CONCEPTUALIZING THE PROCESS OF SUPPORTING YOUTHS' PSYCHOLOGICAL NEEDS AND INTRINSIC MOTIVATION WITHIN SCHOOL BASED AGRICULTURAL EDUCATION PROGRAMS: A MIXED METHODS STUDY

A Dissertation

presented to

the Faculty of the Graduate School

at the University of Missouri-Columbia

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

---

by

AMANDA MICHELLE BOWLING

Dr. Anna Ball, Dissertation Supervisor

July, 2017

The undersigned, appointed by the Dean of the Graduate School, have examined the dissertation entitled

CONCEPTUALIZING THE PROCESS OF SUPPORTING YOUTHS' PSYCHOLOGICAL NEEDS AND INTRINSIC MOTIVATION WITHIN SCHOOL BASED AGRICULTURAL EDUCATION PROGRAMS: A MIXED METHODS STUDY

Presented by Amanda Michelle Bowling,

a candidate for the degree of Doctorate of Philosophy in Agricultural Education and hereby certify that, in their opinion, it is worthy of acceptance.

Anna Ball
Professor and Director of Graduate Studies,
Agricultural Education and Leadership

Jon Simonsen
Associate Professor and Department Chair,
Agricultural Education and Leadership

Tracy Kitchel
Professor and Department Chair,
Agricultural Communication, Education, and Leadership

David Bergin
Associate Professor
Educational, School, and Counseling Psychology

DEDICATION

This dissertation is dedicated to my husband Curtis for always being supportive, to my daughter Casey Jo for being the spark in my days, to my parents Bob and Kathy for always being there for me, and to all my graduate student colleagues who were my sounding board through my journey.

ACKNOWLEDGEMENTS

Individual success is a myth. No one succeeds all by herself.

-Pat Summit

I want to thank my dissertation committee for the countless hours and support they have provided throughout my time in graduate school and throughout the dissertation process. I could not have completed this process without their expertise and support. To Anna Ball, I cannot thank you enough for the countless hours you have dedicated to not only my dissertation but also my growth as a scholar and as an individual. You embraced my competitiveness, drive, and passion and helped me to push myself far beyond what I ever thought imaginable. To Jon Simonsen, thank you for being right next door whenever I needed timely advice and encouragement. To Tracy Kitchel, thank you for helping me expand my quantitative knowledge. To David Bergin, thank you for sharing your expertise in motivation and providing a supportive outside perceptive. Your guidance was influential in helping me further my knowledge of youth motivation and my passion for research. Thank you to anyone else who was instrumental in my journey through graduate school.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Conceptualizing the Process of Supporting Youths' Psychological Needs and Intrinsic Motivation Within School Based Agricultural Education Programs: A Mixed Methods Study

Amanda Michelle Bowling

Dr. Anna Ball, Dissertation Supervisor

ABSTRACT

The purpose of this mixed methods study was to identify the strategies, actions, and processes School Based Agricultural Education (SBAE) teachers utilize to support the psychological needs and intrinsic motivation of students. Through an exploratory sequential design, quantitative instruments were first utilized to gauge the motivational climate of the programs and the teachers' tendencies to either be autonomy supporting or controlling. Qualitative grounded theory interviews and observations were utilized to determine the actions and processes of needs support within the program. Through the convergent analysis a substantive theory was formed which identified the process for supporting SBAE student psychological needs. Within the theory, teacher motivational beliefs emerged as the context to which the needs support process was fostered and developing and supported the need for relatedness emerged as the central phenomenon. Within the process, teachers also utilized extrinsic and intrinsic motivational strategies, along with the intracurricular nature of SBAE programs to foster and strengthen student motivation. Students experienced a range of outcomes including support for the need of competence, support and thwart for the need of autonomy, and a range of extrinsic and intrinsic motivational outcomes.

CHAPTER 1—INTRODUCTION

Background and Setting

School-based agricultural education (SBAE) programs utilize a tripartite model that includes various experiences within the classroom/laboratory, participation in the FFA organization, and participation in Supervised Agricultural Experience (SAE) projects (Phipps, Osborne, Dyer, & Ball, 2008). Through these experiences, SBAE programs operate for the purposes of (a) preparing students for entry into agricultural occupations, (b) entrepreneurship and job advancement, and (c) agricultural literacy (Phipps et al., 2008). SBAE programs and teachers strive to focus on individual learners, problem-based instruction, leadership development, motivation, and community engagement (Phipps et al., 2008). SBAE teachers utilize a wide range of formal and non-formal educational experiences within the model to meet program purposes. Formal education experience within the SBAE classroom, "provides opportunities for students to study and discuss problems pertaining to specific areas of agriculture and natural resources" (Phipps et al., 2008, p. 5). Similarly, within agricultural mechanics, greenhouse, food science, and animal science laboratories student can apply classroom based principles and develop career related skills (Phipps et al., 2008). Through practical application within real life situations, SAE projects allow student to further expand their agricultural knowledge. Lastly, through their participation in the National FFA youth organization, students can engage in a various civic engagement, leadership development, and career development activities (Phipps et al., 2008).

Through the program structure and practices utilized by teachers and FFA advisors, SBAE programs strive to positively develop their youth participants. Positive Youth Development (PYD) programs focus on developing mutually beneficial relationships that will have effects on the self, family, community, and society (Lerner, Phelps, Forman, & Bowers, 2009). Additionally, PYD programs strive to develop self-identities; initiative; basic emotional, cognitive, and physical skills; competence; social connections; and motivation (Hansen, Larson, & Dworkin, 2003). The focus of PYD programs overlaps with the purposes of SBAE programs in that both types of programs strive to positively develop youth through interpersonal development, social and cognitive competence enhancement, and community engagement. Thus, SBAE programs could be considered a subset of PYD.

Youth participants of PYD programs can experience many benefits including developing intrinsic motivation, developing self-identify, and increasing positive relationships (Hansen et al., 2003). Specifically, when intrinsic motivation is developed, participants can see immediate benefits such as increased use of cognitive strategies, deeper processing, and more creative reasoning (Larson & Rusk, 2010). Further, intrinsic motivation can also have cumulative outcomes such as facilitating achievement; facilitating general development; and prolonging engagement, motivation, and interest in the activity (Larson & Rusk, 2010). Due to the benefits of intrinsic motivation, it is important to recognize the components and strategies of PYD programs that develop and sustain intrinsic motivation.

Statement of the Problem

Within the present body of literature, researchers have identified specific successful PYD program structures that help to foster intrinsic motivation, including allowing youth to feel challenged, giving youth a sense of control, developing deep attention in the program/activity, and assisting youth to experience high motivation (Larson & Rusk, 2010). Additional actions, such as supporting youth's engagement, cultivating norms and enforcing rules, responding to youth's personalities and relationships, reconciling the organization system with youth development, interfacing with external worlds, being youth centered, and balancing multiple considerations that are also found to be components of quality PYD programs, can help foster motivation (Larson & Walker, 2010). Although research has identified program structures that foster intrinsic motivation, experts have not investigated the specific day-to-day practices that adult educators and leaders utilize (Larson, Walker, Rusk, & Diaz, 2015). Due to the benefits youth can experience when intrinsic motivation is developed through PYD programs, it is imperative that research-supported strategies utilized by adult educators within PYD programs be investigated. Specifically, within formal agricultural education research should investigate SBAE teacher strategies that support the psychological needs of students within SBAE programs.

Theoretical Framework

This study utilized both philosophical perspectives and theoretical frameworks to investigate the processes which support the psychological needs of SBAE students. According to Creswell (2015), advanced mixed-methods designs can utilize a variety of conceptual and theoretical frameworks to guide the various components within the study.

The quantitative portion of this mixed-methods study follows the framework of the motivational theory known as Self-Determination Theory (SDT). Self-Determination Theory is a needs-based theory that focuses on psychological needs and motivational orientations. SDT examines how the psychological need of autonomy and the locus of causation influence the orientation of motivation.

SDT researchers believe the psychological needs of competence, relatedness, and autonomy are universal, innate needs all humans strive to fulfill (Deci & Ryan, 2000; Ryan & Deci, 2002). Research indicates through the fulfillment of the psychological needs, well-being and life satisfaction are sustained (Leversen, Danielsen, Birkeland, & Samdal, 2012; Tian, Chen, & Huebner, 2014). Additionally, supporting the psychological needs of autonomy, relatedness, and competence helps to develop and sustain intrinsic motivation (Deci & Ryan, 2000; Ryan & Deci, 2002).

SDT also comprises the self-determination continuum which contains various motivational orientations (see Figure 1). The continuum separates motivational orientations based on locus of causation (either external or internal) and level of autonomy (self-determination). Within the continuum emerge three motivational orientation types: amotivation, extrinsic motivation, and intrinsic motivation (Deci & Ryan, 1985; Ryan & Deci, 2002). Additionally, within extrinsic motivation the orientations of external regulation, introjected regulation, identified regulation, and integrated regulation exist. Research indicates that as the perceived level of volition and self-determination increases, motivation is internalized and transitions toward intrinsic motivation (Deci & Ryan, 1985).

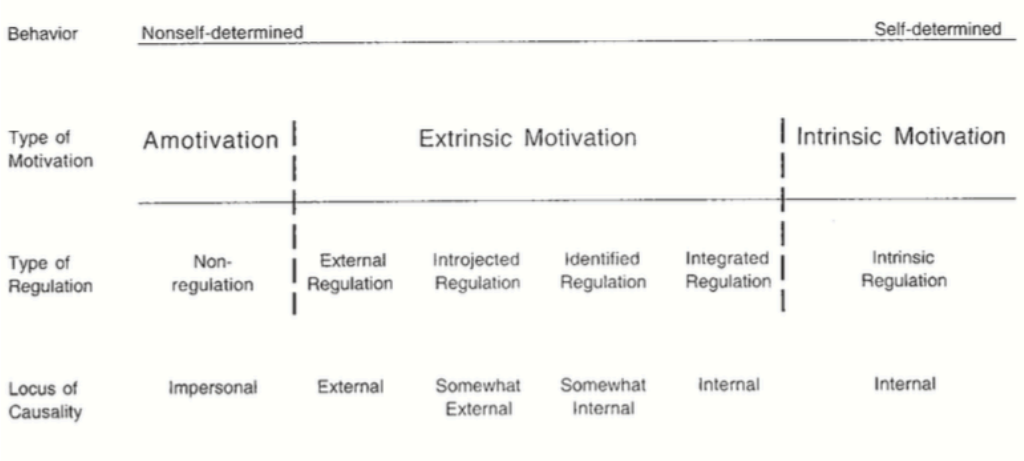

Figure 1. Self-determination continuum (Deci & Ryan, 2000)

SDT focuses on supporting the psychological needs of competence, relatedness, and autonomy. Additionally, SDT highlights various motivational orientations based on the locus of causation and level of autonomy. If the psychological needs are supported and a perceived internal locus of causality exists, intrinsic motivation will be fostered.

Philosophical Perspective

For the qualitative portion of this study, I utilized a philosophical perspective to identify my assumptions regarding how knowledge is discovered, the nature of the world, and how the knowledge of participants can best be captured (Creswell, 2015). My philosophical perspective, underlined by my pragmatist epistemology, framed the qualitative ontology and methodology utilized. Within my perspective, I believe knowledge is best discovered and captured through deeply emerging ourselves into the day-to-day problems and practices of the participants. I also believe social and/or behavioral theories exist to help interpret the problems and practices encountered in everyday life, but one single theory cannot fully explain all the problems and practices

encountered. Thus, I believe that a researcher can utilize a theory as a lens to view reality but the researcher must allow emergence of all data within and beyond the identified lens.

I have framed the qualitative methodology through the use of a philosophical perspective, utilizing no theoretical framework. However, due to the sequential nature of the mixed methods design, it is nearly impossible to separate the theoretical framework utilized within the quantitative methodology and the qualitative portion of this study. Thus, I used the quantitative theoretical framework of SDT as a lens within my philosophical perspective in which I viewed the research problem, questions, and data. Additionally, due to the vast nature of the numerous theories that examine motivation, it is imperative to provide a lens in which to view motivation and within this lens characteristics of psychological needs and intrinsic motivation exist. These identified characteristics are pertinent to linking the observed strategies utilized within SBAE programs to that of psychological needs and intrinsic motivation. Although I utilized SDT as a lens within my perspective, I also allowed all data to emerge from the knowledge of the participants.

Purpose of the Study

The purpose of this study is to identify the strategies, actions, and processes SBAE teachers utilize to support the psychological needs of students and thus develop the students' intrinsic motivation. This study investigated strategies utilized both within and outside the agricultural classroom.

Research Objectives and Questions

Objectives:

1. Describe the support of the SBAE students' psychological needs within the SBAE program.
2. Describe the students' perceived intrinsic motivation within the SBAE program.
3. Describe the autonomy-supporting orientation of the SBAE teachers.

Questions:

1. What strategies do the SBAE teachers perceive as the most supportive of the students' psychological needs?
2. Which strategies utilized by the SBAE teachers do the students perceive as the most supportive of their psychological needs?
3. What strategies that support the psychological needs of students do SBAE teachers use within the SBAE program?

Convergent Question:

What actions and processes are utilized by the SBAE teachers within and outside of the SBAE classroom to support the psychological needs of students and thus develop students' intrinsic motivation?

Definition of Terms

Autonomy: Perception that one is the origin or source of one's own behavior (Deci & Ryan, 2000; Ryan & Deci, 2002).

Career Development Events (CDEs): Agriculturally based academic competitions that are designed to develop problem-solving skills, career-related skills, and career-related interests (Phipps et al., 2008).

Competence: Felt sense of confidence and efficacy in action, not focusing on attained skill or capability (Deci & Ryan, 2000; Ryan & Deci, 2002).

Extrinsic motivation: Engaging in an activity for an end state that is separate from the activity itself (Deci & Ryan, 1985; Ryan & Deci, 2002).

Intrinsic motivation: Engaging in an activity for the enjoyment or interest in it (Deci & Ryan, 1975).

National Chapter Award: Award program that recognizes FFA chapters that successfully complete a Program of Activities. Chapters are awarded either a bronze, silver, or gold award (National FFA Organization, 2016).

National FFA Organization (FFA): A youth organization made up of state associations and local chapters, committed to youth development through premier leadership, personal growth, and career success through agricultural education (National FFA Organization, 2016).

Positive Youth Development (PYD) programs: Philosophical approach to youth programming that focuses on developing mutually beneficial relationships, which will positively impact self, family, community, and society (Lerner et al, 2009).

Psychological needs: Universal, innate requirements that all humans share (Deci & Ryan, 2000; Ryan & Deci, 2002).

Relatedness: Sense of belonging; feeling connected to others; caring for and being cared for by others (Deci & Ryan, 2000; Ryan & Deci, 2002).

School-based agricultural education (SBAE) programs: Formal agricultural education programs offered in public schools (Phipps et al., 2008).

Supervised Agricultural Experience (SAE): Opportunity for students to practically apply classroom and laboratory content outside of school time while being supervised by teachers, parents, employers, or others (Phipps et al., 2008).

Limitations of the Study

1. This study focused on the strategies, actions, and processes within SBAE programs. Findings from this study may not be transferable to other PYD programs.
2. This study sampled a specific group of SBAE teachers (n = 5) and their students. Findings from this study may not be representative of other SBAE teachers within and outside the state of Missouri.
3. Many of the participants within this study are one teacher within SBAE programs with two or more agriculture teachers. All of the agriculture teachers within the SBAE program will have some amount of contact with students through the various activities within the SBAE classroom and FFA chapter. Thus, I acknowledge the challenge which exists trying to separate the influence of an individual teacher on the students' psychological needs and intrinsic motivation.

Basic Assumptions

1. Strategies that support the psychological needs of the SBAE students exist within agricultural education and SBAE programs.
2. Researchers can observe, identify, and codify strategies that support psychological needs.
3. SBAE teachers utilize strategies that support psychological needs both inside and outside of the classroom.

Need for the Study

Engagement in PYD programs can positively affect the youth who participate in them in numerous ways, including developing a positive self-identify, decreasing delinquent behavior, and increasing positive relationships (Hansen et al., 2003). Additionally, program evaluations indicate that successful youth development programs develop social, emotional, cognitive, behavioral, and moral skills; support autonomy; are youth-centered; develop interpersonal and social competence; and provide positive adult support (Eccles & Templeton, 2002; Larson & Walker, 2010). Although, PYD programs are beneficial to youth, many youth participants experience extrinsic motivations to join them from relatives or peers (Dawes & Larson, 2011). In addition, after youth begin to participate in a PYD program, their motivation can transition more internally as the youth begin to identify and integrate their experiences within the programs to their self-schemas and future goals (Dawes & Larson, 2011). Through the inherent structure of and activities within PYD programs, these programs can support youths' psychological needs of competence, autonomy, and relatedness (Dawes & Larson, 2011; Larson & Rusk, 2010; Larson & Walker, 2010). As PYD programs meet these psychological needs, they also increase youths' intrinsic motivation (Deci & Ryan, 2000; Ryan & Deci, 2002). If PYD programs develop intrinsic motivation, youth can experience sustained motivation and sustained engagement in the activity/organization (Larson & Rusk, 2011).

Similar to PYD programs, literature indicates SBAE programs can positively influence youth in numerous ways. Research indicates participation in SBAE programs can foster social competence (Phelps, Henry, & Bird, 2012), positive peer groups and friendships (Witt, Doerfert, Ulmer, Burris, & Lan, 2013), and autonomy (Ball, Bowling,

& Bird, 2016; Bird, 2012). Similar to PYD, youth join and participate in SBAE primarily due to external factors (Phelps et al., 2012) but continue their participation as their interest is fostered (Bird, Martin, & Simonsen, 2013; Roberts, Terry, Brown, & Ramsey, 2016). Examinations within SBAE have just begun to investigate the fringe of youth psychological needs and motivation, thus more research is warranted to better conceptualize how students' psychological needs and motivation are supported.

Although researchers have identified effective programmatic structures and benefits, they have not identified the effective practices of PYD and SBAE youth practitioners. A great deal of research has focused on designing and evaluating PYD programs, but researchers have not conducted studies that focus on effective practices of the adult educators and leaders in PYD programs (Larson et al., 2015). Additionally, Larson et al. (2015) state that, "daily practice is not documented, systemized, or made available in centralized sources" (p. 3). Further, there exists a need for research to determine how youth practitioners make decisions regarding motivational strategies within their programs' contexts (Larson et al., 2015). Larson and Rusk (2011) state, "If it [intrinsic motivation] can mobilize deep, sustained, self-directed attention to learning and development, we need to know what activates it" (p. 101). This call within the existing literature to identify effective practices of youth practitioners when developing intrinsic motivation helps to frame the existing gap within the literature. Beyond the gap in the literature, the potential benefits youth can experience from sustained intrinsic motivation—such as sustained motivation, sustained engagement in the SBAE and PYD programs, increased academic achievement, and an increase in cognitive strategies utilized—illustrate the need to identify effective strategies. Lastly, the identification and

dissemination of these strategies can help to alter the current practices of youth practitioners who strive to increase the intrinsic motivation of their participants.

CHAPTER 2—REVIEW OF LITERATURE

School-based agriculture education (SBAE) programs offer youth a unique experience that combines a Positive Youth Development (PYD) program in the National FFA Organization with formal agriculturally based classroom education. The combination of PYD and formal education provides multiple contexts in which intrinsic motivation and psychological needs can be supported. Circumstances within PYD and formal education can also undermine intrinsic motivation and thwart the psychological needs of students. This chapter reviews the literature within PYD and formal education in order to see how these individual contexts influence youths' intrinsic motivation and psychological needs. SBAE literature was also reviewed to identify programmatic components which support or thwart youth psychological needs and intrinsic motivation.

