to self-sabotage.
 - a. To reduce self-sabotage educators should make it clear to students that their worth is not determined by their grades but rather their effort (Martin, 2012). It is important for educators to teach the notation of hard work and effort. This will help students to understand that their hard work and effort has more value than their actual grade.
 - b. Educators can also show students their mistakes and ways to improve them (Martin, 2012). Educators in this study should dictate the message to their students that mistakes show students where they went wrong and helps to point out areas in which students need to improve upon (Martin, 2012). Educators should demonstrate to students to be optimistic, and that mistakes are actual "launch pads" to success (Martin, 2012, p.69).
 - c. Educators can also have students reflect on times they have self-sabotaged (Martin, 2012). Educators can help students reflect on times in which they have self-sabotaged by asking students to make lists of subjects in which they have self-sabotaged, and to have them think about how they feel about those subject areas. This will enable educators to pin point the underlying reasons for their self-sabotage, whether that be actual learning focus, anxiety, uncertain control, failure avoidance, etc. (Martin, 2012).

These recommendations will aid the teachers in this study in reducing their students' need to self-sabotage as self-sabotage is when students do things to reduce their success in school like putting off assignments or wasting time (Martin, 2012).

- 5) Older students and students in higher grade levels within this study tended to report lower levels of self-belief, uncertain control, task management, and persistence, as well as higher levels of disengagement. The following are recommendations to educators who participated in this study on ways to improve these constructs.

- a. Older students and students in higher grade levels within this study tended to report lower levels of self-belief. Recommendations to educators on ways to increase student self-belief are as follows:
 - i. Educators can improve student self-belief by maximizing opportunities for success in the classroom (Martin, 2012). For instance, breaking assignments into smaller components which enable students to experience smaller successes along the way (Martin, 2012), such as, providing worksheets, practice assignments for objectives, and activities to practice new vocabulary.
 - ii. Educators can also help students to rework their definition of success into one that is accessible by all students (Martin, 2012). This can be achieved by individualizing tasks to match students' capabilities (Martin, 2012), especially for students who have IEP's (Individualized Education Plans).
 - iii. Educators who participated in this study need to communicate positive expectations to their students (Martin, 2012). Communicating positive expectations to students provides them with higher thoughts of themselves and helps them to recognize improvements they can make in their schoolwork.
 - iv. Educators can also help students to identify and challenge their negative self-beliefs about themselves and school work (Martin, 2012). Educators can do this by having students identify and reflect challenges they have experience in their school work, and think about ways in which they can improve upon those challenges.

These recommendations will aid educators in this study in increasing their students' levels of self-belief as self-belief is students' belief and confidence in their own ability to understand or do well in school work (Martin, 2012).

- b. Older students and students in higher grade levels within this study tended to report high levels of uncertain control. The following are recommendations to educators who participated in this study to decrease their students' level of uncertain control.
 - i. Educators can reduce uncertain control in students by showing them how to recognize the aspect of school work in which they can control (Martin, 2012). Educators who participated in this study should focus on explaining to students that they have control over their own effort they put into their schoolwork, the strategies they use to complete their schoolwork, and the attitude they have towards themselves, their teachers, and their schoolwork (Martin,

2012). The combinations of these aspects students' have on their school work are what enable them to be successful in the classroom.

- ii. On the same note, educators who participated in this study must encourage students not to focus on aspects in which they cannot control (Martin, 2012). Educators need to clearly communicate to students to recognize that they cannot control aspects of their schoolwork such as the difficulty of an assignment or distracters in the classroom (Martin, 2012). As a result, educators need to express to students to not focus on the aspect in which they cannot control but rather those in which they can control in order to be successful in the classroom.
- iii. Educators should also give feedback on student work to help reduce students' level of uncertain control (Martin, 2012). Educators can accomplish providing effective feedback to their students by providing task-based feedback, in that educators should explain to students what aspects of the assignment students can improve upon (Martin, 2012). For example, educators can make notes on assignments for students to practice vocabulary words to better be able to explain concepts within the unit, or to focus on a specific step within the process lesson objective.
- iv. Educators who participated in this study can help reduce levels of uncertain control by helping students develop a sense of control in the classroom (Martin, 2012). For instance, providing choices of achieving lesson objectives or the order in which tasks are completed (Martin, 2012), for example, allowing students to complete a specific objective before another objective. Additionally, educators can provide students the opportunities to choose specific topics for research (Martin, 2012), such as allowing students to choose a topic to research which interest them that is related to the material. For example, during a horticultural unit a student with an interest in bees could choose to research how bees affect pollination.