Self-Determination Theory

Self-Determination Theory (SDT) is a needs-based theory that focuses on psychological needs and motivational orientations. Within SDT, specific assumptions help define basic human psychological needs and motivational orientations, examine how they influence behavior, and determine individual alignment with specific orientations for a given behavior and/or task. The first assumption underlining SDT is that humans are active organisms who seek growth, challenges within their environment, and the integration of challenges into their self-schemas (Ryan & Deci, 2002). SDT also assumes individuals attempt to develop a natural, innate, and constructive sense of self. Further, humans seek to integrate into autonomy (integrated internal organization) and homonomy (integration of one's self to others) (Ryan & Deci, 2002). Lastly, SDT assumes there are clear and specific social contextual factors that either support or thwart the other

assumptions (Ryan & Deci, 2002). The social contextual factors include but are not limited to money, rewards, pressure from other individuals, and pressure to behave in manners that are socially acceptable. Thus, SDT forms a needs-based motivational theory through which social contexts are utilized to examine various motivational orientations (Ryan & Deci, 2002).

The organization of SDT follows a continuum containing various motivational orientation types to describe motivation and human behavior. The self-determination continuum intends to encompass the broad experiences of human nature and embrace a wide range of human behaviors (Vallerand & Ratelle, 2002). The continuum segregates motivational orientations based on locus of causation (either external or internal) and level of autonomy (self-determination). Within the continuum emerge three motivational orientation types: amotivation, extrinsic motivation, and intrinsic motivation (Deci & Ryan, 1985; Ryan & Deci, 2002). Amotivation is a lack of intention to act, not acting, or acting passively (Deci & Ryan, 1985; Ryan & Deci, 2002). Amotivation comprises no locus of causation and is not self-determined or regulated. Extrinsic motivation leads to engaging in a behavior for an end state that is separate from the behavior itself (Deci & Ryan, 1985; Ryan & Deci, 2002). Within extrinsic motivation there are varying types of loci of causation and varying levels of self-determination. Intrinsic motivation leads to engaging in a behavior, task, or activity for the sheer enjoyment and/or interest in it (Deci & Ryan, 1985; Ryan & Deci, 2002). Intrinsic motivation consists of a completely internal locus of causation and is completely self-determined. The continuum of motivation examines a wide range of loci of causation and levels of self-determination.

Within the extrinsic motivation orientation there are four additional types of

extrinsic motivation regulation. These types include external regulation, introjected regulation, identified regulation, and integrated regulation (see Figure 1; Deci & Ryan, 1985; Ryan & Deci, 2002). External regulation consists of an external locus and is the least self-determined. External regulation leads to engaging in a behavior or activity to receive rewards or to avoid punishment (Deci & Ryan, 1985; Ryan & Deci, 2002). Introjected regulation also consists of an external locus of causation but is slightly self-determined, and people engage in it to help boost ego, to receive recognition, or to avoid shame or guilt (Deci & Ryan, 1985; Ryan & Deci, 2002). Identified regulation comprises a more internal locus of causation and is more self-determined. Individuals engage in identified regulation when they identify with the activity or with a behavior but are not intrinsically interested in it (Deci & Ryan, 1985; Ryan & Deci, 2002). The final extrinsic motivational orientation is integrated regulation, which consists of an internal locus of causation and is fully self-determined. People engage in integrated regulation if the behavior or activity is integrated into their self-schema and endorses their future goals and values. Integrated regulation is different from intrinsic motivation because the individual is not engaging in the activity due to sheer enjoyment or interest. Within extrinsic motivation and within SDT several motivational orientations exist to examine human behavior.

According to SDT, all humans seek to fulfill three basic psychological needs. Researchers believe the basic psychological needs to be innate and universal for all human beings (Deci & Ryan, 2000; Ryan & Deci, 2002). The psychological needs are autonomy, competence, and relatedness (Deci & Ryan, 2000; Ryan & Deci, 2002).

Autonomy is the origin or source of one's own actions and behaviors (Deci &

Ryan, 2000; Ryan & Deci, 2002). Autonomy is concerned with actions that arise from interest and integrated value (Ryan & Deci, 2002). Even if outside agents influence autonomous actions, these actions are still viewed as extensions of one's self, which are driven by initiative and value (Ryan & Deci, 2002). According to Deci and Ryan (1975) people naturally engage in intrinsically motivated activities, much like autonomous activities, due to the inner interest they possess. Further, Deci and Ryan (2000) state that autonomy must be fully supported in order for motivation to be intrinsic. If a person does not internalize an activity and does not solely engage in it for the interest and/or enjoyment of it, then the activity is less autonomous and more extrinsic in nature (Deci & Ryan, 2000). Autonomy is required in order to develop intrinsic motivation.

Competence does not refer to specific skill attainment but rather to the confidence and efficacy within action (Deci & Ryan, 2000; Ryan & Deci, 2002). Additionally, it is feeling effective in one's interactions and ongoing opportunities to display one's capacity (Deci & Ryan, 1975). This need, "leads people to seek challenges that are optimal for their capacities and to persistently attempt to maintain and enhance those skills and capacities through activity" (Ryan & Deci, 2002, p. 7). According to Deci and Ryan (2000) people need competence to develop any form of motivation. Further, if people satisfy competence through such measures as positive feedback, then they may increase their intrinsic motivation (Deci & Ryan, 1980; Vallerand & Reid, 1984). Through the development of competence, people can support and sustain intrinsic motivation.

Relatedness is caring for others, feeling cared for, and having a sense of belonging (Deci & Ryan, 2000; Ryan & Deci, 2002). Relatedness is not concerned with a certain outcome or formal status but rather the psychological sense of safely being with

others (Ryan & Deci, 2002). Although all three psychological needs bear similar importance, relatedness plays a more distal role in intrinsic motivation (Deci & Ryan, 2000). Deci and Ryan (2000) state, "a secure relational base appears to provide a needed backdrop—a distal support—for intrinsic motivation, a sense of security that makes the expression of this innate growth tendency more likely and more robust" (p. 235). However, to a lesser degree, supporting this psychological need helps to foster intrinsic motivation.

Intrinsic Motivation

"Perhaps no single phenomenon reflects the positive potential of human nature as much as intrinsic motivation" (Ryan & Deci, 2000, p. 70). Much like other aspects of human nature, intrinsic motivation is a very complex experience that influences behavior and emotions. Intrinsic motivation is complex because it is shaped by personal preferences such as goals, values, and culture, as well as context. Additionally, interest in a specific context in which one is immersed, greatly influences intrinsic motivation. As the individual psychological needs of autonomy, relatedness, and competence receive support, intrinsic motivation is enhanced. Due to the complex influence of personal interest and the context on motivation, it is important to examine all factors that could influence the development and sustainability of intrinsic motivation.

According to Ryan and Deci (2002), when a person engages in an activity solely due to individual interest or enjoyment, intrinsic motivation is developed. Additionally, when engagement is self-determined, intrinsic motivation subsists (Ryan & Deci, 2002). Thus, this implores inquiries into how intrinsic motivation can be developed if self-determination, interest, or enjoyment does not exist in the initiation of an activity. Ryan

and Deci (2000) state individuals can develop intrinsic motivation as they fulfill their inherent need to seek novelty and challenges through exploration and learning. Through "optimal challenges, effectance-promoting feedback, and freedom from demeaning evaluations" (Ryan & Deci, 2000, p. 58), one can foster intrinsic motivation. As individuals seek and fulfill challenges and begin to align them with their sense of self, they foster intrinsic motivation (Ryan & Deci, 2000). Positive feedback, which supports competence when autonomy is present, can also facilitate intrinsic motivation (Deci & Ryan, 1980; Vallerand & Reid, 1984). Csikszentmihalyi (1990) states that intrinsic motivation can be developed in any situation with complex, constructive, difficult, and challenging problems. He also identified four determinants that assist in the development of intrinsic motivation: (a) challenge, (b) sense of control, (c) deep attention, and (d) high motivation (Csikszentmihalyi, 1990). An individual develops enjoyment and intrinsic motivation when the challenge of the task is balanced with the efficacy of the individual (Csikszentmihalyi & Larson, 1984). If the individual perceives the challenge to be too high, frustration and doubt supersede enjoyment (Csikszentmihalyi & Larson, 1984). In addition, a sense of control is similar to self-efficacy or competence in that the individuals feel they can control their ability to address the challenges they face (Csikszentmihalyi, 1990). Deep attention is possible through complete focus on the task, and high motivation is attainable through the energy derived by the task (Csikszentmihalyi, 1990). As one experiences deep attention, optimal challenges, novelty, and autonomy, one can develop intrinsic motivation.

Although it is possible to foster intrinsic motivation, it is also possible to undermine intrinsic motivation. Research indicates a multitude of external deterrents that

can thwart intrinsic motivation, such as negative feedback (Deci & Ryan, 1975), tangible rewards (Deci, Koestner, & Ryan, 1999; Deci & Ryan, 1975), threats (Deci & Cascio, 1972), deadlines (Amabile, DeJong, & Lepper, 1976), directives (Koestner, Ryan, Bernieri, & Holt, 1984; Reeve, 2006), and competition pressure (Reeve & Deci, 1996). When external deterrents thwart autonomy, the motivation shifts from intrinsically to extrinsically driven. Because both personal interest and context can influence intrinsic motivation, the next section explores the literature within the context of Positive Youth Development (PYD) programs.

Positive Youth Development Programs

PYD stems from the conviction that youth are resources that can be developed (Roth & Brooks-Gunn, 2003). Adult practitioners within PYD perceive that youth can flourish from their experiences, are resilient in the face of challenges, and will enact change when provided the opportunity (Floyd & McKenna, 2003). The PYD perspective has risen out of the need to cater to the youth of today. As demographics within the youths' lives shift, such as dual-career families or single working parents, the question of how to positively support youth through community-based or other structured programs during their leisure time has received more emphasis (Lerner et al., 2005).

In order to enhance the well-being of youth, many PYD programs strive to fulfill the six essential features within a model of adult well-being. The model of adult well-being includes (a) self-acceptance, (b) positive relationship with others, (c) autonomy, (d) environmental mastery, (e) purpose in life, and (f) personal growth (Roth & Brooks-Gunn, 2003; Ryff, 1995). Additionally, PYD programs strive to develop youth habits

that will encourage healthy behaviors into adulthood such as engaging in physical activity, maintaining mental health, and avoiding injury and violence (Roth & Brooks-Gunn, 2003). In addition, PYD programs should provide (a) physical and psychological safety, (b) appropriate structure, (c) supportive relationships, (d) opportunities to belong, (e) positive social norms, (f) support for efficacy and mattering, (g) opportunities for skill building, and (h) integration of family, school, and community efforts (National Research Council, 2002; Roth & Brooks-Gunn, 2003). According to Catalano, Berglund, Ryan, Lonczak, and Hawkins (2004), PYD programs should also address one of the following objectives: (a) promote bonding; (b) foster resilience; (c) promote social, emotional, cognitive, behavioral, or moral competence; (d) foster self-determination; (e) foster spirituality; (f) foster self-efficacy; (g) foster a clear and positive identity; (h) foster a belief in the future; (i) provide recognition for positive behavior; (j) provide opportunities for prosocial involvement; and (k) foster prosocial norms. PYD programs also focus on developing positive adult–youth relationships within their structured activities (Lerner et al., 2005). Lastly, according to Lerner, Fisher, and Weinberg (2000), successfully designed and implemented programs should fulfill the *5 Cs* of developmental outcomes in youth: competence, connection, character, confidence, and caring. Through their inherent structure and the activities within them, PYD programs strive to fulfill many objectives to positively develop youth.

Although PYD programs seek to fulfill many objectives, researchers have found some specific program practices that influence program success. According to Roth and Brooks-Gunn (2003), successful programs set program goals that reflect the desired outcomes for the youth participants; develop a positive, caring, youth-centered

environment; and provide structured and unstructured activities that provide numerous opportunities for youth development. Catalano et al. (2004) found successful PYD programs addressed a minimum of five of their identified PYD program objectives. They also found successful programs had measurement procedures in place for both positive and problem outcomes, utilized structured curriculum, extended over a nine-month period or longer, assessed the overall program reliability, and served a wide variety of populations. McLaughlin (2000) discusses how successful PYD programs develop an intentional learning environment driven by knowledge development, program assessment, and youth centered activities. Successful PYD programs utilize several practices in common.

Within successful PYD programs, adult practitioners are crucial catalysts to engaging youth participants and meeting the desired outcomes. Adult practitioners play a key role in providing the level of social support and care that youth participants need (Eccles & Templeton, 2002). Eccles and Templeton (2002) also state that youth would be able to establish trusting relationships with these adults better than they would be able to with their classroom teachers. Larson (2000) states that adult practitioners of successful programs allow youth to make organizational decisions and that they provide opportunities for youth to problem solve within the context of their program. Larson and Walker (2010) discuss the importance for adults to provide challenges for youth while also supporting them and also how, in the absence of adult support, youth can flounder in the face of a challenge. Adult practitioners play a crucial role in the delivery and success of PYD programs.

When participating in successful PYD programs, youth experience many potential benefits. Related to personal development, Hansen et al. (2003) found youth experienced an increase in goal setting, problem solving, effort, and time management. They also found youth experienced interpersonal development related to increases in teamwork, social skills, feedback, and leadership (Hansen et al., 2003). Youth experience an increase in feeling challenged and enjoyment when they participate in PYD programs (Larson, 2000). Further, Larson (2000) states that youth can experience "a unique combination of intrinsic motivation and concentration that is rarely present during their daily experiences in schoolwork and unstructured leisure" (p. 178). He recognized that when the combination of intrinsic motivation and concentration is coupled with achieving a set goal, youth can experience diminished delinquency, increased achievement, and increased self-control and self-efficacy.

Intrinsic Motivation Within PYD Programs

Youth experience motivation to initiate engagement in PYD programs for various reasons. Seldom do youth enter a PYD program with a pre-existing sense of intrinsic motivation (Dawes & Larson, 2011). Often, youth experience extrinsic motivation to join PYD programs due to encouragement from their family, friends, or program leaders (Dawes & Larson, 2011). Although their initial participation can be extrinsically driven, youth can develop intrinsic motivation through the various activities and experiences within PYD programs.

Research indicates that youth develop intrinsic motivation through their PYD participation due to fun, exciting, and enjoyable challenges (Pearce & Larson, 2006). Additionally, youth experience more intrinsic motivation with increased effort when

engaged in after-school programs (Vandell, Shernoff, Pierce, Bolt, Dadisman, & Brown, 2005). Larson (2000) states that PYD programs develop a unique permutation of intrinsic motivation and concentration within youth participants. Immersion in projects that require the repeated use of deep, motivated attention can also foster intrinsic motivation (Larson & Rusk, 2010). Larson (2006) also emphasizes that developed intrinsic motivation also needs to be coupled "with support for its being activated in diverse domains of development, and support for its remaining activated as youth experience the obstacle course of everyday life" (p. 681). Thus, adult practitioners act as catalysts to develop and support the motivation of youth participants. Further, youth practitioners can provide motivational scaffolding as a mechanism to construct motivation. Exhibiting enthusiasm and conveying confidence in the youth can help to construct motivational scaffolding (Larson, 2006).

Specific factors within person–activity interactions shape intrinsic motivation within PYD programs. These factors focus on how youth interact during the PYD program activity and consist of novelty, sensory stimulation, a structure with clear models for action, difficultly levels that match or are slightly above the youth's ability, and scaffolding for difficult challenges (Csikszentmihalyi, 1990). Additionally, long-term factors determine whether youth will be engaged by an activity (Larson & Rusk, 2010). One long-term factor is the manner in which said activity supports youths' psychological needs of competence, relatedness, and autonomy (Larson & Rusk, 2010). Another long-term factor is the development or existence of one's dispositional interest in the activity (Larson & Rusk, 2010). Youths' goals, values, purposes, personal connections, beliefs, expectations, and culture can also shape intrinsic motivation (Larson

& Rusk, 2010). Lastly, Larson and Rusk (2010) suggest that the convergence of all long-term factors also shapes the development of intrinsic motivation within PYD programs.

Some of the most important proponents for the development of intrinsic motivation within PYD programs are the short- and long-term benefits that youth experience. Csikszentmihalyi and Larson (1984) state that one short-term product of intrinsic motivation in structured leisure activities is learning. According to Larson and Rusk (2010), as youth experience intrinsic motivation they utilize more cognitive strategies and can, "exercise more executive control to increase their learning effectiveness" (p. 97). Youth experience the ability to deeply process the activities and their associated learning outcomes when PYD programs develop interest and thus support intrinsic motivation (Larson & Rusk, 2010; Schiefele, 1991). Youth can also experience more regulated, expansive, and creative reasoning through the use of metacognitive strategies (Larson & Rusk, 2010). Lastly, youth can also experience a sense of control over the challenges presented to them, focused attention, and a sense of enjoyment and reward (Larson & Rusk, 2010).

In addition, youth can also experience many long-term benefits. Much of the short-term benefits related to intrinsic motivation concentrate on learning outcomes. When intrinsic motivation is sustained, these short-term benefits can accumulate into long-term benefits. Thus, researchers have noted a long-term increase in learning and school achievement (Larson & Rusk, 2010). Larson and Rusk (2010) have also observed increased general personal development over time, such as, "identity work, developing initiative, emotional development, and acquiring team-work and social skills" (p. 99). Through PYD participation, youth can experience prolonged activity-related interest,

engagement, and motivation (Simpkins, Davis-Kean, & Eccles, 2006; Larson & Rusk, 2010).

Support and Hindrance of Psychological Needs Support in PYD Programs

Within Self-Determination Theory (SDT), Deci and Ryan (2000) have identified three universal, innate psychological needs. These empirically supported psychological needs include competence, relatedness, and autonomy (Deci & Ryan, 2000). Intrinsic motivation and the sense of autonomy in adolescence decrease when adults demoralize the goals and/or activities the youth is participating in (Csikszentmihalyi & Larson, 1984). Csikszentmihalyi and Larson (1984) state that most adolescents struggle with developing a sense of autonomy and constant directions provided by adults will continually hinder this already difficult task. Within PYD programs, these universal needs can be supported or thwarted through various activities or actions.

Research indicates that PYD programs can support relatedness, competence, and autonomy. Regarding relatedness, youth can develop positive relationships with a diverse group of peers and a stronger connection within their community (Larson, 2000). Youth can also experience supportive and caring relationships with adult practitioners within their PYD program (Lerner, Phelps, Forman, & Bowers, 2009). According to Csikszentmihalyi and Larson (1984), within adolescents, friends can induce intrinsic motivation, a sense of freedom, and enjoyment. Regarding the need for competence, PYD programs can provide youth opportunities to develop and increase competence through the roles they can play within program design and implementation (Eccles & Gootman, 2002). Youth can also develop competences related to developing social connections, social skills, and teamwork (Hansen et al., 2003). Additionally, youth can

develop capabilities related to emotional, cognitive, and behavioral competency (Catalano et al., 2004). Further, youth can link the skills and competences developed within PYD programs to values, goals, and future career aspirations (Dawes & Larson, 2011). PYD programs can support the need for autonomy by allowing youth to engage in challenging materials, engage in program decision making, and hold leadership positions (Eccles & Gootman, 2002). Programs also provide opportunities for youth to experience independence and autonomy in a supervised and safe environment away from the context of their families (Eccles & Gootman, 2002). PYD programs simultaneously support individual psychological needs and/or concurrently work together to meet the psychological needs of youth. By allowing youth the opportunity to display their developed competences and developing a sense of belonging within their community, PYD programs meet their psychological needs (Battistich, 2008). Additionally, as youth gain more competence, their ability to be autonomous increases, and they may require the presence of autonomy to maintain intrinsic motivation (Larson and Rusk, 2010). Various PYD program mechanisms can support the psychological needs of youth.

Just as participation in PYD programs can support the psychological needs of youth, some actions may thwart these same needs. PYD programs with a hostile environment hinder relatedness and reduce intrinsic motivation (Larson and Rusk, 2010). One study has connected unstructured activities and absence of structure to decreased autonomy (Hamilton, Hamilton, & Pittman, 2004). Larson and Walker (2010) state, "leaders repeatedly encountered situations where they struggled with how to support youth's work without undermining them, and how to engender youth's motivation in an activity that involved hard work, unfamiliar tasks, and setbacks" (p. 342–343).

Although circumstances within PYD programs occasionally arise which thwart the psychological needs of youth, many benefits can arise when these needs are met. Research indicates that the needs of competence and relatedness are mediators between PYD program participation and life satisfaction (Leversen et al., 2012). Additionally, all three needs independently contributed to the youths' life satisfaction (Leversen et al., 2012). Within PYD, the want to fulfill these needs encourages youth to join and engage in PYD programs and activities (Dawes & Larson, 2011). Additionally, as programs meet these needs, the youth tend to maintain and increase their engagement (Dawes & Larson, 2011). As PYD programs meet the psychological needs of youth, they can develop intrinsic motivation (Deci & Ryan, 2000; Larson & Rusk, 2010). Although many benefits exist within PYD programs, SBAE program components expand beyond the realm of PYD to include formal classroom settings. The next section explores the literature encompassing the development of intrinsic motivation within the formal classroom setting.

Intrinsic Motivation Within Formal Classroom Settings

Much like PYD programs, youth can develop intrinsic motivation within formal classroom settings. According to Deci and Ryan (1985) intrinsic motivation occurs in classrooms when students' natural curiosity and interest drive their learning. However, intrinsic motivation within classrooms is more difficult to develop and sustain compared to PYD programs. Policymakers, administration, educators, and parents often view learning as extrinsically driven, and they often ignore intrinsic motivation in the learning process (Deci & Ryan, 1985). This is evident in the utilization of grades and managing behaviors based on predetermined social norms. Teachers focus more on the delivery of

content in formal classroom settings and not on developing interest and enjoyment in the content area (Csikszentmihalyi & Larson, 1984). Further, the circumstances in which schools ask students to operate within classrooms do not activate their interest or curiosity. Specifically, most students do not feel intrinsically motivated to sit quietly for extended periods of time or complete mundane homework assignments, and the curriculum presented to them is not inherently interesting or compelling (Deci & Ryan, 1985). As students age, their interest and intrinsic motivation decreases specifically in relation to the content areas of math, science, and reading (Gottfried, Fleming, & Gottfried, 2001). Lastly, the teachers' motivational orientation can greatly influence the classroom climate and resulting student motivation (Deci & Ryan, 1985). Due to the inherent structure and extrinsic nature of formal education, intrinsic motivation is difficult to foster within students.

Teachers can cultivate intrinsic motivation, although it is challenging to develop within formal classrooms. According to Csikszentmihalyi and Larson (1984), when teachers demonstrate their interest and intrinsic motivation within the subject, they can enhance curiosity and motivate students. Positive feedback can increase intrinsic motivation, whereas tangible rewards can decrease it (Deci & Ryan, 1975). Further, when classrooms and teachers provide students with optimal challenges, stimulating activities, and autonomy, they enhance intrinsic motivation (Deci & Ryan, 1985). Research also indicates that developing autonomy, competence, and goal mastery orientation may enrich intrinsic motivation (Young, 2005). Much like within PYD programs, when teachers give autonomy with no structure or support within a classroom, students will flounder (Deci & Ryan, 1985). This research further acknowledges the

need to properly support the psychological needs of students to develop intrinsic motivation.

Fostering intrinsic motivation leads to context-specific benefits. Research indicates a positive relationship between intrinsic motivation and achievement within classrooms and on standardized tests (Lepper, Corpus, & Iyengar, 2005). Research also indicates a marginal but positive relationship between intrinsic motivation and classroom learning (Lepper et al., 2005). Students who are more intrinsically motivated also utilize more self-regulated learning strategies (Young, 2005), are more likely to be cognitively engaged, and utilize a variety of cognitive strategies (Pintrich & De Groot, 1990). When teachers present academic activities as a means to fulfill intrinsic goals, rather than extrinsic goals, students experience deeper processing, increased understanding, and increased short- and long-term persistence (Vansteenkiste, Lens, & Deci, 2006).

Support and Hindrance of Psychological Needs in Formal Classroom Settings

A considerable amount of empirical evidence in formal education connects intrinsic motivation to autonomy support. According to Csikszentmihalyi and Larson (1984), youth experience the least amount of intrinsic motivation within settings where adults have the most control, such as school, work, and church. Research also indicates a student who has an autonomy-supportive teacher will be more intrinsically motivated than with a teacher who has a controlling orientation (Green & Foster, 1986; Reeve, 2002; 2009).

Even with evidence connecting autonomy support to intrinsic motivation, teachers typically employ more controlling teaching styles and instructional methods. Teachers tend to be more controlling because of the perceived power hierarchy held over students,

the dual burden of responsibility and accountability for learning, the association of structure and control, the controlling teacher performance evaluations, and the possible matches between controlling behaviors and their own motivational orientation (Reeve, 2009). While teachers do not overtly seek to be controlling, they tend to view student motivation in such an external way that teacher behaviors trend toward control over autonomy (Reeve, 2009). A classroom has a controlling environment when (a) students are expected to adopt only the teacher's perspective; (b) teachers intrude on the students' actions, thoughts, and emotions; and (c) teachers pressure students to act or think in a certain way (Reeve, 2009). Controlling instructional methods include (a) using directives, deadlines, incentives and threats; (b) physically holding the instructional/learning materials; (c) using controlling language, i.e., "you must do this" or "complete this worksheet"; (d) not allowing time for self-paced learning and demonstrating impatience for students to produce correct answers; and (e) negatively reacting to student complaints or negative emotions (Reeve 2002; 2009). When teachers adopt a controlling orientation and/or utilize controlling behaviors, they suppress students' intrinsic motivation (Deci & Ryan, 1985; Reeve, 2002; 2009).

Teacher autonomy-supportive behaviors in the classroom can improve student motivation. Autonomy-supportive behaviors include (a) listening more and encouraging students to ask questions, (b) providing time for self-paced learning, (c) using supportive language, (d) acknowledging students' ideas and thoughts, (e) acknowledging students' negative emotions, (f) providing choices, and (g) providing hints, not answers (Reeve, 2002). Further, it is crucial for students to feel as if they have a voice and a choice within the classroom (Niemeic & Ryan, 2009). Teachers can change paradigms from

controlling to autonomy-supportive behaviors (Reeve, 2002; 2009). This transition can occur by identifying their own motivational orientation and examining their beliefs about student motivation. Additionally, the teacher needs to have the desire to change their current behaviors and possess a felt need to learn how to be more autonomy supportive, and the teacher must utilize the various autonomy-supportive instructional activities (Reeve, 2002; 2009).

Learners in more autonomy-supportive classrooms have an increased interest in content/learning activities, engagement, intrinsic motivation, and curiosity (Reeve, 2002; 2009). Students under autonomy-supportive teachers have a higher perceived level of competence (Ryan & Grolnick, 1986). Students also experience greater academic achievement and have higher conceptual understanding of content (Boggiano, Flink, Shields, Seelbach, & Barrett, 1993). Further, when students experience autonomous motivation, they experience more positive emotions, higher self-worth, and higher competence (Ryan & Grolnick, 1986).

Formal classroom settings can support students' psychological needs of competence and relatedness. When students experience relatedness within the classroom, they tend to internalize the monotonous and unenjoyable tasks associated with learning (Niemiec & Ryan, 2009). Thus, teachers should focus on developing close adult–student relationships (Deci & Ryan, 2000; Niemiec & Ryan, 2009). Additionally, knowledgeable, skilled, and caring teachers foster student engagement (Christenson, Reschly, Appleton, Berman-Young, Spanjers, & Varro, 2008). Teachers can support students' competence by providing tasks that fall into the optimal challenge domain for each student, and providing appropriate feedback enhances efficacy (Niemiec & Ryan,

2009). Further, it is crucial for teachers to provide the appropriate feedback and skills needed to develop and maintain the students' efficacy and thus their competence (Niemiec & Ryan, 2009). Classrooms that provide students with multiple avenues to achieve competence lead to increased motivation and engagement as well (Christenson et al., 2008).

According to Csikszentmihalyi and Larson (1984), direct adult socialization is relatively rare within the classroom setting. When students do not experience relatedness, they tend to externally view the learning tasks and only respond to external incentives or controls (Niemiec & Ryan, 2009). According to Deci, Vallerand, Pelletier, and Ryan (1991), when teachers provide negative feedback, the perceived level of competence can decrease. If students perceive the positive feedback as controlling rather than informative, it can thwart the students' autonomy and competence (Ryan, 1982).

According to Niemiec and Ryan (2009), students for whom all three psychological needs are met experience increased intrinsic motivation, willingness to engage in less enjoyable tasks, and valuing of academic activities. With this, students experience higher-quality learning outcomes, increased wellness, and a greater perceived value of school (Niemiec & Ryan, 2009). Further, intrinsic motivation increases as warm and caring teachers meet the students' need of relatedness (Ryan, Stiller, & Lynch, 1994). Research also indicates that when the classroom setting meets all three psychological needs the students' school-related subjective well-being increases (Tian et al., 2014). Additionally, the supported need for competence is a particularly strong predictor of school-related subjective well-being (Tian et al., 2014).

Intrinsic Motivation and Psychological Needs with SBAE Programs

SBAE literature reflects a dearth of investigations conducted regarding developing intrinsic motivation through youth participation. Similar to PYD literature, research indicates youth join and participate in SBAE primarily due to external factors such as peer encouragement, personal gain, and social competence (Phelps et al., 2012). Additionally, awards externally motivate students to begin engaging in supervised agricultural education (SAE) projects, but after their first year of participation they can experience more internal motivation through their developed interest in their SAE area (Bird et al., 2013). SBAE students participate in service-based activities such as the National FFA Days of Service due to their interest in them (Roberts et al., 2016). Students experience an internal locus of causality and continued participation when participating in FFA civic engagement activities (Bird, 2012). Lastly, according to Ball et al. (2016), the development of intrinsic motivation is a key component to successful career development event (CDE) preparation. Beyond investigating specific areas or activities within SBAE programs, there is a lack of literature investigating the development and sustainability of intrinsic motivation. Additionally, no specific investigations exist to identify the strategies utilized within the classroom or other components of SBAE programs to support and sustain intrinsic motivation.

Similarly, the SBAE literature around the support of youths' psychological needs is also lacking. Regarding the need for autonomy, Ball et al. (2016) found that during CDE preparation SBAE teachers would provide choices (autonomy) to students in regard to the content they would study and the ways in which it would be taught. Additionally, students experience volition when participating in general FFA civic engagement

activities (Bird, 2012). However, when participating in service activities such as the National FFA Days of Service, a lack of perceived choice existed; thus, students should be provided more choices to increase autonomy (Roberts et al., 2016). Concerning the need for relatedness, SBAE programs provide students with adult support and the ability to develop friendships and positive peer groups (Witt et al., 2013). Regarding competence, no existing studies have investigated students' perceived cognitive competence within or outside of the SBAE classroom. Literature does indicate that through SBAE participation students are able to develop social competence (Phelps et al., 2012). The existing literature around SBAE students' psychological needs is severally lacking in scope. Very few studies investigate the three psychological needs separately, and currently no studies exist that look at them as an entire paradigm. Further, no studies exist that strive to identify strategies or actions which support these needs within SBAE programs.

Review of Literature Summary

Intrinsic motivation is a complex human phenomenon which is deeply context specific. Intrinsic motivation is engaging in an experience or activity for its sole enjoyment or interest. Individuals foster intrinsic motivation when they strive for optimal challenges and novelty. The presence of positive feedback, autonomy, and constructive and challenging problems can also foster intrinsic motivation. Negative feedback, deadlines, tangible rewards, threats, and directives can all undermine intrinsic motivation.

Positive Youth Development (PYD) is a framework in which youth engage in various programs that strive to enhance the lives of youth. PYD programs engage youth in various activities that strive to develop a variety of positive attributes such as intrinsic

motivation. PYD operates under the assumption that youth are resources that can be developed, and PYD programs strive to fulfill many objectives centered on positive social interactions, developing competence, and interpersonal skills. Successful PYD programs strive to create a positive, caring environment that is driven by clear goals and guided by purposeful curriculum. Within the PYD context, adult practitioners are key catalysts to achieving the desired outcomes for youth. Lastly, youth can experience many benefits when engaging in PYD programs such as interpersonal development, creating positive relationships, and fostering intrinsic motivation.

Although intrinsic motivation is a desired outcome of PYD programs, many youth begin their participation due to extrinsic factors and later develop intrinsic motivation. Youth develop intrinsic motivation, along with simultaneous deep concentration, due to the fun and enjoyable challenges they face in PYD programs. Short-term determinants such as novelty and scaffolding of difficult tasks and long-term determinants such as supported psychological needs help to shape the intrinsic motivation within PYD programs. As intrinsic motivation grows, youth can experience many benefits such as sustained motivation, sustained engagement, deeper processing, an increase in the use of cognitive strategies, and higher academic achievement.

As a determinant of intrinsic motivation, PYD programs strive to facilitate the support of youths' psychological needs. The development of positive adult relationships and friendship can support the psychological need of relatedness, but a hostile program environment can thwart this need. Presenting optimal challenges and decision-making opportunities to youth supports the need for autonomy, but a lack of support or proper supervision of these challenges can thwart this need. Youths' ability to demonstrate

their developed skills and engage in social norms meets the need of competence. As they meet these psychological needs, students can experience increased life satisfaction, program participation, and intrinsic motivation.

Much like PYD programs, formal education classrooms can foster intrinsic motivation, but the development and sustainability of it is more difficult. Additionally, the individuals making decisions within the classroom typically disregard intrinsic motivation. Developing students' interest and curiosity fosters intrinsic motivation. This can be done by the teacher displaying interest within their subject, providing positive feedback, and presenting stimulating challenges to students. Classrooms typically do not foster intrinsic motivation because students are not interested in the subject area, tangible rewards are consistently provided, negative feedback is given, and the teacher has a controlling motivational orientation. When the classroom supports intrinsic motivation, students can experience increased classroom achievement, self-regulating strategies, and deeper processing.

Although supporting the psychological needs of students is beneficial, teachers still tend to be more controlling than autonomy supportive. This is due to the higher social status they possess, their accountability and responsibility to teach, and the ways in which they are evaluated. A controlling teacher tends to force students to adapt to the teacher's perspective, intrude on students' thoughts and feelings, and pressure students to act a certain way. Additionally, controlling teachers tend to use more directives and directions, to use more controlling language, and to not allow for self-paced learning. Although teachers tend toward a more controlling orientation, they can learn autonomy-supportive behaviors. These behaviors include listening more, allowing for self-paced

learning, providing choices, and acknowledging students' thoughts and ideas. When student autonomy is supported, the students experience an increase in interest, engagement, and curiosity in the subject. Beyond the need for autonomy, caring teachers who develop strong adult–student relationships can meet the need for relatedness. A lack of adult socialization with students can also thwart this need in the classroom. Teachers can meet the need for competence through providing optimal challenges with positive feedback, whereas negative feedback can thwart it. As teachers meet all three of these psychological needs, students can experience an increase in intrinsic motivation, enjoyment, and interest in the tasks provided, as well as school-related subjective well-being.

Within SBAE programs a unique combination of a PYD program and formal education exists. Within SBAE literature little empirical evidence subsists that investigates the fostering of intrinsic motivation and the supporting of psychological needs of youth. Regarding intrinsic motivation, students participate in SAE programs and service-related activities due to their interest in it. Intrinsic motivation is also a crucial part of CDE preparation. Providing choices to students and supporting their autonomy is also a crucial part of CDE preparation. Within service-related activities a lack of autonomy support exists. Lastly, FFA participation provides positive adult support and allows for development of positive peer groups.

There is an astonishing amount of support for the development and support of intrinsic motivation and psychological needs within both PYD programs and formal classrooms. Yet, both of these human phenomena remain thwarted or forgotten within these contexts. Further, within SBAE literature very few investigations have attempted to

determine if and/or how programs support intrinsic motivation and psychological needs. However, SBAE programs seem to provide a unique experience in which they can support intrinsic motivation and psychological needs through the combination of PYD and formal education. There is a need to conduct investigations to determine whether youths' this context supports intrinsic motivation and psychological needs and what day-to-day strategies the SBAE adult practitioners utilize.

CHAPTER 3—METHODOLOGY

Purpose of the Study

The purpose of this study was to identify the strategies, actions, and processes SBAE teachers utilize to support the psychological needs of students and thus develop the students' intrinsic motivation. This study will investigate strategies utilized both within and outside the agricultural classroom.

Research Objectives and Questions

Objective:

1. Describe the support of the SBAE students' psychological needs within the SBAE program.
2. Describe the students' perceived intrinsic motivation within the SBAE program.
3. Describe the autonomy-supporting orientation of the SBAE teachers.

Questions:

1. What strategies do the SBAE teachers perceive as the most supportive of the students' psychological needs?
2. Which strategies utilized by the SBAE teachers do the students perceive as the most supportive of their psychological needs?
3. What strategies that support the psychological needs of students do the SBAE teachers utilize within the SBAE program?

Convergent Question:

What actions and processes that the SBAE teachers utilize within and outside of the SBAE classroom support the psychological needs of students and thus develop students' intrinsic motivation?

Research Design

This study utilized a mixed-methods exploratory sequential design quan ➔ QUAL (see Figure 2). Traditionally within a mixed-methods exploratory sequential design, the qualitative methodology precedes the quantitative methodology, with an emphasis being placed on the qualitative methodology (Tashakkori & Teddie, 2010). My dissertation was exploratory in nature due to the lack of literature regarding the actions and strategies which support psychological needs and intrinsic motivation within SBAE programs. Additionally, I placed emphasis on the qualitative methodology because the grounded theory methodology best complemented the research questions. However, due to the pre-existing literature around Self-Determination Theory (SDT) and the ways in which to best measure motivation, this study diverged from the traditional design of an exploratory sequential study. I collected quantitative data first to account for the pre-existing literature and to measure the motivation of students. I collected qualitative data second to best capture the actions and practices of the SBAE teachers. First, I collected quantitative data through the use of questionnaires focusing on the perceived support of students' psychological needs, students' experiences of intrinsic motivation, and teachers' orientation toward controlling or autonomy support. Then I collected qualitative data through the use of grounded theory interviews and field observations. The quantitative data helped to develop and guide the qualitative interviews along with select the FFA activities to be observed. The results from the quantitative questionnaires

helped to sample students within the population, identify potential areas of observation, and develop probing interview questions.

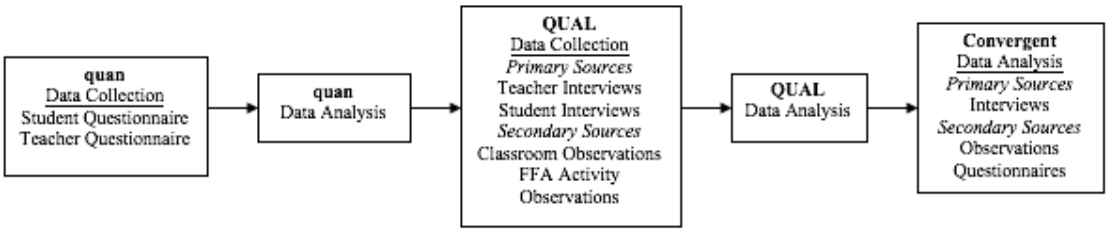

Figure 2. Analytical model of methodology.