These recommendations can aid the educators who participated in this study in lowering their students' level of uncertain control as uncertain control refers to student's uncertainty about how to do well or prevent doing poorly in school (Martin, 2012).

- c. Older students and students in higher grade levels within this study tended to report lower levels of task management. Recommendations to educators who participated in this study on ways to improve student task management are as follows:

- i. Educators can help students increase their task management by encouraging students to create to-do lists (Martin, 2012). Educators should show students how to create effective to-do lists with assignments in all subjects in order to help students stay on task and accomplish assignments.
- ii. Educators should also help students create homework timelines (Martin, 2012). Educators should ask students to reflect on their homework/study time for a week, and record details such as where they complete their homework, who they complete their homework with, and what time of the day do they work on their homework, and what conditions do they complete their homework under (Martin, 2012). Educators should then help students analyze those variables which help them to effectively complete their homework and encourage students to do their homework under these conditions more often.

These recommendations can aid the teachers who participated in this study in increasing their students' task management skills as task management has been described as the way students use their schoolwork and homework time (Martin, 2012).

- d. Older students and students in higher grade levels within this study tended to report lower levels of persistence. The following are recommendations to educators who participated in this study to aid in increasing their students' levels of persistence.
 - i. Educators can improve student persistence by teaching students steps to goal setting (Martin, 2012). Educators in this study should use their FFA unit to teach SMART goals, in which students will learn how to set goals which are *specific, measurable, attainable, realistic, and timely*. As a part of the SMART goals lesson educators should have students create SMART goals for their agricultural education assignments, which will in turn encourage students to be persistent in their school work.
 - ii. Educators in this study can also have their students reflect on ways to overcome difficulties in schoolwork (Martin, 2012). Educators should encourage students to consider ways they get in the way of their own successes (for instance self-sabotage) and ways to prevent those feelings in the future. Educators should also encourage students to reflect on their efforts and to recognize that effort leads to improvement and successes (Martin, 2012).

These recommendations can aid the educators in this study in increasing their students' levels of persistence as persistence refers to how much

students continue to try understanding difficult or challenging problems in school work (Martin, 2012).

- e. Older students and students in higher grade levels within this study tended to report high levels of disengagement. The following are recommendations to educators who participated in this study as methods to decrease their students' levels of disengagement.
 - i. Educators can help reduce student disengagement by encouraging students to understand they are not helpless and they control their own quality of schoolwork, who they work with, and what they work on (Martin, 2012). It is important for educators who participated in this study to communicate these notations with their students. By communicating these notations with students, students may identify the educator as a person who will support them as they become more engaged in school work (Martin, 2012).
 - ii. Educators can also decrease disengagement by increasing student interaction in the classroom (Martin, 2012). Increasing student interaction provides opportunities for social interaction and increases students' engagement levels. Educators who participated in this study should provide activities which allow cooperative group work, for example, setting up labs in which students are assigned groups or partners.
 - iii. Educators who participated in this study can also reduce disengagement levels by providing opportunity for students to explore curriculum in the classroom (Martin, 2012). Providing opportunities for students to explore curriculum aids in demonstrating the relevancy of curriculum to students. Educators can provide opportunities to explore curriculum through providing interaction with people beyond the environment of the classroom and school (Willms et. al, 2009), such as inviting guest speakers which correlate with the lessons being taught within the curriculum. Additionally, educators can also provide multimedia instruction (Deleavy & Milton, 2009), such as using the internet to research issues within the curriculum or to Skype with experts around the world. Educators can also use multimedia items such as cameras, videos, smart boards, and PowerPoint for assignments to allow students opportunities for creativity (Deleavy & Milton, 2009).

The following recommendations can aid the educators who participated in this study in lowering their students' levels of disengagement as disengagement refers to students' desire to give up on school work (Martin, 2012).

Recommendations for Further Research

Based upon the findings of this study, the following recommendations for further researchers were made:

- 1) To replicate this study using procedures which allow for randomization of a sample of students in order to provide more generalizability, as this research design used a convenience sample of students from the classrooms of those agricultural educators who agreed to participate in the study.
- 2) Further studies should be conducted which investigate the variables of student motivation and engagement which extend beyond student self-perceptions of motivation and engagement, as used in this study, in order to prevent the possibility of socially desirable answers, although the assumption in this study was that students responded in a truthful manner.
- 3) Further studies should investigate the impact of environmental attributes (home influences, peer pressures, societal norms, and institutional influences) on students' motivation to learn and engagement in learning, as this study focused primarily on student attributes (gender, age, and grade level) and students' motivation to learn and engagement in learning.
- 4) Further research should be conducted in the form of an experimental study to investigate the impact of interventions recommended to educators, as a result of this study, on student motivation and engagement.

APPENDIX A
INVITATION TO TEACHERS

September 1, 2012

Dear Agricultural Educator,

I am a University of Florida Graduate student conducting a studying on motivation and engagement in middle school agricultural education students. I am collecting data from agricultural education middle school students in North Central Florida on their perceived motivation and engagement in the classroom. I have indicated you as a middle school agricultural educator in North Central Florida and am requesting your assistance by allowing me to collect data from your students. Students will complete a short *Motivation and Engagement* questionnaire which will be sent to participating teachers in the beginning of November and should take 10-15 minutes for students to complete.

My goal is to share students' responses on student motivation and engagement with middle school agricultural education teachers at the completion of the study. I hope that you will be able to assist me in collecting this valuable information from students in order to shed light into how we as educators can continue to improve our teaching strategies to increase student motivation and engagement in the classroom. I will be in contact with you by phone soon to answer any questions you may have about the procedures of this study.

I thank you for your time and assistance in collecting data for this study. Please feel free to contact me if you have any questions at ashcrffa@ufl.edu.

Sincerely,

Ashley Young

Ashley Young
Graduate Student
Agricultural Education and Communication
University of Florida

APPENDIX B
MOTIVATION AND ENGAGEMENT SCALE

Adapted from (Lifelong Achievement Group, 2012)

Dear Student,

Welcome to the Motivation and Engagement Scale. This survey has been given to you to find out your motivation and engagement towards schoolwork and how you think of yourself as a student.

There are no right or wrong answers. Make sure to read the questions completely and try your best to give an honest answer. Your name will not be connected to this survey in any way and your teacher will not know your answers.

You should have one answer for each question. It is best to answer every question, if you are unsure of an answer circle the one that is closest to what you think.

If you have any concerns please talk to your teacher who gave you the survey. There are some questions that are similar to each other. This is not to trick you. To get the best judgment of your motivation and engagement this survey needs to ask similar questions in different ways. Remember to answer in a way that shows what you really think about yourself.

Here is an example:

Disagree Strongly	Disagree	Neither Agree or Disagree	Agree	Agree Strongly
1	2	3	4	5
	Strongly Disagree			Agree Strongly
I work hard at school	1	2	3	4
				5

This student circled Number 4 (‘Agree’) because he does work hard at school. He didn’t circle Number 5 (‘Strongly Agree’) because he doesn’t work hard all of the time. He didn’t circle Number 3 (‘Neither Agree or Disagree’) because he works hard most of the time.