I approached this mixed-methods ground theory using a pragmatist epistemology. When approached through a pragmatist lens, the research focuses on the problem being studied and the activities, context, and consequences within the problem (Creswell, 2013). A pragmatist epistemology is appropriate for this study due to the desire to identify whether specific actions and/or strategies exist which help to support the students' psychological needs and intrinsic motivation. Additionally, Donovan (2013) suggests, "researchers [should] spend time in practice settings more routinely in order to observe and articulate problems of practice for which research knowledge can contribute potential solutions" (p. 318). Educational researchers must first identify the right problem, construct effective solutions, and finally connect current practitioners with the identified effective solutions (Donovan, 2013).

Positionality Statement

It is important for a researcher to identify the positionality and bias he or she possesses and their potential influence on the research being conducted (Creswell, 2013). Prior to entering graduate school, I was a SBAE teacher and FFA advisor in central

Missouri. Through these experiences, I have developed a position and/or bias regarding certain components within the agriculture classroom and FFA chapter. Within the classroom, I utilized specific curriculum resources, teaching methods, and behavior management techniques. This could narrow the lens in which I view the classroom strategies utilized and the student–teacher interactions within the classroom. As a high school FFA member, I participated in many Career Development Events (CDEs) at both the state and national levels. This participation motivated me to become an SBAE teacher and drove me to encourage CDE participation in my own students. This drive, along with the drive to positively develop the FFA members within my FFA chapter, motivated me to focus on specific activities such as community service projects, CDEs, leadership development conferences, and award applications. Again, this bias could narrow the lens in which I view the FFA activities and strategies utilized within them.

Also, through the various professional organizations I participated in and the FFA activities I supervised as an SBAE teacher, I have engaged with many other SBAE teachers within the state. Through these interactions I could potential develop a bias toward the SBAE teachers and their FFA chapters. This could potentially influence how I identify and sample SBAE teachers. Thus, it is important to identify and follow the purposive sampling technique to control for this bias.

Participants and Sampling

In order to identify the population to be sampled, a frame of SBAE teachers was identified through the Missouri Agricultural Education Directory ($N = 517$; Missouri Department of Elementary and Secondary Education, 2016). Within the identified frame, this study utilized purposive sampling (Creswell, 2013) to identify the SBAE teachers (*n*

= 5; see Table 1) who best embodied the process of developing and supporting the psychological needs of their students. Teachers were purposively sampled who taught five or more years of agricultural education, utilized a variety of curricular resources within a variety of classroom and laboratory settings, advised a successful FFA chapter, and were located within 150 miles of the University of Missouri. Permission to conduct research was obtained from each teacher's administration. All teacher participants completed a consent form before they began their participation (see Appendix A).

Table 1
Teacher Participant Demographics

School Number	Teacher Number	Pseudonyms	Age	Sex	Certification Type	Years Teaching SBAE	Number of Teachers in Program
S1	T1	Robin	35	Female	Traditional	14	2
S2	T2	Laura	42	Female	Traditional	7	2
S3	T3	Kate	29	Female	Traditional	7	1
S4	T4	Steven	34	Male	Traditional	12	2
S5	T5	Kyle	29	Male	Traditional	7	6

To identify the student population within the teacher participants' school who were asked to complete the quantitative questionnaire, a frame was collected by obtaining the FFA roster from each teacher. Additionally, classroom rosters of the participating teachers were obtained and cross checked against the FFA roster. The resulting frame identified the FFA members enrolled within the teacher participants' courses (N = 368). All FFA members within the identified frame were shown a pre-recorded recruitment video and a recruitment packet including a recruitment letter (see Appendix B), parent consent form (see Appendix C), and student assent form (see Appendix D). Following the collection of parent consent and student assent forms, the resulting consenting sample

was n = 245 with a response rate of 67%. The consenting sample who provided a completed quantitative questionnaire resulted in the final usable data sample of n = 223 with a response rate of 61%.

Descriptive statistics such as percentages and frequency counts were utilized to describe the student respondents' demographic characteristics such as sex, year in school, and future career aspirations (see Table 2). Descriptive statistics were also utilized to describe student respondents' FFA participation such as FFA conventions and leadership conferences attended, officer positions held, CDEs, LDEs, agriscience fairs, and livestock exhibitions participated in (see Table 3). From the 223 respondents, 103 were male (46.19%) and 120 were female (53.81%). Additionally, 106 respondents were freshman (47.53%), 41 respondents were sophomores (18.39%), 42 respondents were juniors (18.83%), and 34 respondents were seniors (15.25%). Fifty-three respondents have attended National FFA Convention (23.77%), 29 had attended a state FFA convention (13.00%), seven had attended district level convention (3.14%), 10 had attended an area level convention, and 15 had attended a convention at the local level (6.73%). One hundred-nine respondents had not attended any FFA conventions (48.88%). Related to FFA offices held, 41 respondents had held offices at the local level (18.39%), four respondents had held area offices (1.79%), and 178 participants had held no offices at all (79.82%). A majority of respondents did not attend any leadership conferences (n = 89; 39.91%). The respondents who did attend leadership conferences primarily attended conferences at the area level (n = 41; 18.39%). The remaining respondents attended leadership conferences at the local (n = 19; 8.52%), district (n = 36; 16.14), state (n = 24; 10.76%), and national level (n = 14; 6.28%). From the 223 respondents, a majority of

students participated in CDEs at the state level (n = 35; 15.69%). Additionally, 26 participated in CDEs at the local level (11.66%), 11 participated at the area level (4.93%), 19 participated at the district level (8.52%), and 6 participated at the national level (2.69%). One hundred-twenty-six respondents had not competed in CDEs at any level (56.50%). Similarly, to the CDE participant, a majority of the student respondents did not participate in LDEs at any level (n = 139; 62.33%). The respondents who did participate in LDEs primarily participated at the area level (n = 28; 12.56%). The remaining respondents participated in LDEs at the local (n = 19; 8.52%), district (n = 21; 9.42%), state (n = 13; 5.83%), and national levels (n = 3; 1.35%). Agriscience fairs were the least participated in FFA activity with 192 respondents (86.10%) no participating at any level. Students who did participate in agriscience fairs, primarily participated at the local level (n = 14; 6.28%). The remaining respondents participated in agriscience fairs at the area (n = 1; 0.45%), district (n = 7; 3.14%), state (n = 6; 2.69%), and national levels (n = 3; 1.35%). A majority of respondents also had not exhibited livestock at any level (n = 154; 69.09%). Those who did participant in livestock exhibitions primarily did so at the state level (n = 22; 9.87%). Other livestock exhibitions were participated in at the local (n = 20; 8.97%), area (n = 13; 5.83), district (n = 8; 3.59%), and national levels (n = 6; 2.69%). A majority of the respondents identified agriculture as the future career area they wish to seek (n = 62; 27.80%). Following agriculture, the next highest career areas was unknown/undecided (n = 57; 25.56%). The remaining career areas were as follows health/medical (n = 52; 23.32%), engineering (n = 15; 6.73%), business and sales (n = 11; 4.93%), law enforcement (n = 10; 4.48%), education (n = 6; 2.69%), computers/technology (n = 5; 2.24%), and military (n = 5; 2.24%).

From the final usable data sample, I purposively sampled students for the qualitative interviews (n = 15). For each teacher participant up to five students were interviewed. Within the interview sample, I selected students to establish maximum variation (Corbin & Strauss, 2015) based upon the perceived level of needs support within the SBAE program, grade level, sex, future career interests, and FFA involvement. Student interview participants will be referred to by their researcher assigned participant code.

Quantitative Methodology

Data Sources and Instrumentation

Multiple quantitative data sources were utilized to capture student motivation, teacher orientation, and guide the qualitative methodology (see Appendix E). All quantitative data sources were utilized as ancillary sources. To begin data collection, teachers completed a questionnaire to determine the level to which they were controlling or autonomy supportive. As an ancillary data source, the questionnaire data provided a general view of the teachers' orientation, were utilized as a lens to view the field observations, were utilized as guidance for interviews, and guided the selection of the beginning interview questions. Additionally, students completed a questionnaire to identify the level of support for their psychological needs and examples of intrinsic motivation within their SBAE program. As an ancillary data source, the questionnaire data provided a general view of motivation, examples of intrinsic motivation, interest, and flow, were utilized as a lens to view the field observations, aided in the identification of potential student interviewees, were utilized as guidance for interviews, and guided the selection of the beginning interview questions.

Quantitative Instruments

I utilized quantitative instruments to capture the students' perceived level of psychological needs support and examples of intrinsic motivation within their SBAE program (see Appendix F). To collect student data related to psychological needs support, I utilized the Basic Psychological Needs Scale (BPNS; Deci, & Ryan, 2006). The BPNS measures the degree which students' psychological needs are satisfied and consisted of the constructs: relatedness, competence, and autonomy. The BPNS is a widely used, previously developed instrument, but the developing researchers do not report Cronbach's alpha. To collect examples of intrinsic motivation, flow, and interest, I developed qualitative open ended questions which asked students to reflect on experiences within their SBAE program. An open ended question was, "Tell me about a time when you were so interested in what you were learning in your agricultural class, that you chose to learn more about the subject after class". The BPNS instrument and open ended questions were combined into one questionnaire. Within the questionnaire I asked students to reflect on their perceived level of needs support and self-determined motivation within the SBAE program and in their daily lives. Additionally, the student questionnaire also contained demographic questions.

Additionally, I utilized a quantitative questionnaire to determine the teachers' autonomy orientation (see Appendix G). To collect teacher reports related to their orientation to support or thwart autonomy, I used the Problems in Schools instrument (PIS; Deci, Schwartz, Sheinman, & Ryan, 1981). The PIS measured the degree to which teachers tend to be autonomy supportive versus controlling. The PIS has a reported Cronbach's alpha of 0.63 or above for all constructs. A secondary study conducted by

Reeve, Bolt, and Cai (1999) found that the moderately autonomous construct did not correlate with an autonomy supportive orientation. Within the study, it was also found that the reliability of the highly controlling, moderately controlling, and highly autonomous constructs was confirmed (Reeve et al., 1999). Thus, the moderately autonomous construct was withheld from the data analysis process. Along with the PIS instrument, the questionnaire presented demographic questions.

Quantitative Data Collection

First, I collected quantitative data through the use of online questionnaires. The students completed the BPNS instrument and researcher developed open ended questions. The SBAE teachers completed the PIS instrument. Following the quantitative data collection, I collected qualitative data through interviews and field observations.

FFA members with signed parent consent and student assent were asked to partake in an online questionnaire. The online questionnaire consisted of the BPNS and researcher developed open ended questions, along with demographic questions. The BPNS instrument included a seven-point Likert scale that included the following anchors: 1: not at all true, 4: somewhat true, and 7: very true. For the BPNS instrument I asked students to reflect on their experiences within their SBAE classes, FFA chapter, and life away from the SBAE program. The researcher developed open ended questions which asked students to reflect on experiences within their SBAE program in which they experienced intrinsic motivation, interest, and flow. The demographic questions related to sex, grade level, participation in various SBAE activities, future career aspirations, and amount of contact with the SBAE teacher. To administer the questionnaires, I provided the teachers with the questionnaire link and the students' coded participant numbers. The

questionnaires were taken by students during their SBAE class. To account for student absences, the teachers administered the questionnaires two additional times.

I asked the sampled teacher participants (n = 5) to participate in an online questionnaire. The teacher online questionnaire consisted of the PIS instrument, along with demographic questions. The PIS instrument included a seven-point Likert scale that included the following anchors: 1: very inappropriate, 4: moderately appropriate, and 7: very appropriate. The PIS instrument asked the teachers to read, reflect, and respond to pre-developed school-based scenarios. The demographic questions related to sex, age, and certification type. I collected other demographic information from the Missouri Agricultural Education Directory (Missouri Department of Elementary and Secondary Education, 2016), and this information included the number of years teaching agricultural education and the number of teachers in their SBAE program. I sent the questionnaire links via email to teachers along with their participant codes. I sent five reminder emails including the questionnaire link once a week until all sampled teachers completed the questionnaire (Dillman, Smyth, & Christian, 2014).

Quantitative Data Analysis

I analyzed the quantitative instrument data using descriptive statistics. The BPNS student data were analyzed using mean and standard deviation for each of the psychological need constructs within the SBAE program and the students' daily lives. To categorize the students perceived needs support I developed real limits (Fife-Schaw, 2006). Real limits are boundary values which researchers set to separate the intervals of the approximate value of continuous variables (Fife-Schaw, 2006). The real limits I set for the student need support were: score of 1.00 to 1.50 was considered highly thwarted,

1.51 to 2.50 was considered thwarted, 2.51 to 3.50 was considered slightly thwarted, 3.51 to 4.50 was considered neutral, 4.51 to 5.50 slightly supported, 5.51 to 6.50 supported, and 6.51 to 7.00 highly supported. For each school the frequency of each category were reported. The instrument-based qualitative open-ended questions were analyzed using line by line coding with the emerging codes being developed into categories. As ancillary data sources the student data analysis provided a general view of student motivation, provided a lens to view the field observations, and guided the interviews. The teacher data were analyzed using the mean score for each of the autonomy and controlling constructs. The real limits I set for the teacher orientation perception means were: 1.00 to 1.50 was highly inappropriate, 1.51 to 2.50 was inappropriate, 2.51 to 3.50 was slightly inappropriate, 3.51 to 4.50 was neither inappropriate or appropriate, 4.51 to 5.50 was slightly appropriate, 5.51 to 6.50 was appropriate, and 6.51 to 7.00 was highly appropriate. The teacher orientation perception mean scores where then inputted into the following equation: Teacher Orientation = 2(Highly Autonomous *M*) + 0(Moderately Autonomous *M*) – 1(Moderately Controlling *M*) – 2(Highly Controlling *M*) (Reeve et al., 1999). Within the algebraic sum a positive higher score reflects a more autonomous orientation and a lower positive score or a negative score reflects a more controlling orientation (Deci et al., 1981; Reeve et al., 1999). To categorize to teachers' orientations real limit scores of -4 and below was considered highly controlling, -3.9 to -2 was considered moderately controlling, -1.9 to 0 was considered moderately autonomous, and 0.1 and above was considered highly autonomous.

Validity

Due to the pre-existing nature of the quantitative instruments utilized, the developing researchers have already addressed face and construct validity. To address content validity of all instruments within this study, I consulted a panel of experts (n = 4). The members of the panel held expertise in the areas of SBAE, formal education, PYD programs, motivation, statistics, qualitative methodology, and quantitative methodology.

Reliability

Since researchers had previously developed the instruments, many of the reliability estimates were pre-existing. For the teacher questionnaire, the PIS instrument has a reported Cronbach's alpha o of 0.73 for the highly controlling construct, 0.71 for the moderately controlling construct, 0.63 for the moderately autonomous construct, and 0.80 for the highly autonomous construct. The reliability of the for the student questionnaire despite the BPNS's wide use, the developing researchers did not report Cronbach's alpha. A pilot study was conducted with a representative sample of SBAE students (n = 26) not included in the data collection. The Cronbach's alpha for the autonomy construct was found to be 0.79, the relatedness construct was 0.71, and the competence construct was 0.79.

Reliability estimates were calculated for the current studies sample. The PIS instrument (n = 5) had a Cronbach's alpha of 0.55 for the highly controlling construct, 0.76 for the moderately controlling construct, 0.91 for the moderately autonomous construct, and 0.84 for the highly autonomous construct. While the sample size is limited, caution should be utilizing when interpreting data from the highly controlling construct. The BPNS instrument (n = 221) had a Cronbach's alpha of 0.60 for the

autonomy construct, 0.77 for the relatedness construct, and 0.74 for the the competence construct. Due to the exploratory nature of this study, the autonomy construct was deemed acceptable by meeting the Cronbach's alpha threshold of 0.60 (Hair, Anderson, Babin, & Black, 2010; Nunnally, 1967).

Qualitative Methodology

Data Sources

Qualitative Field Observations

To observe the actions, processes, and strategies the SBAE teachers utilized to support the students' psychological needs, I conducted 28 hours of field observations. Field observations allowed for the observation of the day-to-day practices of the SBAE teachers (Creswell, 2013). For each teacher participant, I conducted one half-day (4 class periods) of classroom observations due to the numerous variables which could influence a teacher's behavior or strategies utilized. This allowed me to examine the action and strategies utilized based on the variation in students, classroom setting, course content, curriculum, and teaching methods. Additionally, I observed one FFA activity per teacher participant. From the quantitative data, the most prominent interest and flow fostering FFA activities were observed. These activities included monthly FFA meetings, community service projects, agriculture advocacy programs, and CDE practices. I videotaped all classroom and FFA observations and completed field notes through the use of observational organizers.

For all observations I wrote detailed field notes to capture the action and strategies utilized within the SBAE classroom and during the FFA activities. I

documented field notes on observational organizers that I developed (see Appendix H and I). To assist with the utilization of the observational organizers, operational definitions were developed (see Appendix J). Beyond identifying the actions and strategies utilized by the SBAE teachers, I documented the student-to-student and student-to-teacher interactions and any additionally circumstances within these contexts. The field notes also documented any interactions or behaviors which were not captured on the videotape. Lastly, I also documented my initial reactions and any initial emerging codes for each observation.

Qualitative Teacher Interviews

I conducted qualitative interviews with all teacher participants (n = 5). I conducted these one-on-one semi-structured interviews following the classroom and FFA observations. All teacher interviews lasted between 40 minutes to 1 hour and 4 minutes. I asked the teachers to reflect on their motivational orientation, their thoughts regarding how students are best motivated, observed actions and strategies within the classroom, observed actions and strategies utilized during FFA activities, and student behaviors based on the observed actions and strategies. An example teacher interview question would be "How do you build relationships with students in the classroom?" A sample teacher interview protocol was included within the appendices (see Appendix K). The interview questions asked did evolve as the theory emerged within the data (Corbin & Strauss, 2015).

Qualitative Student Interviews

I also conducted qualitative interviews with student participants (n = 15) following the classroom and FFA observations. These were one-on-one, semi-structured interviews. All student interviews lasted between 13 to 34 minutes. I asked the students to reflect on their motivational orientation, how they are best motivated, how they were motivated or discouraged by the observed actions and strategies utilized by teachers within the classroom, how they were motivated or discouraged by the observed actions and strategies utilized by teachers during FFA activities, and their motivation within the SBAE program compared to other classes and school-based organizations. An example student interview question would be "Tell me about a time your agriculture teacher gave you a choice related to a class assignment or FFA activity. How did this make you feel?" A sample student interview protocol was included within the appendices (see Appendix L). The interview questions evolved as the theory emerged within the data (Corbin & Strauss, 2015).

Qualitative Interview Memoing

Following the completion of each qualitative interview, I conducted memoing (see Appendix M and N). Memoing is a key component to grounded theory research and focuses on capturing the researchers' ideas regarding the evolving theory through open, axial, and selective coding (Corbin & Strauss, 2015; Creswell, 2013). The memos included my initial ideas, thoughts, and reactions to the individual interview and how the interview supports, refutes, or alters the evolving theory. Additionally, the memos also included quotes, emerging open codes, connections to existing codes, and visual representations of the evolving theory.

Qualitative Data Collection

Following the quantitative data collection and analysis, I conducted qualitative observations and interviews. I observed the teachers both within the classroom and during FFA activities. I interviewed both teachers and students following the observations. Additionally, the quantitative instrument data helped shape the interview questions through the identification of the teachers' motivational orientation and support or hindrance of the students' psychological needs and intrinsic motivation.