Ask your teachers if you have any questions. You may now begin.

School: _____	Grade: (Please circle one) 6 th Grade 7 th Grade 8 th Grade	Gender: (Please circle one) Male Female
Age: _____		

Due to copyright license agreements the complete MES-JS instrument could not be included in the appendices. The instrument was a 44-item questionnaire comprised of four items for each of the eleven factors (Martin, 2012). The questionnaire was a 5-point Likert-type scale with answer choices consisting of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) (Martin, 2012).

Copyright agreements allow for one sample item per each of the 11 sub-scales to be included. They are as follows:

- 1) Self-Belief *"If I try hard, I believe I can do my schoolwork well."*
- 2) Valuing *"Learning at school is important."*
- 3) Learning Focus *"I feel very happy with myself when I really understand what I'm taught at school."*
- 4) Planning *"Before I start a project I plan out how I am going to do it."*
- 5) Task Management *"When I do homework, I usually do it where I can concentrate best."*
- 6) Persistence *"If I can't understand my schoolwork, I keep trying until I do."*
- 7) Anxiety *"When I have a project to do, I worry about it a lot."*
- 8) Failure Avoidance *"The main reason I try at school is because I don't want to disappoint my parents."*
- 9) Uncertain Control *"When I don't do well at school I don't know how to stop that happening the next time."*
- 10) Self-sabotage *"Sometimes I don't try hard at school so I can have a reason if I don't do well."*
- 11) Disengagement *"I've given up being interested in school."*

APPENDIX C ADMINISTRATION PROTOCOL

Dear Agricultural Educator,

Thank you for agreeing to participate in this study. Your students' responses regarding motivation and engagement in the classroom will help in shedding light into how middle school agricultural education students are motivated and engaged. Upon completion of this study you will receive information regarding your students' and middle school agricultural education students in North Central Florida.

In your packet you will find the following documents.

1. Informed Parental Consent Form & Informed Student Consent Form
2. Motivation and Engagement-JS Survey
3. Survey Administration Directions
4. Empty Manila Envelope

Please distribute the *Informed Parental Consent & Informed Student Consent* forms to your students. After you have collected these consent forms you may administer the *Motivation and Engagement-JS Survey*. Please *only administer* the survey to those students who have turned in the Informed Parental Consent and Informed Student Consent Form.

Please make sure that your students understand that their survey is completely anonymous. Also, please make it clear that you will not see their responses to the questions as they will place their completed survey in the empty manila envelope upon completion. Please make it clear that students should answer the questions honestly.

When administering the survey please read the directions on the front page of the survey (*Survey Administration Directions*) aloud to your students and answer any questions to the best of your ability. Make sure to tell students *not to write their names* on their survey. After they have completed their survey instruct them to place their survey in the manila envelope.

This survey should take 10-15 minutes to complete. Once you have collected all completed surveys please return them with *any blank surveys* you may have by December 31st, 2012 to:

Dr. Kirby Barrick
C/O Ashley Young
P.O. Box 110540
University of Florida
Gainesville, FL 32611

Again, thank you for your time and cooperation with this study.

Sincerely,

Ashley Young
Graduate Student
University of Florida

After distributing the *Motivation and Engagement Scale-JS* to your students, please read these directions aloud and have your students follow along.

Motivation and Engagement Scale- JS

Dear Student,

Welcome to the Motivation and Engagement Scale. This survey has been given to you to find out your motivation and engagement towards schoolwork and how you think of yourself as a student.

There are no right or wrong answers. Make sure to read the questions completely and try your best to give an honest answer. Your name will not be connected to this survey in any way and your teacher will not know your answers.

You should have one answer for each question. It is best to answer every question, if you are unsure of an answer circle the one that is closest to what you think.

If you have any concerns please talk to your teacher who gave you the survey. There are some questions that are similar to each other. This is not to trick you. To get the best judgment of your motivation and engagement this survey needs to ask similar questions in different ways. Remember to answer in a way that shows what you really think about yourself.

Here is an example:

Disagree Strongly 1	Disagree 2	Neither Agree or Disagree 3	Agree 4	Agree Strongly 5
	Strongly Disagree			Agree Strongly
I work hard at school	1	2	3	④ 5

This student circled Number 4 (‘Agree’) because he does work hard at school. He didn’t circle Number 5 (‘Strongly Agree’) because he doesn’t work hard all of the time. He didn’t circle Number 3 (‘Neither Agree or Disagree’) because he works hard most of the time.

Ask your teachers if you have any questions. You may now begin.

APPENDIX D IRB APPROVAL

UF Institutional Review Board
UNIVERSITY of FLORIDA

PO Box 112250
Gainesville, FL 32611-2250
352-392-0433 (Phone)
352-392-9234 (Fax)
irb2@ufl.edu

DATE: August 20, 2012

TO: Ashley Young
PO Box 110540
Campus

FROM: Ira S. Fischler, PhD; Chair, *ISF*
University of Florida
Institutional Review Board 02

SUBJECT: Approval of UFIRB # 2012-U-0836
Student Motivation and Engagement in Learning

SPONSOR: None

I am pleased to advise you that the University of Florida Institutional Review Board has recommended approval of this protocol. Based on its review, the UFIRB determined that this research presents no more than minimal risk to participants. Your protocol was approved as an expedited study under category 7: *Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.*

Given this status, it is essential that you obtain signed documentation of informed consent from each participant. Enclosed is the dated, IRB-approved informed consent to be used when recruiting participants for the research. If you wish to make any changes to this protocol, *including the need to increase the number of participants authorized*, you must disclose your plans before you implement them so that the Board can assess their impact on your protocol. In addition, you must report to the Board any unexpected complications that affect your participants.

It is essential that each of your participants sign a copy of your approved informed consent that bears the IRB approval stamp and expiration date.

Your approval is valid through **August 8, 2013**. If you have not completed the protocol by this date, please telephone our office (392-0433), and we will discuss the renewal process with you. Additionally, should you complete the study before the expiration date, please submit the study closure report to our office. The form can be located at http://irb.ufl.edu/irb02/Continuing_Review.html. It is important that you keep your Department Chair informed about the status of this research protocol.

ISF:dl

APPENDIX E

IRB PARENTAL CONSENT

Department of Agricultural Education and Communication
PO Box 110540
University of Florida
Gainesville, FL 32600-0000

Informed Parental Consent

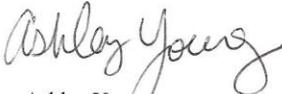
Dear Parent/Guardian,

I am a graduate student in the Department of Agricultural Education and Communication at the University of Florida, conducting research on student engagement and motivation under the supervision of Dr. Kirby Barrick. The purpose of this study is to gather students' perspectives on engagement and motivation in learning. The results of the study may help agricultural educators improve instructional techniques by better understanding how middle school students are motivated to engage and learn in the classroom. These results may not directly help your child today, but may benefit future students. With your permission, I would like to ask your child to volunteer for this research.

Participating students will be asked to complete the *Motivation and Engagement Scale* questionnaire which include questions such as "*If I try hard, I believe I can do my schoolwork well*". Participating students will be asked to answer questions on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). Questionnaires will be given by your child's agricultural teacher during one class period and should take approximately 10-15 minutes to complete. Participating students will be instructed to place completed questionnaires in a large envelope to ensure security and privacy. Your child's identify will be kept confidential to the extent provided by the law as no names will be connected to survey responses. Participation or non- participation in this study will not affect your child's grades or placement in any programs.

You and your child have the right to withdraw consent for your child's participation at any time without consequence. There are no known risks or immediate benefits and no compensation is offered for participation. If you have any questions about this research protocol, please contact me at ashcrffa@ufl.edu or my faculty supervisor, Dr. Barrick, at kbarrick@ufl.edu. Questions or concerns about your child's rights as a research participant may be directed to the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611, (352) 392-0433.