I conducted observations for all teacher participants within the SBAE classroom and during FFA activities. These observations sought to collect data regarding the actions and strategies utilized within the various activities within SBAE programs. For all observations conducted, I developed and followed an observational protocol. Within the protocol the length of the activity dictated the length of the observation. For example, for a classroom observation, the length of the observation lasted from the end of the previous class to the end of the observed class. Additionally, for a FFA activity observation, the length of the observation lasted from the point the FFA advisor and/or FFA officers began preparation prior to the start of the event and ended after all students left the activity. Within the observational protocol, I developed and utilized observational organizers to document the observed behaviors. I developed and utilized one organizer when documenting within the classroom, and I developed and utilized another during the FFA activity observations. I designed each organizer to document the observed behaviors at five-minute increments and to account for the varying length of the observations. The existing literature reflects little knowledge regarding the specific strategies adult practitioners utilize related to supporting youths' psychological needs and

developing intrinsic motivation within the PYD context. Due to this, the developed FFA observational organizer was inductive in nature and allowed for complete emergence by providing blank categorized spaces for the documentation of observed strategies within the four areas of competence, relatedness, autonomy, and intrinsic motivation. Within formal education literature, there is little knowledge about specific strategies utilized within the classroom that support the students' psychological needs and developing intrinsic motivation. Due to this, the developed classroom observational organizer was inductive in nature and allowed for complete emergence by providing blank categorized spaces for the documentation of observed strategies within the three areas of competence, relatedness, and intrinsic motivation. The literature has identified many research-supported strategies which either support or thwart student autonomy. Due to this, the classroom observational organizer included these identified behaviors and allowed for frequency counts when these were observed. Additionally, I also included blank space within the organizer for emerging autonomy behaviors. The organizer also allowed for additional field notes to be documented throughout the observations.

I conducted one-on-one interviews with both teacher and student participants following the completed observations. These interviews were semi-structured in nature and evolved as the theory emerged. I took notes during the interviews and completed memos following each interview.

Qualitative Data Analysis

For the qualitative portion of this mixed-methods study, the data collection and analysis occurred simultaneously (Corbin & Strauss, 2015). Due to the grounded theory methodology, the teacher and student interviews were the primary data sources. The

classroom and FFA activity observations were ancillary data sources. I utilized a constant comparative analysis process where I continually compared the collected data to the emerging categories (Creswell, 2013). I recorded and transcribed all interviews verbatim. I utilized the grounded theory three-phase coded process, which included open, axial, and selective coding (Corbin & Strauss, 2015). I triangulated and analyzed the interview data, memos, codes, and categories to develop an emerging theory. I then utilized line by line coding to analyze the observational data and allowed categories to emerge. Following the selective coding process, I utilized the ancillary data sources and triangulated the observational categories to further develop and adjust the emerging theory.

Open Coding and Changes to Qualitative Questions

Within open coding, I initially read through the data and took notes to form the beginning codes. Open coding is utilized to develop major categories from the initial codes (Corbin & Strauss, 2015). Throughout the coding process, I utilized the constant comparative approach which allowed for adaptation of data collection as initial codes emerged and until saturation of a specific idea occurred (Creswell, 2013). As codes continued to emerge, major categories were developed along with the phenomenon which became the centerpiece of the study.

Following the second round of teacher and student interviews, it was apparent that the teachers' and students' perceptions did not differ on how the psychological needs were supported. What did emerge was that both teachers and students believed strong relationships developed within the SBAE programs allowed for student motivation to be developed. Additionally, it was perceived that the other psychological needs of

competence and autonomy were supported. Within grounded theory, it may be appropriate to alter the research questions as the central phenomenon emerges and as data collection and analysis changes. My original research questions were: 1) what strategies do the SBAE teachers perceive as the most supportive of the students' psychological needs, 2) which strategies utilized by the SBAE teachers do the students perceive as the most supportive of their psychological needs, and 3) what strategies that support the psychological needs of students do the SBAE teachers utilize within the SBAE program. To account for the new direction of the collection and analysis, the new central question is: how are the psychological needs supported within the SBAE program? Two additional sub question were also developed: a) what influences how the psychological needs are supported and b) what motivational outcomes are experienced within the SBAE program? While the central phenomenon focused on the need of relatedness, the central question initially encompassed all the psychological needs to allow for their continued emergence.

Axial Coding

The axial coding stage connects the major categories to the central phenomenon within a visual model (Corbin & Strauss, 2015). In order to better understand the central phenomenon, I identified the causal conditions (Creswell, 2013) and the context, conditions, and consequences (Corbin & Strauss, 2015) related to it. Within axial coding, I was able to see how the teacher beliefs influenced how and why the psychological need of relatedness was supported and how the central phenomenon of relatedness allowed for other motivational strategies to be utilized and other needs to be supported.

Selective Coding

The final stage of coding analysis, selective coding, identifies the interrelatedness of the categories within the emerging theory (Corbin & Strauss, 2015; Creswell, 2013). Within the coding process, I identified how the major categories aligned with and influenced how the psychological needs of students where supported within SBAE programs. As I moved into the selective coding process, I began to ask questions to further investigate how the categories connected within the emerging theory. A visual model was developed and was adjusted as the selective coding process progressed. As I conducted the fifth and final round of interviews it was evident that no new evidence was emerging, thus data saturation was achieved (Corbin & Strauss, 2015). A final visual model was developed which represents the substantive theory and the central phenomenon.

Validation strategies

Throughout the qualitative portion of this study I utilized a variety of validation strategies to uphold the internal and external validation and reliability of the collected data (Creswell, 2013). According to Lincoln and Guba (1985), researchers can uphold validation and trustworthiness through credibility, transferability, dependability, and confirmability. To ensure credibility, I triangulated all data sources, and I was engaged in the field for a prolonged period of time (Lincoln & Guba, 1985). To ensure transferability, I used thick, rich descriptions (Lincoln & Guba, 1985). I upheld dependability and confirmability through maintaining a constant audit trail (Lincoln & Guba, 1985). Additionally, I utilized peer reviews and debriefing, negative case analysis,

clarifying researcher positionality, and member checking to ensure validation (Creswell, 2013).

Reliability of observational organizer

Beyond utilizing validation strategies, I also maintained reliability of the utilized observational organizers. In order to maintain intra-rater reliability, I conducted and video taped multiple classroom and FFA observations and then cross-checked the individual observations for internal consistency. Inter-rater reliability was not required due to the lack of multiple researchers conducting observations.

Convergent Data Analysis

Because this was a mixed-methods study, I analyzed the qualitative and quantitative data independently to address the associated objectives or questions (Creswell & Clark, 2011). Following these analyses, I triangulated and interpreted the qualitative and quantitative results to address the convergent research question (Creswell & Clark, 2011). Due to the emphasis placed upon it within the research design, the convergent analysis centered on the interview and qualitative data. Following the development of the substantive theory and triangulation of all qualitative data sources, I converged and triangulated the quantitative results with the substantive theory. This final triangulation allowed for additional emerging changes to the developing theory, and this concluding theory addressed the convergent research question.

CHAPTER 4—FINDINGS

Purpose of the Study

The purpose of this study is to identify the strategies, actions, and processes school-based agricultural education (SBAE) teachers utilize to support the psychological needs of students and thus develop the students' intrinsic motivation. This study will investigate strategies utilized both within and outside the agricultural classroom.

Research Objectives and Revised Questions

Objectives:

1. Describe the support of the SBAE students' psychological needs within the SBAE program.
2. Describe the students' perceived intrinsic motivation within the SBAE program.
3. Describe the autonomy-supporting orientation of the SBAE teachers.

Central Question:

How are the psychological needs supported within the SBAE program?

Subquestions:

1. What influences how the psychological needs are supported?
2. What motivational outcomes are experienced within the SBAE program?

Convergent Question:

What actions and processes that the SBAE teachers utilize within and outside of the SBAE classroom support the psychological needs of students and thus develop students' intrinsic motivation?

Overview of Findings

Due to the mixed methods nature of this study the quantitative and qualitative findings will be disseminated separately. The convergent findings will then be disseminated, along with the substantive theory. As a primary data source for the convergent findings, the qualitative thick rich descriptions, participant quotes, and observational findings will be disseminated within the convergent findings. A summary of the qualitative central phenomenon, themes, and sub themes will be presented within the qualitative findings section.

Quantitative Objective 1

Research Objective 1 was to describe the students' perceived support of their psychological needs within the SBAE program. The students' psychological needs were operationally defined as the following constructs: (a) autonomy, (b) relatedness, and (c) competence. Students recorded data for each construct using a seven-point Likert scale, having been asked to reflect on the needs constructs related to their experiences within their daily lives and their SBAE program. The real limits I set for the student need support were: score of 1.00 to 1.50 was considered highly thwarted, 1.51 to 2.50 was considered thwarted, 2.51 to 3.50 was considered slightly thwarted, 3.51 to 4.50 was considered neutral, 4.51 to 5.50 slightly supported, 5.51 to 6.50 supported, and 6.51 to 7.00 highly supported.

I measured the students' psychological needs support within the SBAE program and within their everyday lives using means and standard deviations (see Table 4). Competence means within the SBAE programs fell into the categories of slightly supported (S1: $M = 5.40$, $SD = 0.84$; S2: $M = 4.99$, $SD = 1.04$; S4: $M = 4.62$, $SD = 0.88$)

and neutral (S3: *M* = 4.03, *SD* = 0.71; S5: *M* = 4.14, *SD* = 0.73). Competence means within the students' everyday lives fell into the categories of slightly supported (S1: *M* = 4.83, *SD* = 0.77; S2: *M* = 5.08, *SD* = 0.96; S4: *M* = 4.96, *SD* = 0.74) and neutral (S3: *M* = 4.42, *SD* = 0.69; S5: *M* = 4.32, *SD* = 0.74). Relatedness means within the SBAE programs fell into the categories of supported (S1: *M* = 5.57, *SD* = 0.62), slightly supported (S2: *M* = 5.29, *SD* = 0.97; S4: *M* = 4.89, *SD* = 0.95; S5: *M* = 4.59, *SD* = 0.62), and neutral (S3: *M* = 4.43, *SD* = 0.51). Relatedness means within the students' everyday lives fell into the categories of supported (S2: *M* = 5.58, *SD* = 0.85) and slightly supported (S1: *M* = 5.02, *SD* = 1.10; S3: *M* = 4.54, *SD* = 0.57; S4: *M* = 5.28, *SD* = 5.28; S5: *M* = 4.63, *SD* = 0.59). Autonomy means within the SBAE programs fell into the categories of slightly supported (S1: *M* = 5.10, *SD* = 0.74; S2: *M* = 4.71, *SD* = 0.98; S3: *M* = 4.74, *SD* = 0.66; S5: *M* = 4.55, *SD* = 0.66) and neutral (S4: *M* = 4.35, *SD* = 0.97). Autonomy means within the students' everyday lives fell into the categories of slightly supported (S2: *M* = 4.91, *SD* = 0.86; S3: *M* = 4.74, *SD* = 0.64; S4: *M* = 4.82, *SD* = 0.79; S5: *M* = 4.87, *SD* = 0.57) and neutral (S1: *M* = 4.39, *SD* = 0.82). Within all need construct means School 1 displayed higher means within the SBAE program than within the students' everyday lives. Additionally, Schools 2, 4, and 5 displayed higher need construct means within the students' everyday lives than within the SBAE program. School 3 displayed higher competence and relatedness means within the students' everyday lives and displayed the same mean related to autonomy.

Table 2

Descriptive Statistics of Student Needs within SBAE Program and Everyday Life (n = 221)

School	Competence				Relatedness				Autonomy			
	SBAE Program		Everyday Life		SBAE Program		Everyday Life		SBAE Program		Everyday Life	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
1 *n* = 7	5.40	0.84	4.83	0.77	5.57	0.62	5.02	1.10	5.10	0.74	4.39	0.82
2 *n* = 69	4.99	1.04	5.08	0.96	5.29	0.97	5.58	0.85	4.71	0.98	4.91	0.86
3 *n* = 34	4.03	0.71	4.42	0.69	4.43	0.51	4.54	0.57	4.74	0.66	4.74	0.64
4 *n* = 37	4.62	0.88	4.96	0.93	4.89	0.95	5.28	0.92	4.35	0.97	4.82	0.79
5 *n* = 74	4.14	0.73	4.32	0.74	4.59	0.62	4.63	0.59	4.55	0.66	4.87	0.57

Note. Seven-point Likert scale anchors: 1: not at all true, 4: somewhat true, and 7: very true.

Instrument Based Qualitative Objective 2

Research Objective 2 was to describe the students' perceived intrinsic motivation within the SBAE program. To collect data, I used open-ended questions related to interest experienced within the agricultural education classroom, losing track of time when engaging in an agricultural education classroom, interest experienced within the FFA chapter, and losing track of time when engaging in an FFA activity. A total of 873 responses were line by line coded and I reported the preliminary coding results along with supporting quotes.

Interest experienced within an agricultural education classroom that led to self-directed learning outside of class time

A majority of the students who continued to engage in interesting content outside of the agricultural classroom identified doing so when the content related to their Supervised Agricultural Experience (SAE) project or their future career aspirations.

Student 108 stated, "When we were learning about SAE[s] I went home and did more research about SAE[s] and which one would be best for me." Students identified Career Development Events (CDEs) as a way to further engage in interesting topics: "When we started doing dairy cattle I decided I wanted to learn more about them and decided to sign up for a contest [CDE] team." Students identified learning more outside of the classroom when they engaged in hands-on classroom and laboratory experiences such as welding, animal processing, and agriscience experiments. Student 301 stated, "This happened during our welding course. I would go home and watch videos and research to become a better welder." Other experiences that fostered learning outside of the classroom included content that related to the FFA chapter, student valuing of the content, content that could be transferred to other classes, lessons that related to the students' agriculturalist and livestock exhibitor self-schemas, the desire to better skills, and content that related to the students' family and/or family business. However, many students reported that they had not experienced wanting to continue their learning beyond the agricultural classroom.

Loss of time (flow) experienced within an agricultural education classroom

Within the agricultural education classroom, a majority of students identified that they experienced losing track of time or experiencing flow while engaging in hands-on content. Students acknowledged losing track of time while fabricating metal and wood projects, welding, butchering wholesale and retail meet cuts, conducting experiments, and learning through hands-on experience at the school farm. Student 532 stated:

> One time when we were messing with hogs I got so entertained with messing with them that I couldn't keep track of the time then I hear the other classes walking to the buses and I was like what it is time to leave already?

Students also identified losing track of time when studying their CDE content and preparing Leadership Development Events (LDEs) speeches: "This [flow] once happened to me while studying for my CDE, nursery. I was so engaged in learning the names of the plants I didn't hear the bell ring, and was late to my next class."

Students also experienced flow when the content they were learning related to their interests, future career aspirations, and SAE projects. Student 253 stated, "A time when I felt the most engaged in what we were learning, was our soil unit. I fell in love with just learning about something so simple." Additional identified experiences where loss of time occurred included the teacher discussing politics, learning about content related to their farm or family business, answering the teachers' verbal questions, engaging in content which aligned with their beliefs and values, student choices within the classroom, and the teacher providing real-life situations related to the content. Although many students reported flow experiences, many students said they had not experienced flow within their agricultural classroom.

Engaging in an FFA activity due to interest or enjoyment

Within the FFA chapter, students identified participating in FFA activities due to their interest or enjoyment in the context of the activity such as trapshooting or sports-based activities following monthly meetings. Students identified engaging in FFA activities due to the fun/enjoyable nature of the activity and being able to socialize with their friends. Student 225 stated, "I was interested [in Washington Leadership

Conference] I knew that I would be able to meet people and make friends from all across the country .... I was also interested in it because I love travelling." Additionally, FFA participation occurred due to the desire to help others or teach others through community service or advocacy activities. Student 312 said, "[I participate in] Food for America because I think it is cool and important to teach elementary kids where our food comes from and how it's made." Students were driven to engage in FFA activities, specifically CDEs or LDEs, through their desire to better themselves, increase their leadership skills, or increase their knowledge. Student 414 stated, "I once participated in contest [CDE] team. I was interested in this activity because I thought it would be a great way to learn new things." Students identified engaging in activities that related to their career aspirations, SAE projects, agriculturally based self-schemas and related to their previous life experiences. Some externally driven FFA participation was identified and included: participating to receive incentive points, encouragement from family or SBAE teachers, and to miss school. Much like the classroom experiences, many students identified that they had not experienced interest or did not participate within the FFA chapter.

Loss of time (flow) experienced within the FFA chapter

Students who experienced a loss of time when participating within their FFA chapter stated they did so while engaging in focused, fun, and enjoyable activities such as trapshooting, FFA conventions, and livestock exhibiting. Student 336 stated, "Shooting trap I lost track of time a lot. I would go after school and have so much fun I wouldn't realize what time it was when we were done shooting." Activities in which students were able to socialize with their friends also fostered a perceived lost track of time, "Pretty much at any chapter meeting I lose track of time because I am too busy socializing and

having fun with my friends." Students also experienced flow when practicing with their CDE team and when preparing speeches for competition. Student 427 stated, "Every year I am on a contest [CDE] team and I am very competitive, so I lose track of time and space whenever I am practicing or studying." Flow was also experienced during hands-on FFA activities such as agriculturally related games, mud volleyball, and trapshooting. Student also referenced losing track of time while helping others through community service: "For example, we worked at the Food Bank. We were so busy working that 2 hours felt like 30 minutes." Other experiences within the FFA chapter within which flow occurred included activities that related to having snacks/food available, the students' passion for agriculture, the students' SAE projects, teaching others, and increasing the students' knowledge. In addition, many students identified that they had not experienced flow within their FFA chapter.

Quantitative Objective 3

Research Objective 3 was to describe the autonomy-supporting orientation of the SBAE teachers. I operationally defined teacher orientation using the following constructs: (a) highly autonomous (HA), (b) moderately autonomous (MA), and (c) highly controlling (HC). Using eight vignettes and a seven-point Likert scale, teachers provided responses related to their perceived orientation. The real limits I set for the teacher orientation perception means were: 1.00 to 1.50 was highly inappropriate, 1.51 to 2.50 was inappropriate, 2.51 to 3.50 was slightly inappropriate, 3.51 to 4.50 was neither inappropriate or appropriate, 4.51 to 5.50 was slightly appropriate, 5.51 to 6.50 was appropriate, and 6.51 to 7.00 was highly appropriate. Table 5 displays the means of the perceived level of appropriateness of the teacher orientation constructs. Within the

highly controlling construct, two of the teachers found the related behaviors slightly inappropriate (T1 *M* = 3.38; T2 *M* = 3.13), two teachers considered the behaviors neither inappropriate or appropriate (T3 *M* = 4.13; T4 *M* = 3.86), and one teacher considered the behaviors slightly appropriate (T4 M = 5.00). Within the moderately controlling construct, two teachers found the related behaviors to be neither inappropriate or appropriate (T2 *M* = 3.75; T5 *M* = 3.75), two teachers found them to be slightly appropriate (T1 *M* = 4.75; T3 *M* = 5.25), and one teacher found them to be appropriate (T4 *M* = 6.25). Within the highly autonomous construct, one teacher found the related behaviors to be slightly inappropriate (T5 *M* = 3.00), three of the teachers found them to be slightly appropriate (T1 *M* = 4.63; T2 *M* = 5.00; T3 *M* = 4.63), and one teacher found them to be appropriate (T4 *M* = 6.25).

Table 3
Teacher ratings of perceived appropriateness of being highly controlling, moderately controlling, and highly autonomous (n = 4)

	Highly Controlling	Moderately Controlling	Highly Autonomous
T1	3.38	4.75	4.63
T2	3.13	3.75	5.00
T3	4.13	5.25	4.63
T4	5.00	6.25	6.25
T5	3.86	3.75	3.00

Regarding teacher orientation, I then inputted the appropriateness construct mean scores into the following equation: Teacher orientation = 2(Highly Autonomous *M*) + 0(Moderately Autonomous *M*) – 1(Moderately Controlling *M*) – 2(Highly Controlling *M*) (Reeve et al., 1999). To categorize teachers' orientations, I considered a score of −4 and below to be highly controlling, −3.9 to −2 moderately controlling, −1.9 to 0 moderately autonomous, and 0.1 and above highly autonomous. Table 6 displays the algebraic sum of the teachers' orientation. It was found that two teachers possessed a highly controlling

orientation (T3 = −4.25; T5 = −5.47), two teachers possessed a moderately controlling orientation (T1 = −2.25; T4 = −3.75), and one teacher possessed a moderately autonomous orientation (T2 = −0.01).

Table 4
Adjusted means and algebraic sum of teachers' orientation (n = 4)

	Highly Controlling (−2)	Moderately Controlling (−1)	Highly Autonomous (2)	Algebraic Sum
T1	−6.76	−4.75	9.26	−2.25
T2	−6.26	−3.75	10.00	−0.01
T3	−8.26	−5.25	9.26	−4.25
T4	−10.00	−6.25	12.50	−3.75
T5	−7.72	−3.75	6	−5.47

Qualitative Central Question

The research central question was how are the psychological needs supported within the SBAE program (see Appendix Q)? Through the 20 qualitative interviews and ten observations, I found that the psychological needs of competence, relatedness, and autonomy were supported in a variety of ways. I also determined that the need of relatedness emerged as the central phenomenon of the study and influenced the ability of the other needs to be supported. It emerged within every interview and observation that relatedness was the most commonly supported psychological need with the SBAE program. It also emerged that without the strong relationships that supported the need for relatedness, the needs for competence and autonomy would not be supported. Thus, the relationships that support the need for relatedness form the centerpiece of the needs support process within SBAE programs. This study also revealed that the SBAE teachers, along with the inherent structure of the SBAE three-circle model, developed and supported students' confidence. SBAE teachers utilized a variety of strategies to support

the students' confidence within the context of the SBAE program, thus supporting the students' need for competence. Teachers also focused on developing the students' base knowledge and building upon it, encouraging and praising students, providing leadership opportunities for FFA members, and utilizing specific FFA activities to support the need of competence. The SBAE three-circle model also allowed students to build confidence through their ability to apply what was learned in the classroom to the non-formal settings of the FFA and SAE. Similar to relatedness and competence, support for the need of autonomy occurred within the SBAE program. Students perceived that they could direct their own actions based upon strategies utilized by SBAE teachers within the classroom, FFA activities, and CDE preparation. Teachers utilized independent work, student choices, and student-directed learning to support student autonomy. Unlike the psychological needs of relatedness and competence, students reported thwarting experiences related to the need of autonomy. Many instances emerged in which teacher control and a lack of student direction prevented autonomy from being supported. Teacher-provided directives, a lack of student choice, and incentives/rewards thwarted student autonomy.

Qualitative Subquestion 1

The first qualitative subquestion was what influences how the psychological needs are supported (see Appendix R)? Through the qualitative data analysis, I found that teacher beliefs, the utilization of a variety of motivational strategies, and the intracurricular connections based upon total program engagement influenced the ways in which students' psychological needs are supported. While psychological needs support emerged, teacher beliefs and the motivational strategies also partially thwarted students'

psychological needs. Within the participants, it emerged that the contextual and motivation beliefs held greatly shaped the way in which teachers supported the students' psychological needs and motivation. Teachers held specific beliefs about how school systems, along with the SBAE programs, influence student motivation. Additionally, teachers possessed specific beliefs regarding the roles teachers, advisors, students, and FFA members play within the SBAE program. Teachers also held specific beliefs regarding the drivers and paramount means in which to motivate students in the SBAE program. The utilization of a variety of motivational strategies emerged within all SBAE program components based upon teacher beliefs and perceived student need. Teachers utilized the motivational strategies that they believed would best account for the students' various motivational drives. Teachers also strived to develop mutual trust and respect based upon the central phenomenon of relatedness. Teachers who were observed utilized a variety of extrinsic, internal, and intrinsic strategies in the FFA and classroom. It also emerged that the teachers utilized the intracurricular nature of a total SBAE program experience to support the psychological needs of students. Through connecting the agricultural classroom, FFA, and SAE, teachers strengthen the motivational experiences, psychological needs support, and knowledge and skill development of students.

Qualitative Subquestion 2

The second qualitative subquestion was what motivational outcomes are experienced within the SBAE program (see Appendix S)? Through the qualitative data analysis, I found that based upon the teachers' beliefs and the motivational strategies utilized, a variety of student motivational outcomes emerged. Student motivational outcomes included extrinsic, internalized, and intrinsic motivational experiences. A

transition of motivation also emerged as some students began engagement based upon extrinsic factors and were allowed to experience more internal or intrinsic motivation.

Convergent Research Question

The convergent research question was, what actions and processes that the SBAE teachers utilize within and outside of the SBAE classroom support the psychological needs of students and thus develop students' intrinsic motivation? Through the triangulation and convergence of the qualitative and quantitative analysis, I developed a visual model to represent the substantive theory (see Figure 3).

Substantive Theory: The Process of Supporting Psychological Needs Within the SBAE Program

Overview of the Process of Supporting Psychological Needs

Within the convergent analysis, teacher beliefs were the context for which the psychological needs support process was fostered. Teachers possessed specific beliefs regarding the importance of developing relationships within SBAE programs, and these beliefs helped to form the central phenomenon of relatedness. Teachers believed that without the formation and continued support of relationships no other psychological needs support or motivationally based strategies would be affective. The motivational beliefs teachers held also influenced the motivational strategies teachers utilized and the motivational outcomes students experienced. Following the development and support of relationships, teachers utilized a variety of extrinsic and intrinsic strategies to motivate students. Teachers then created intracurricular experiences to strengthen the students' psychological needs support and motivational experiences. Through the process, students

experienced several outcomes including the support of competence, the support and thwart of autonomy, and extrinsic and intrinsic motivational outcomes.

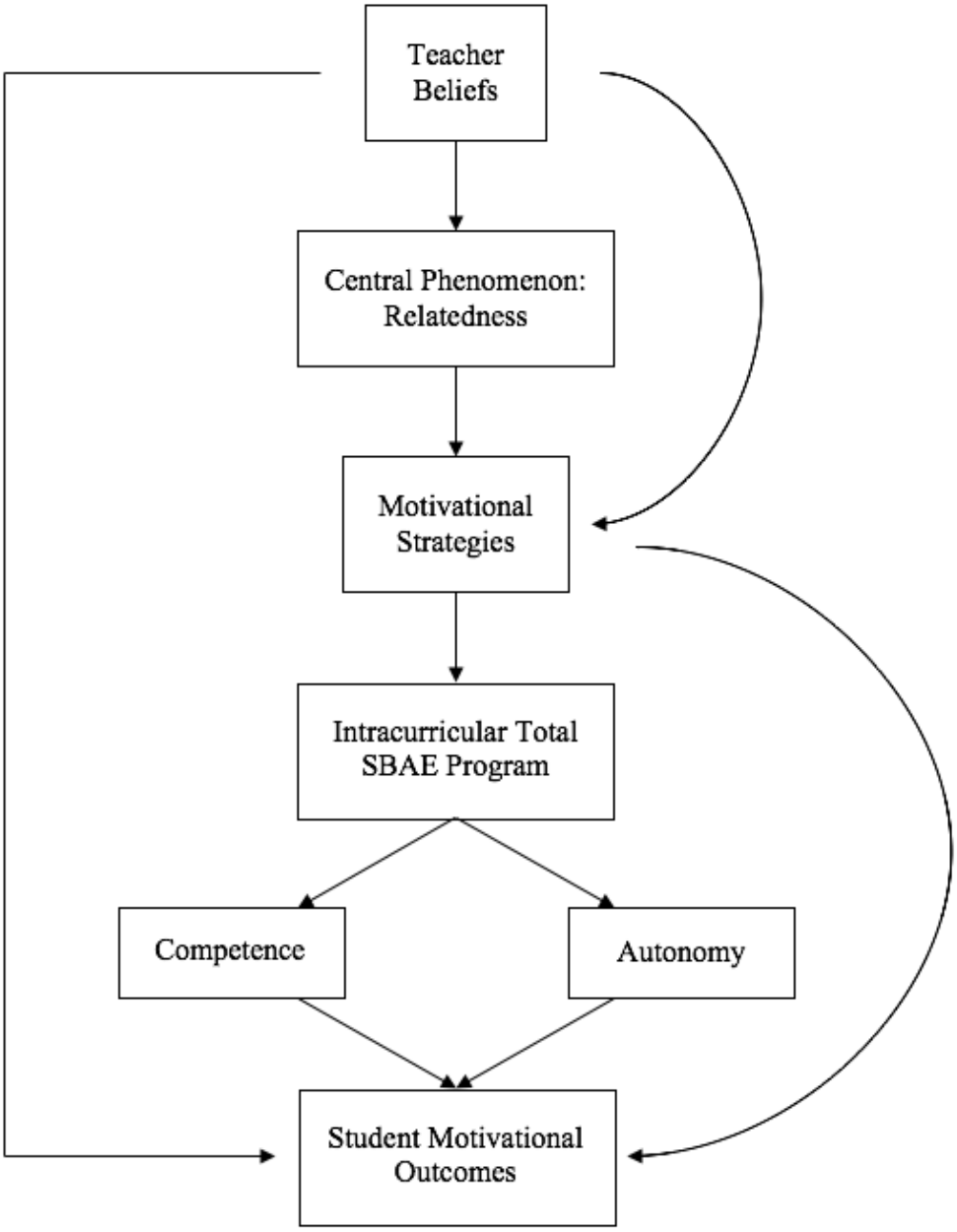

Figure 3. The Process of Supporting Psychological Needs Within the SBAE Program.

Context: Teacher Beliefs

Through the convergence of the qualitative and quantitative analysis, teachers possessed specific beliefs about the roles school systems, SBAE programs, and teachers play in student motivation. Teachers also possessed specific beliefs about the role students plays within SBAE programs and about how to best motivate students. The teacher beliefs were all influenced by the teachers' controlling orientation. Within the quantitative analysis, it was found that the majority of teachers possessed a controlling motivational orientation. Thus, they believed the most effective way to motivate students was through controlling teaching strategies. Further, through the qualitative analysis the primary belief held by all teachers was the importance to develop caring relationship with students. By aligning the controlling orientation, along with the qualitative themes and subthemes, it emerged that teacher beliefs influenced the central phenomenon, along with the motivational strategies utilized and the student motivational outcomes.

Teachers believed school systems produce students who harbor compliance not motivation for the extrinsic procedures and policies put in place. Grades were the most common extrinsic policy enacted within school systems. Teachers believed the extrinsic nature of grades causes students to experience pressure from teachers and from the grading process itself. Kyle stated, "Again, it comes down to every individual student of how much a grade truly pressures them, but of those that it does, I think it's a lot of pressure." Many teachers believed average students possessed a genuine desire to maintain and correct their grades. While other teachers acknowledged the constant accountability initiated by assessments and grades caused an overall decrease in motivation and created a lack of concern for maintaining grades. Other school wide

procedures were perceived by the participating teachers to serve as reminders to the appropriate and expected behaviors and typically only impacted the small percentage of "repeat offender" students. Laura stated, "I think when they're younger it helps them to make good decisions if they are reminded." Further, teachers believe the extrinsic nature of school systems has developed cookie cutter students who lack the desire to work independently. Kyle stated, "They like structure. They like to be told what to do because I think in education we tell them exactly what to do from a very young age." SBAE teachers believe the extrinsic grades, policies, and procedures can serve as behavioral reminders but also can create pressure for the students to comply.

While schools are viewed as extrinsic bounded systems, teachers credit the inherent nature and goals of SBAE programs and their educational beliefs as a way for students to learn and grow beyond the schools' extrinsic environment. Teachers believed the role of SBAE programs was to prepare students to be successful beyond high school and that education goes far beyond the classroom. Teachers also believed the career and future focus of SBAE programs allowed students to focus less on grades and accountability, and more on developing the knowledge and skills necessary to be successful in their future endeavors. Kate stated:

> [We] have FFA activities that encourage scholarship, FFA activities that encourage students to learn. We try to put them in situations where they are learning. They are gaining skills and things they can relate back to their core classes. It's like tricking them that we're doing this and they don't realize that they're learning these skills until after they are done.

Teachers believed a crucial component within the educational process is developing relationships based upon the genuine desire to encourage improvement through knowledge development, not grade accumulation. The developed relationships also allow students to find a safe haven within the school system where they are not alienated by grades or other policies.

Teachers revealed very specific differences within their beliefs about the roles they play as a teacher and an FFA advisor. Teachers believed their main role as a teacher was to facilitate learning, present curriculum, and educate students. Teachers were also driven by the need to foster student learning, which is the primary goal of their classroom environment. Laura stated:

> I think the teacher has to provide a guide of that learning process and the students have to be willing to take it. So basically, the teacher is going to provide the direction or the avenue or the objective of what we need to learn.

Because learning is their primary goal, teachers perceived that they needed to manage and control the learning environment to ensure knowledge transfer occurred. Thus, teachers believed in the need to utilize teacher-directed methods, which focused on expert-to-novice knowledge transfer. However, teachers also expressed the need to nest student interest and prior knowledge within the learning goals and foster independent thinking through diverse methods and real-world applications. Motivating students through caring relationships is also a crucial component of the classroom teacher role. Regarding caring relationships, Steven stated:

> I think that's your first thing [to educate], but then also to care. I think as a teacher, you can educate, but then I think if you don't care for your students I think that you're nothing more than just an educator.

Teachers possess very specific beliefs regarding their role within the SBAE classroom.

Participants believed their roles as FFA advisors included facilitating and educating students in life skills, teamwork, and study skills. As facilitators, FFA advisors were there to provide guidance and assistance while the officers lead the chapter activities. Kate stated, "I have learned that I can't [be in control]. If I do try to be that way, then my life is going to be miserable. That's where I've backed off and I leave a lot of leadership to them." FFA advisors were strictly present to provide opportunities to students, help officers set goals, and help students make good decisions. Steven affirmed, "I think the FFA needs to be membership-ran, but I think that the advisors are there not only to guide in the right direction, but make sure they don't make adolescent mistakes." Additionally, FFA advisors manage chapter finances, student behavior, and student safety during activities, all of which are dictated by school policy.

Teachers possessed varying beliefs in the role students play within the SBAE program. In the context of a classroom, teachers believed the students' primary role is to be active learners. Robin stated:

> Being an active learner is a student that wants to engage within the classroom, wants to engage with other students in not just talking, but in constructive manners, also engage with the teacher, ask questions, be able to problem solve, be able to think, be able to think outside of the box in order to achieve their highest potential.

Robin further discussed, "[I want] them to be an active learner and be able to take a vested interest in what they're learning and what they are doing." Teachers believed that students also need to dive into and find the information they need to learn the content presented to them. Students also need to identify ways in which the knowledge developed can be applied within their daily lives.

Teachers believed that students possessed a much more directive role within the FFA chapter. Teachers believed students and officers alike should manage and direct the workings of the FFA chapter through committee involvement, leadership roles, and continued participation. Teachers also believed that as students are allowed to govern the direction of the FFA chapter, they developed a sense of ownership. Kate discussed, "The students want to be here. They want to take ownership in it. They want to be in directing positions for those activities versus in the classroom." Within the FFA, teachers believed students should possess a much more directive role than compared to the classroom.

Teachers believed students are motivated in a variety of ways to learn and engage in the SBAE classroom. Regarding student motivation, Robin stated, "Motivation has to come in a variety of different forms." Robin continued:

> It's finding the correct way to be able to motivate them, and you can't use a flat line, this is how I'm going to motivate each student, because each student is an individual. If you really want to motivate them, you have to figure out what the correct way is for each student.

Kate explained:

> Pretty much use everything all the time. There's always that carrot of a grade. For the kids that don't have that carrot of getting good grades, then if they aren't

> passing something then they're not eligible. Trying to instill that intrinsic motivation with tweaking the content of the class into what fits the group of students and trying to teach things that they are interested in.

A majority of teachers believed students are driven and best motivated by extrinsic influences, "By and large, extrinsically, kids are motivated better." Moreover, two teachers believed students were not self-starters or independent thinkers, but wanted them to develop into self-motivated individuals. However, other teachers believed true learners were driven by intrinsic motivation and many students possessed some form of internal or intrinsic motivation. Laura explained, "The style that works the best with motivating students is probably to let them take it as a task of their own." Most teachers said that intrinsic motivation is developed at an early age through the parents' influence. One teacher also acknowledged that she was uncertain whether the motivational strategies she utilized would shift extrinsically based to intrinsically based motivation. Robin stated, "but once they get past that point [extrinsic motivation] and they see this is actually not that bad, I [student] can actually achieve something, then they start to find the internal motivators for future years." Based upon the teachers' motivational beliefs, teachers acknowledged needing to utilize a variety of motivational strategies to connect to the various student motivators.

Similar to student motivation within the classroom, teachers believed students are motivated in a variety of ways to engage in FFA activities. Thus, to account for the variance in extrinsically and intrinsically motivated students, teachers believed a variety of motivational strategies must be utilized. Additionally, teachers believed that within the FFA, students want to be pushed, experience success, and engage in structured leisure

time to increase motivation. Steven stated, "kids want to be pushed. Everyone to a different level, but kids want to be pushed because they want success ultimately, just like any other human."

Central Phenomenon: Relatedness

The analysis showed that the psychological need of relatedness was greatly supported within the SBAE program. Within the quantitative data, student relatedness was perceived to be a highly supported need within the SBAE program. The students' perceptions aligned with relatedness emerging as the central phenomenon within the qualitative grounded theory interviews and observations. By aligning the quantitative analysis with the qualitative central phenomenon, relatedness continued to emerge as the central phenomenon within the substantive theory.

It was evident that the FFA was a key instrument within the SBAE program in which teacher-to-student relationships were developed. Robin stated:

> Actually, the benefit is the FFA portion of the ag department is what helps to helps build relationships within the classroom. That's actually more of the driving force. I have a better understanding, and I'm usually closer to students in my ag class that are more active FFA members.

The time outside of the classroom, which is required to advise the FFA chapter as well as to prepare CDE teams, provides ample time for the SBAE teacher to engage with students in small group settings. Kate said:

> I probably spend more time than what a normal teacher does with students between trapshooting and FFA, but then I also spend a lot of time just talking to the students. If an administrator comes in, it might look like we're sitting around,

visiting or talking, but in the end I'm getting to know those students and know what their interests are.

Additionally, the extended time outside of the classroom allowed the SBAE teachers to engage with students outside of the traditional parameters of school systems. The FFA provided an opportunity where teachers and students could engage without the pressure of accountability, grades, or the threat of disciplinary punishment based on school policies. Steven stated, "When you've got [the] forestry team out there and you're walking through the woods, you can make silly jokes and you can go ahead and really get [to] talking." The less extrinsically controlled environment allowed the students to feel more comfortable and allowed for the relationships to flourish.

The non formal environment of the FFA as a positive youth development organization also allowed for situations to arise which would not typically occur in a formal classroom setting. Within the FFA chapter, students and teachers are allowed to socialize with each other and hold personal conversations at a much higher rate than within the classroom. Additionally, specific activities such as leadership games, CDE preparation practices, and community breakfasts provide opportunities for teachers and students to engage with one another in more entertaining situations. The non-formal engagement between teachers and students also allows for the increased utilization of mutual humor and joking.