Sincerely,



Ashley Young
Graduate Student
Department of Agricultural Education and Communication
University of Florida

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2012-U-0836
For Use Through 08-08-2013

I have read the procedure described above. I voluntarily give my consent for my child,
_____, to participate in Ashley Young's study of student motivation and engagement
in learning.

Parent / Guardian

Date

2nd Parent / Guardian/ Witness

Date

APPENDIX F
IRB STUDENT CONSENT

Department of Agricultural Education and Communication
PO Box 110540
University of Florida
Gainesville, FL 32600-0000

Informed Student Consent

Dear Student:

I am a graduate student at the University of Florida. As part of my coursework I am completing a study to learn how middle school students are motivated to engage in classroom learning. I am asking you to participate in this study because you are an agricultural student in one of Florida's agricultural education programs. Participants will be asked complete the *Motivation and Engagement Scale* questionnaire which has questions like "If I try hard, I believe I can do my schoolwork well". Questions will be answered on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). If you chose to participate it will take you approximately 10-15 minutes to complete. You will not have to answer any question you do not wish to answer. You will complete the questionnaire in your agricultural course after you have turned in your parental and student consent forms to your agricultural teacher. After completing the questionnaire you will be instructed to place it in a large envelope to ensure security and privacy. Your identity will be kept confidential to the extent provided by law. Your name will not be connected to questionnaire responses.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this study. You are free to withdraw your consent to participate and may discontinue your participation in the study at any time without consequence. Participating in this study will have no effect on your grade in your agriculture course.

If you have any questions about this research protocol, please contact me at asherffa@ufl.edu or my faculty supervisor, Dr. Kirby Barrick, at kbarrick@ufl.edu. Questions or concerns about your rights as a research participant rights may be directed to the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611; (352) 392-0433.

Please sign and return this letter to your agricultural teacher. By signing this letter, you give me permission to include your responses anonymously in my study to be submitted to my faculty supervisor as part of my course work.

Sincerely,



Ashley Young
Graduate Student
Department of Agricultural Education and Communication
University of Florida

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2012-U-0836
For Use Through 08-08-2013

I have read the procedure described above for the motivation and engagement in learning study. I voluntarily agree to participate in the study by answering questions on the questionnaire.

Signature of participant

Date

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BIOGRAPHICAL SKETCH

Ashley Nichole Young grew up in Miami, Florida where she was enrolled in the Agriscience magnet program at Coral Reef High School. During her studies as a high school student Ashley's passion for agriculture was deepened. While in high school Ms. Young was an active FFA member, 4-H member, and was active with her local county fair serving as an ambassador and lead ambassador her junior year.

After graduating high school in 2006, Ashley was elected to serve the Florida FFA Association as the Area VI State Vice-President. It was during her year of service that Ms. Young discovered her passion for teaching. After retiring as a state officer in 2007 she moved to Gainesville, Florida where she enrolled in Santa Fe Community College. Ashley received an Associate of Arts degree in agriculture from Santa Fe Community College in the spring of 2009, and enrolled in the Agricultural Education and Communication program at the University of Florida in the fall.

While earning her bachelor's degree Ashley was active in many school organizations including Collegiate FFA, Collegiate Farm Bureau, Alpha Zeta, and Alpha Tau Alpha. Ashley graduated with a Bachelor of Science degree from the University of Florida in the spring of 2011.

During the fall of 2011 she began her graduate work in Agricultural Education at the University of Florida and became a middle school agricultural educator and FFA advisor, teaching Exploratory Agriscience at High Springs Community School in High Springs, Florida. In 2012 Ms. Young was awarded the Rookie Teacher of the year award for Alachua County Career and Technical Education and at High Springs Community School. Upon graduating with her Master of Science degree in agricultural

education Ashley plans to continue her teaching career with the hopes to continue to influence, inspire, and motivate students through agricultural education.