Students acknowledged that within the FFA the teachers still played a crucial role in managing the environment and behavior of the students participating. Students discussed that the teachers' role within the FFA was to advise, assist the officers and members, encourage participation, ensure the safety of members, and manage the

financial aspects of the program. Additionally, the students recognized that teachers sometimes pushed or pressured students to engage or participate in particular FFA or leadership opportunities. While this pressure sometimes accumulated into a sense of being overwhelmed, a majority of students willingly accepted this strong encouragement due to the relationship built with the teacher through the FFA. The students observed this "push" as encouragement from an outside source who could see their potential and guided them to where they could be the most successful. Student 416 identified this dynamic:

> He'll tell us that we can do it. We won't believe it. Like I was I can't do this. I can't talk in front of people. I can't do public speaking. Steven [teacher] was like you can you can do it. You're just overthinking it now. Grow up and stop complaining about it … He's pressuring me because he knew that it would be better for me to do it.

Without the preexisting relationship, the students would have responded negatively to the pressure.

Beyond building teacher-to-student relationships, the FFA chapter also allowed student-to-student relationships to become stronger. The observations showed that throughout every FFA activity, FFA officers and members were provided ample opportunities to interact and socialize with one another. For example, following the conclusion of the observed FFA monthly meeting, the FFA chapter provided food and encouraged members to eat and socialize. Beyond encouraging socialization, numerous opportunities arose for students to engage in peer teaching and peer motivation. This was apparent within the CDE practices, where students would closely engage with each other

as they learned. I noted specific instances in which a student was struggling with a concept and a peer stepped up to teach the student. The observations also show that the students utilized each other to check their own understanding of CDE concepts.

To further expand upon the relatedness of students, the FFA chapter provided opportunities for students to connect and engage with their family, community, and younger students within their school system. Community service activities were widespread within the observed FFA chapters, and these types of activities encourage members to engage with and help others. Additionally, FFA members engaged with their family outside of their home environment as their parents and other family members are a part of the community. For example, it was observed at a community appreciation breakfast that officers and senior members socialized with community members, local agriculturalists, and the students' families as the chapter demonstrated their appreciation for the communities' support. Additionally, through an agriculturally-based advocacy activity, FFA members were able to engage and socialize with elementary students as they taught a lesson about food production. FFA, SAE, and CDE participation also creates a connection with the students' family members who also participated. Student 338 stated, "My great grandpa and my great uncle raised sheep, and that was his, my great uncle's, SAE whenever he was growing up." The students discussed how family members encouraged them to join and participate in the FFA and how their CDE participation was motivated, in part, due to a sense of competition they felt with their older siblings who also competed.

Beyond utilizing the FFA as a mechanism to build relationships, the teachers utilized specific strategies to build relationships with students in the SBAE program. To

begin developing relationships the teachers emphasized the importance of demonstrating to the students that the teachers genuinely care about them. Teachers discussed utilizing their actions and words as a way to demonstrate their caring nature. For example, Steven explained, "You can teach to what they need to know, but then also if a kid doesn't have breakfast, it doesn't cost me much to bring a thing of Pop-Tarts in, in the morning for them to listen".

Some mechanisms within the SBAE program allowed the teachers to engage with the students outside of the school system. For example, during SAE visits teachers were able to visit the students' workplaces and/or homes, visit with their parents, and better understand the students' backgrounds. Laura stated:

> Once you go and you spend time at their house and you know what they do or you go to where they work and you eat dinner and it helps a lot with those relationships cause then I can, when I'm back here [school] they know that I really do care, I do trust, and I want them to do well.

These experiences provide the SBAE teacher with a unique understanding of the students and how their background can influence their actions and motivations.

Beyond the SBAE program, the teachers discussed attending the students' after school activities to demonstrate genuine interest. Kyle said, "The biggest way is I attend their school functions. I show them that I care what they're involved in outside of the classroom." The teachers would also track the students' participation and accomplishments in the after school functions to provide encouragement and congratulations. I also noted teachers conducting personal conversations with students about their sports teams, clubs and organizations, SAE projects, FFA participation, and

families. The conversations all stem from the SBAE teachers' ability to engage with and understand the student beyond the classroom.

Beyond engaging with students outside the classroom, the teachers utilized specific relationship-building strategies within the SBAE program. The most prominent were humor, sarcasm, and joking with students. Steven said, "I think if a kid can laugh, you can go ahead and gain their attention." Humor was utilized to encourage the students to feel comfortable within the SBAE program, as a way for the teacher to demonstrate their caring nature, provide the students a way to laugh, and a way for the teacher to connect with the students. Student 104 stated, "she [teacher] feels [more] like a friend than this big boss that is above you because she will joke with us but she stays serious to where we know you have to get [tasks] done." The teachers also encourage the students to partake in the humorous environment of the program, and this was observed through the students joking around with the teacher.

The next most prominent relationship-building strategy the SBAE teachers utilized was providing encouragement and praise. Teachers were observed telling the students that "you are appreciated" and "you look cute today." Additionally, teachers would greet students as they entered the classroom, watching for mood changes or health issues, asking how they were feeling, and asking if there was anything the teacher could do to help. Student 416 agreed:

> He [teacher] cares a lot. He shows that he cares. He's just a really good person. He doesn't give up on us very easily and he pushes [us] to our limits. He asks if we're all right. If we're having a bad [day], it's like are you oaky? What's going on? Talk to me or something. He just shows that he really cares.

Another relationship-building strategy utilized was incorporating the students' experiences into the classroom and FFA. I noted that the teachers referenced the students' family businesses and livestock within lessons, asked students questions within lessons, incorporated the students' prior knowledge, and allowed stories to be shared.

The final relationship-building strategy the teachers utilized was to engage with the students as an "adult". One teacher discussed this process as being more of a parent than a teacher, and within this situation several students were observed referring to this teacher as "mom." Other teachers referred to this role, more similar to that of a sports coach, in which, as skills and close relationships are developed, discipline can be handled within the program rather than by administrators. Many instances were observed where mutual respect was developed due to discipline being handled by the teacher, rather than sending a student to the office. Steven discussed conducting discipline within the program: "I think that builds that relationship too because if you're going to discipline on your own, kids know they're going to be in trouble when they do something stupid." Many relationship-building strategies were utilized to develop caring relationships between the teachers and students.

By developing this mutual, caring relationship built upon understanding, students become more receptive to the motivational strategies teachers utilize and experience more motivational benefits. To begin, by understanding the students on a personal level, the teachers know the best ways to motivate the students. Specifically, the teachers discussed being able to identify the interests of the students and incorporate their interests within the SBAE program to build upon their motivation. Robin stated:

> We spend so much time with them. We meet their parents. We meet their guardians. We see their SAE projects. We take them to FFA activities. We can really start to choose specific things that they will find useful and valuable.

The teachers presented specific opportunities for the students to engage in activities that aligned with the students' interests. The opportunities included but were not limited to national band, state choir, agriscience projects, area office, proficiency awards, and CDE teams. Being able to build upon their motivation helped to increase the students' confidence related to learning and engaging in the FFA. Further, after mutual trust and respect is established, the teacher could provide the students more choices within the SBAE program, which can also increase the students' motivation. Teachers further relied upon the mutual trust and respect developed as they "push" or strongly encourage students to participate in specific activities. Students expressed that they did not feel pressured or forced to participate because of the established trust and respect.

The SBAE program fostered student-to-student relationships both within the FFA chapter and within the classroom. Within the formal classroom setting, the students discussed being able to interact and socialize with their peers more than in their core high school classes. Student 107 stated, "…your Math and English [class] and all that, you sit there, you do work for 50 minutes, you don't get to really interact with people or have fun [like in ag class]." Students also stated that it was easier to interact and engage with their peers within the SBAE classroom because the students all shared a similar interest in agriculture. Student 338 said, "here they [other students] have like a lot of the same interests that you do, where in the other classes they aren't in Ag."

Further, both the teachers and students identified the use of partner and small group work in the classroom as a way to build and strengthen student-to-student relationships. Robin discussed the importance of problem solving in groups to build relationships, "The first thing you do is figure it out on your own. Then ask your group mates." Additionally, the teachers discussed specifically selecting partners and group members in situations where they were concerned students would feel left out or in situations where they wanted to push students out of their peer comfort zone.

While small group work helped to build relationships, teachers also utilized it to enrich the learning of the students within the classroom. Observers noted teachers utilizing a variety of peer-based instructional strategies to increase student learning. The teachers utilized cooperative learning groups, peer teaching, peer checks for understanding, partner work, and partner share. The teachers identified using peer-based instructional strategies as a way for the students to learn from each other and to problem solve together. For example, I observed that the teachers encouraged students to share class notes and ideas related to classroom projects and tasks. Additionally, the students could learn how to engage with their peers to complete tasks like they would in their future work environment. The peer-based instructional strategies strived to engage students in peer dynamics focusing on learning and real-life scenarios rather than strictly focusing on peer socialization.

Following the development and strengthening of student-to-student relationships, the teachers utilized the relationships to enhance student motivation. I observed both within the SBAE classroom and the FFA chapter noted that the teacher encouraged the students to encourage and motivate their friends and peers. Specifically, the teachers

discussed how older students and/or FFA officers were vital to encouraging the younger students. For example, Laura explained how it works:

> let them [younger students] meet the older kids. The older kids have no idea how important they are to us retaining our younger ones. They really do help. Like if they're on contest teams with some of the older kids, I really want those to be the motivators to help out.

The peer encouragement and motivation helped to build confidence within the younger and older students alike. Students discussed how they were able to put this confidence into motion and work together as a team to accomplish a greater goal both within the classroom and within the FFA. Additionally, the teachers discussed partnering a student who lacked motivation with a student who values the content. It was their hope, by partnering students based upon their motivation, that the student's interest in the content would help develop a sense of purpose and need to learn the material within the unmotivated student.

Subsequent Conditions: Motivational Strategies and Intracurricular Total SBAE Program

Motivational Strategies

To encourage classroom and FFA participation a variety of extrinsic, internalized, and intrinsic motivational strategies were utilized. Within the classroom and FFA many of the extrinsic motivational strategies included incentives and rewards. Incentives and rewards were provided to engage FFA participation and when students complied with teacher expectations and school policy. The incentives and rewards included food, monetary scholarships, grades, points charts, rewards trips, leadership medals, and

raffles. Within the classroom, teachers also discussed bluffing students with threats of either punishment or the removal of incentives and rewards. Within the FFA, teachers also utilized recreation, the ability to fulfill student leisure time with constructive activities, student recognition, tradition of the chapter, and advisor accountability to encourage FFA participation. Other outside influences for participation also included encouragement from peers and the teacher. Members, officers, and the teachers were frequently observed providing encouragement for and during participation.

While the utilization of extrinsic strategies was prevalent within the observed SBAE programs, teachers acknowledged that the strategies were more likely to foster student compliance rather than motivation. The teachers possessed a slight hope that by providing incentives and fostering compliance, it would eventually transform into more internally driven student motivation. Kate stated:

> I think a lot of times it just becomes compliance. They know they have to do it. They do enough to get by. At some point, we hope that it turns into motivation, that they have that subject. They have something that triggers them to go, "Oh, wow. I might actually be interested in this."

Teachers further discussed that by extrinsically compelling students to participate in the FFA, the students could potentially find activities which they could internalize.

Internalized motivation was encouraged by increasing student value, aligning with student self-schemas, and developing goals. To increase the value and the connectedness of the content, teachers described how content and knowledge/skills that students developed would be relevant to future careers. Student 338 stated, "cause you hear people using stuff they learn in Ag. You don't hear people saying I use geometry every

day." Teachers also discussed the general career and life skills that students would potentially gain and be able to apply within the workforce. Additionally, the teachers modeled the value they perceived in the content and discussed why the students should also value it. Robin stated:

> Then I'll try to gear topics or gear things toward them or try to draw them in with examples based upon their essay projects or examples based upon their experiences, so they can see the connectivity between what we're learning in the classroom to something outside and how it can actually be useful or how it can be utilized.

Regarding developing student valuing, Laura stated, "Provide them reason, model it. Have [them] work with partner so they work with someone that maybe has that intrinsic value and they can model it. I hope that them seeing me work all the time would give them purpose."

SBAE teachers also helped students to see the value in FFA activities through glamorizing success, discussing benefits, identifying connections to career aspirations, recognizing potential learning experiences, and discussing the potential development of leadership skills. Regarding glamorizing success, Laura stated, "I also glamorize success. I talk about it in class when a kid does really well or they win something or they get a scholarship. I make sure the younger kids know about it." Providing students the ability to hold leadership roles and develop a sense of ownership within the chapter also increased the student value. Students also saw the value of FFA activities, which allowed them to experience success and expand beyond their comfort zone. Regarding connecting student experiences through community service activities, Robin stated, "I

think a lot of our students, whether it be through 4-H, through church, through various things or having been helped by some of these [community service activities], that's where they found that driving factor." CDE competitions aligned with competitive self-schemas and also allowed students to experience pride. Also, teachers discussed that many students were internally motivated to participate in community service activities because they perceive themselves as contributing members of the community or previously personally benefited from the activity.

To encourage intrinsically based student classroom and FFA participation, teachers utilized student interest to drive content and activity selection. To quantitatively gauge student interest, teachers would utilize state department forms and year-end interest surveys. Teachers would also gauge interest through talking with students, watching their actions, and assessing the choices they make. Within the classroom, student interests would dictate the course offerings, units, lessons, and examples provided. Kate stated:

> I like to try to make sure that I have units in that class that match what they're interested in. I've got a group of sophomores right now that are very interested in hunting and fishing. I tied natural resources into the Ag 2 curriculum.

Teachers supported and utilized student autonomy to intrinsically motivate students. Teachers also fortified a sense of novelty through the variety of content presented and activities utilized within the agricultural classes. The novelty of classroom experiences helped to motivate the students to engage in the classroom content.

Teachers also utilized a combination of motivating teaching and learning strategies within the SBAE classroom to develop student motivation. Primarily teachers

utilized a combination of direct instruction/lecturing to build confidence and projects or hands-on activities to allow for student autonomy. Teachers stressed the importance of utilizing direct instruction as a way to confer knowledge but acknowledged the motivational luster direct instruction can lack. Lecturing was identified as a crucial scaffolding step within student learning where teacher knowledge was conferred through verbal and visual cues and where base knowledge could be developed. Kyle said, "I think lecturing is an important part to happen before the application side of things." Laura also stated, "Lecture has to be done, at some point in time, just to facilitate some directions and some information. Students aren't necessarily motivated by that." Following lecturing, teachers used more student-directed strategies to increase student engagement, increase knowledge application, and decrease the mundane process of straight content memorization. Additionally, the combination of teaching/learning strategies of direct instruction, small group work, one-on-one instruction, projects, and hands-on learning allowed students a variety of experiences that were more fun and enjoyable than direct instruction alone. The teachers specifically utilized a variety of teaching/learning methods, along with the student-directed strategies to resemble the learning and task/project completion process that students could experience within the workforce.

SBAE teachers also utilized strategies which specifically focused on developing purpose for learning. To begin lessons, teachers utilized interest-based approaches to connect the students' interests or provide purpose to the lesson. Many of the interest approaches utilized focused on aligning the lessons' value or usefulness to the students' future goals. Additionally, teachers provided purpose through real-world examples,

experiences, and applications. Teachers also utilized partner work to engage students with peers who valued or enjoyed the content, as a means to help bring the purpose of learning the content to light. Also, teachers encouraged the students to reflect on their learning motivation through one-on-one interactions and reflection-based lessons. Teachers established the purpose for learning through interest approaches, aligning content to future aspirations, real-world experiences, and student reflection.

Intracurricular Total SBAE Program

SBAE teachers frequently and consistently incorporated FFA activities and SAEs into their classrooms. In the classroom, teachers frequently discussed FFA activities and SAE projects with students, encouraging officers and members through independent work to complete necessary tasks for upcoming FFA activities; conducting FFA activities during class; having students complete record book entries, state degree applications, and proficiency award applications; and developing and delivering FFA- and SAE-focused lessons. Kyle stated, "I think it's incorporating the three-circle model into our everyday life of SAE, FFA in classroom instruction, so when you add in that variety that lends itself to having so much going on in a 45-minute class." The incorporation of FFA and SAE also brought content and teaching method variety into the classroom. Students discussed how the variety helped to heighten their engagement and motivation within the classroom. Through incorporating FFA and SAE experiences within the SBAE classroom, teachers developed a more diverse, engaging non-formal learning environment.

SBAE programs also allowed for the scaffolding of student knowledge from one component to another. Teachers and students agreed that the SBAE classroom provided

the program a mechanism through which instruction and knowledge were first instigated. Then, the students applied their prior knowledge and incorporated it with the leadership and communications skills developed through the FFA chapter. Kyle affirmed, "That's their time to take what they're learning in the classroom, and expand upon it to make it their own experience." Simultaneously, students are able to apply their prior knowledge and develop more career-specific knowledge and confidence through their SAE projects.

Beyond constructing knowledge in the SBAE program, student motivation was also built through engaging in one component to the next. Teachers stated that the scaffolding of student motivation began in the classroom and grew from there. Kyle stated, "that's all intracurricular, that FFA to me at the base serves as the motivation for a lot of students, but we don't get to do these things unless this [learning] is accomplished in the classroom." In the classroom, students were able to experience knowledge and confidence development. Through FFA and SAE knowledge application, student confidence increased and their motivation to increase their knowledge, skills, and participation amplified. Additionally, students were able to experience interest related to a particular lesson or content area and were able to further engage in their interests through FFA activities, CDE competitions, or SAE projects. By scaffolding interest, student motivation increased as the students were able to connect more and more interest-provoking experiences.

Through the expressed teacher beliefs, it emerged that by connecting the classroom, FFA activities, and SAE projects students were provided experiences which expanded beyond the extrinsically nature of schools. Teachers and students agreed that the FFA and SAE allowed students to engage in non-formal educational and leadership

experiences that expanded beyond the accountability of grades and the environmental restrictions of formal classrooms. In addition, the relationships between SBAE teachers and students created a learning environment less driven by the extrinsic influences of their associated school systems. The observed learning environments included a decreased emphasis on assessments as a means to acquire grades, an increase in completion and participation grades, and course offerings and content lessons based upon student interest. Laura discussed her beliefs and utilization of grades, "I'm a believer that I don't give work for a grade, I give you the work because we learn from the work." The separated nature of the SBAE program also allowed students to pursue experiences related to their own interests, rather than set experiences within the school. Further, students could experience success and recognition within a more non-formal or even multiple settings. The SBAE program provided opportunities for all students, even those who struggle within formal classrooms, to learn, develop, and succeed.

Student Outcomes: Supported Psychological Needs and Motivational Outcomes

Through the convergence of the quantitative and qualitative analysis, it was found that students experienced many motivational outcomes including psychological needs support, thwarting of student autonomy, student interest, flow experiences, and extrinsic, internalized, and intrinsic motivation.

Student Competence

Within the qualitative analysis, one pivotal mechanism which fostered student confidence was the inherent nature of agriculturally based content and the career-focused goals of agricultural classes. Agriculturally based content lends more toward skill

development as students were being prepared for agricultural careers. Thus, the lessons taught tended to be more hands-on than traditional high school classes. Students discussed that the hands-on nature of the content allowed them to better engage within the learning process and increased their confidence in their ability to learn the content. Student 330 stated, "I'm a better hands-on learner than just sitting back and taking notes. So I like going in there and just looking at it, and it helps me work through the process on my own instead of just watching someone else do it." Agriculturally based content also lended more toward real-life experiences and examples being brought into the classroom in the forms of live animals at the school farm, teacher stories, student stories, videos, and CDEs. Students discussed experiencing confidence within the classroom when real-life experiences connected to their CDE content but also connected them to their future careers. Due to the career focus of the observed agricultural classes, learning and skill development were at the forefront of the teachers' methods. Teachers were observed and discussed providing open-note tests, allowing multiple tries on an assessment, and/or providing completion grades for assignments. Thus, students focused less on grades and more on actually learning and developing the necessary skills it took to be successful.

Much of the confidence students felt within the SBAE classroom stemmed from prior knowledge from previous classes or at home. Many students stated that when they possessed prior knowledge related to a subject, they felt more confident, were more likely to be engaged, and were more motivated to build upon their prior knowledge. While many students acknowledged their prior knowledge, many students, particularly freshman, admitted that they felt a lack of prior knowledge within agriculture and thus at times felt less confident. The teachers also acknowledged that freshman and students

who do not possess an agriculturally based background may also experience feeling deficient in both prior knowledge and confidence. To combat this, the teachers discussed scaffolding the content in a way in which students develop an understanding of the basic information first and then built the content from there. Teachers emphasized providing lectures to deliver explanations and examples to shape the base of knowledge. Teachers then utilized handouts, worksheets, projects, and research to continue to build the students' knowledge. Kate explained, "We always start out with a lot of notes, a lot of that background information and similar things. We build from there because you can't automatically run a marathon. You have to learn how to walk first." Many of the teachers stressed the importance of independent work, along with guidance and structure, during this time to allow the students to expand at their own pace and build their confidence around their ability to create their own knowledge. To complete the scaffolding process, the teachers would then utilize assessments to gauge the students' progress. One specific example of the scaffolding process was observed during a swine judging lesson. The students were previously introduced to cattle judging and the academic terminology that is utilized within swine judging but had little to no experience judging swine. Because swine judging was a new concept, the teacher had the students group up and watch a video of a class of gilts where a narrator talked about each gilt and how it would be placed in the class. The students took notes during the video, and a class discussion followed. To allow the students to apply their knowledge, they then watched another class of gilts and were asked to place them and develop a set of reasons with their group. The scaffolding process helps students develop base knowledge, which can be

further built upon to increase the confidence of all students no matter the prior knowledge they possess.

Teachers also developed student confidence through teacher-provided encouragement and praise. Teachers were observed providing encouragement for students to believe in their own abilities with, for example, phrases like "you can do it." The primary encouragement observed was the teachers' trust in the students to be able to complete a task or assignment. Kate stated, "…it depends on the kid. I've got some that I just know tear themselves down. You have to be the one to build them up. A lot of time that's done one-on-one." The teacher would demonstrate the trust they had in the students by allowing them to guide their learning and develop a sense of competence in the knowledge and skills they possessed. Laura affirmed, "But I have learned that if I empower them with that trust, they bloom. That's when the kid, actually, you'll see the greatest growth in a kid." This was best demonstrated by the sheer amount of independent work the students were given both within the class-related content and when studying with their CDE teams during class time. Besides encouraging the students, the teachers also provided praise and highlighted successes. Praise was utilized in the SBAE classrooms as both an acknowledgement of proper behavior and also for the quality of work being produced. It was observed that teachers provided praises such as, "your applications are getting better and better" or "look at how much we got done today." Teachers would provide praise for a job well done but would also incorporate an explanation for how students can improve for the next time. I also noted teachers highlighting student successes.

Much like the teacher within the classroom, the FFA advisor is a vital catalyst to helping the students build confidence. Observations showed that the FFA advisors provided praise and encouragement within FFA activities. The praise and encouragement centered upon discussing the members' potential, motivating them to keep engaging in the activity, acknowledging the difficultly of a task, and coaching them as they prepare for a difficult task or activity. Student 338 stated, "Like if you miss a bird [clay pigeon], everybody's there saying like, you're fine, just put it behind you. It just helps build confidence more." Additionally, the advisor provided the necessary knowledge and experience the members needed to be successful. The teachers provided one-on-one conservations around the student confidence level, times to reflect upon previous successes and failures, discussion of the members' goals, fun experiences related to the members' interest, and activities where students can build upon small successes. Regarding one-on-one encouragement, Kyle stated:

> it all comes down to that relationship of building their confidence of saying, "hey you performed really well on that test. You performed really well on that activity. You took the initiative and did this." Telling them thank you. Just noticing them do those things more than anything.

FFA advisors supported student confidence through praise and encouragement.

Specific FFA activities were designed and implemented to develop and build the members' confidence. Teachers discussed providing leadership opportunities for all FFA members, not just officers, to develop their confidence related to their leadership ability and to see the contribution individual members can have toward the overall success of the FFA chapter. Teachers and students discussed utilizing committee chair positions,

committee memberships, and decision-making within the chapter activities as ways to build the confidence of FFA members. Additionally, teachers developed activities in which FFA officers and members could teach others and advocate for agriculture. Activities such as Food for America allowed the students to share their passion for agriculture and allowed them to share their knowledge with others to build their confidence. Leadership Development Events (LDEs) helped to build students' confidence by pushing them out of their comfort zone through public speaking events. The structure of CDE practices and preparation also helped students build confidence within their CDE teams. The teachers provided explanations of CDE-related content; structured practices, which included constant drilling, explanation, and reviewing of CDE scoring guides; strategies to be successful; helpful and encouraging responses to student questions; and CDE-related examples. The structured preparation, along with the CDE-specific strategies and examples, helped students to rapidly increase their CDE knowledge, understanding of how to be successful, and their confidence. Finally, students discussed how their overall FFA participation helped to build their confidence through working with other members to accomplish and complete activities.

Beyond developing confidence through specific FFA activities, students were able to build confidence through the successes they experienced within the FFA. Teachers expressed that the FFA may be the only avenue where some students experience success and encouragement within their everyday lives. Kate stated, "They [students] might not be a great athlete, but they can come in here. They can be an officer. They can be good at a contest [CDE]." Kyle agreed, "I think we provide a variety of activities for students to be able to shine. Kids are not gifted in the same areas, so providing them with as many

opportunities [to shine]." The FFA provided opportunities for students to experience success.

While classroom application is common through written assessments, SBAE classrooms provided a variety of applications to help build student confidence. Students discussed how the hands-on nature of classroom applications increased their confidence in their ability to apply their knowledge to a future career. Students of one participating school discussed how many of their animal science-based applications included live animals from the school farm. Additionally, students noted that the teachers utilized multiple assignments to build upon or scaffold their knowledge, which would later be applied to an assessment. Students discussed feeling confident when they could apply prior knowledge from previous classes or when learning material that they could apply to a core high school class. I noted that the teachers utilized questioning strategies as a formative assessment to check for understanding. Kyle affirmed, "…more in-depth questions during the application side of things builds their confidence because then they're able to take what they learn, and they, actually, can then apply it." Teachers discussed utilizing lower-level questions that the students could answer and then increasing the question difficultly as the students' confidence grew.

CDEs and SAE projects provided mechanisms in which students could apply and further develop their knowledge and confidence. Students discussed how the content that they learned in class was applied within their CDE teams to increase their success. Additionally, students stated they could apply their classroom knowledge, FFA experiences, and agricultural interests within their SAE project. The ability to apply all three circles within the SBAE program helped the students to build confidence and

experience success. Student 330 stated, "at FFA, I like teaching about it and learning about it and stuff, and then I actually get to go out and do it [with my SAE]. And that makes me … it feels pretty good." Following the experience of success, students experienced more confidence within their CDE teams and SAE projects.

Student Autonomy

Much of the autonomy occurring within the SBAE program was fostered through students' independent work. Classroom based independent work was encouraged in a variety of contexts such as working in the greenhouse or shop, class assignments or projects, agriscience-based laboratory experiments, agriscience project research, CDE preparation during class time, and officers working on FFA activity preparation during class. During independent work the teachers were observed providing basic instruction, answering student questions, providing guidance when needed, and teachers would even be absent or out of the room at times. Laura discussed her teaching style: "…more of here are the directions, this is what I want in the end, you figure out how to get there." Students discussed feeling more motivated during independent work because they were allowed to work on their own, felt like learning was their decision to make, and felt like they could make a difference in their learning. Student 417 stated, "I feel a lot more independent that way. That way it's not like, somebody's constantly over my shoulder making sure I'm doing what I'm supposed to do. Pretty much free range, and I can make the decisions myself instead." Through independent work students also perceived that they were able to problem solve on their own, with minimum guidance or help from the teacher.

The FFA chapter also provided more opportunities for the officers and members to direct their actions through independent work. During FFA activities, the advisors played a secondary and supportive role for the officers and members, rather than directing and controlling the activity. During numerous activities, I found the advisors either gathering supplies, working alongside students, hanging in the background, or being completely absent. The secondary role the advisors play allowed for officers and members to work independently and solve their own problems. Additionally, the students perceived that the success of the FFA chapter fell on the shoulders of the officers, committees, and members. Thus, students were observed setting up for, managing student behavior during, running and coordinating, and cleaning up after activities. Due to the feeling of student-driven responsibility, members developed a sense of ownership within the FFA chapter. CDE preparation also allows for independent work during class time, after school hours, and during the students' leisure time. Students stated that the independent work allowed them to feel in control of their learning and increased their motivation to study and prepare for the CDE competitions.

Along with independent work, the teachers provided student choice, which increased autonomy. In order to provide student choice, teachers identified that they first needed to be able to trust the students to make appropriate decisions. Then the students' skills would be developed and resources would be provided to support the choices they made. Some of the teachers also discussed providing structure for the students in the means of assignment/project guides or rubrics, while others provided guidance as students' questions arose. Robin discussed, "Some things are structured in a sense, and I have specific objectives or skills and competences they need to learn. Then they get

choices within that option." Regarding the autonomy supportive process within laboratory experiments, Student 249 stated,

> She'll [teacher] give us the directions, she'll provide everything we need, and she'll help us when we need it. But for the most part, when we do labs in class, we get into groups and we just do it ourselves, and we absorb the material.

Through the choices offered, students identified that they experienced feeling like an adult, a desire to put more time into the work, and a sense of shared responsibility of learning between themselves and the teacher. Student 330 stated, "It felt like she trusted us to make the right decisions for us, and kind of gave us more responsibility and independence." However, when a lack of structure or guidance occurred the students felt pressured and overwhelmed. Student 417 stated:

> if I don't know what to do at all, because it's like, I could be doing this or should I do this, or what about this. Then I just kind of shut down until I know exactly what I'm supposed to do.

When some of the students felt overwhelmed, they sought guidance either from the teacher or a peer. Student choices were identified within (a) agricultural choice selection, (b) order of class units, (c) classroom projects such as speeches in which topics and research methods are chosen, (d) proficiency award application areas, (e) group work partners, (f) agriscience projects, and (g) CDE preparation during class.

The teachers also provided choices for students within the FFA chapter. Students experienced choices related to what activities they wanted to participate in, decisions regarding FFA activities, and award applications they wished to complete. The choices students were provided allowed them to feel as if they were a part of something greater

than themselves. Additionally, the choices increased the students' sense of independence and also allowed for them to engage in activities they have an interest in. The teachers also asked students what they wanted and would provide choices based on the students' wants and needs.

Students were also provided choices within their SAE projects and CDE teams. Because SAEs are typically conducted outside of the school, students choose what area of interest they conduct their project in. By being able to choose their project, students are able to conduct a project they are interested in. Students are also able to select SAE projects which relate to their future career aspirations. Additionally, students make management decisions within their SAE with either some guidance from parents or the teacher or no guidance at all. Within CDE practices, the students made choices to determine what content they wanted to learn and how they wanted to learn it. Steven stated, "Just like contest teams. I'll do what they want to do for the most part. I usually give them some options and then allow them to choose where we go." The students felt that they were directing their own learning but also sharing the learning process with their team members and the SBAE teacher.

In addition, teachers encouraged autonomy through listening and encouraging students. In the classroom, I noted teachers listening to students' stories, problems, and questions. Additionally, teachers asked encouraging questions to gauge student interest. Teachers encouraged students to find solutions on their own, and in order to assist with this, teachers provided hints and clues to the students. During CDE practices, observers also noted that the students were able to provide their own solutions and possessed and handled their own learning materials.

Although autonomy was supported within the SBAE program, I noted teacher control through verbal prompts. Teachers would utilize verbal prompts such as directives, deadlines, criticisms, and threats. Within the classroom, teachers utilized directives in two forms, one form was to direct and facilitate learning, and the other was to control students' negative behaviors. Directives that were utilized to direct and facilitate learning were typically calm and included instructions, steps, or procedures to follow or commands on how to complete assignments. Directives that were utilized to control students' negative behaviors were typically more forceful and direct and included statements of how the teachers wanted the students to behave. The teachers would also encourage student compliance by routinely referencing deadlines for assignments and when necessary would also reference the schools' late work policies. Additionally, while at a much lesser rate, teachers would also utilize criticisms and threats to encourage student compliance.

The primary way in which autonomy was thwarted within the FFA chapter was by the teacher providing directives to the FFA officers and members. Directives were primarily given to command students on how to set up for an activity, instruct students about CDE content, control student behavior, and manage the activity environment. In addition, directives were also utilized to prepare students for student-led activities or autonomous work. I found teachers provided directives prior to providing independent work within the FFA chapter activities, student-led leadership activities conducted during an FFA meeting, and CDE self-directed learning. For example, at a community appreciation breakfast, the FFA advisors provided directives to the students, so when the activity started and community members arrived, the students were autonomous by

seating community members, serving breakfast, filling drinks, and busing tables without advisor direction or guidance. Student autonomy was also thwarted when teachers were observed providing direct instruction in which the teacher was the primary speaker, provided solutions for students, and held the learning or activity materials. Students felt a lack of autonomy, as they discussed feeling pushed and pressured to participate in certain activities. The feeling of being pressured was primarily felt related to participating in CDEs and LDEs and completing officer required tasks. Students also discussed feeling overwhelmed by the amount of work they were required to complete on their own, with little to no structure or guidance. However, once students engaged with the CDE/LDE content or were provided structure/guidance, the feelings of being pushed, pressured, and overwhelmed subsided.

To encourage positive student behaviors and control for negative student behaviors, teachers provided rewards and incentives. One of the most prominent rewards or incentives the teachers utilized within their classroom was grades. Teachers would utilize grades as a method to pressure students into completing notes, assignments, or projects. Grades were also utilized as a way to encourage students to complete award applications, participate in CDEs during school hours, and participate in FFA activities. Regarding CDE participation, Laura stated, "Their grade is directly tied to it." Additionally, incentives and rewards were provided to encourage students to complete specific tasks such as taking notes, cleaning the shop, and completing proficiency award applications. Incentives and rewards were also provided to control student behavior such as talking during direct instruction or not completing the necessary assignments. Incentives and rewards included but were not limited to playing music while working,

extra credit, free time, food, and scholarships. Grades, incentives, and rewards were all provided as a means to manage and control student behavior.

Autonomy within the FFA was also thwarted by the incentives and rewards the teachers provided based upon student participation. All participating schools utilized a points/reward system to encourage and track student participation related to FFA activities. FFA chapters designated specific point values students could receive by participating in the various activities offered. Based on the points system, student could receive incentives/rewards for their participation. Additionally, the schools offered incentives based on CDE participation/accomplishments, completing proficiency award applications, and meeting chapter membership participation goals set by the officers. The incentives/rewards included but were not limited to chapter paid dues and FFA t-shirt, food-based rewards, monetary rewards, and trips. Although the points system and incentives thwart autonomy, the students perceived them as an effective tool to motivate FFA participation. The SBAE teachers also acknowledged that while the points and incentives were extrinsically based, they believe they were an effective means to engaging initial member participation. The teachers also discussed their hope that, following the initial participation, the students could develop more internally based motivation to continue their participation. Laura stated, "By having some of that external motivation and that external reward of winning money, recognition, they're like, it was really cool going across the state stage, those types of things, that they now have the internal motivation." The utilization of rewards and incentives thwarted student autonomy.

Although choices were provided within the SBAE program, I also witnessed a significant lack of choices, specifically within the SBAE classroom. It was observed that teachers provided fewer choices for freshman and sophomores, whereas more choices were provided for upperclassmen. Additionally, three of the five teachers provided little to no choices related to personal technology use. At one school students were required to check in their cell phones before class, while at others, computer, tablet, and personal technology use was strictly dictated by the teacher. Further, students were provided little to no choices regarding their participation in CDEs, agriscience, and proficiencies. Within many of the participating schools, students had to participate in CDEs but could choose what content area they participated in. Some schools required all students to complete a proficiency award application in a teacher-selected area, while other schools encouraged students to complete them if they so choose. One school required students to either participate in CDEs or complete an agriscience project. Students could then select the CDE team or agriscience topic they wish to complete. While choices do exist within the SBAE classroom, many of the choices provided are limited or teacher controlled.

Broad Motivational Outcomes

Students experienced a wide range of motivational outcomes within SBAE programs. To begin, students identified a variety of ways in which they were extrinsically motivated within the SBAE program. One of the primary ways in which students were extrinsically motivated was through the rewards and incentives provided. Students were motivated to engage in the classroom due to wanting to earn respectable grades for college entry and satisfy their parents. FFA participation was motivated by the points system, "cool" trips, acquiring leadership medals, and food. Regarding the points

system, Student 104 stated, “It’s kind of like a goal from what I have seen from kids. They are trying to reach a goal of so many points and get so much done.” Another way in which students were extrinsically motivated was through encouragement and at times pressure from the agriculture teacher. Teachers encouraged, pushed, and pressured students within all facets of the SBAE program, and students discussed feeling motivated by following the initial pressure. In the classroom, students were also extrinsically motivated by the nature of the hands-on, outside work, and the lesser amount of homework. Students were extrinsically motivated to engage in their SAE projects through the ability to make money and win scholarships through award applications. While many students acknowledged the external nature of rewards, incentives, and pressure, they also acknowledged their motivation to participate based upon the extrinsic motivators. Students discussed that as they continued their engagement, they were able to discover activities or content areas that they could internalize. Student 330 stated, “ever since then, it’s just been building, and I just enjoy it more and more every year.” SBAE programs and students experienced a wide range of extrinsic motivation.

SBAE students also experienced more internalized motivators. Within the classroom, students experienced internalized motivation through connecting knowledge gained to their future careers, encountering more individualized methods and learning, engaging in experiences that connect to their self-schemas or home life, expanding beyond their comfort zone, having enjoyable learning experiences, and internalizing the hands-on nature of the content. Related to connecting to the content, Student 249 stated, “It’s easy for me to relate to these classes, and use them in my everyday life, because I’m involved in the Ag industry.” Regarding internalizing the hands-on nature Student 109

stated, “It helps me better understand it [content] more and I can like feel better than just hearing it and writing it down on a piece of paper and not understanding it clearly.” Students experienced internalized motivation when preparing for CDE competitions through the desire for self-improvement, enjoying knowledge development and application through competition, and aligning CDEs with their competitive self-schema. FFA participation encouraged internalized motivation through knowledge gained to improve self, career, and life skill development, activities that related to self-schemas and personal experiences, teaching others, having a say in chapter activities, and enjoyable activities. SAE projects encouraged internalized motivation through connecting knowledge application to agricultural classes and future careers, and self-improvement through structured leisure time focusing on financial, career, and life skill development. Kate stated, “The kids that are very SAE and proficiency-driven, that is their career and they know that’s how they get it … Most of my SAE proficient kids are production ag kids. They want to come back and they want to farm.”

SBAE students experienced a range of instances where intrinsic motivation was fostered. Students experienced intrinsic motivation through their sheer interest or enjoyment within classroom content, FFA activities such as community service events, CDE preparation and content, and SAE project career and content areas. Student 107 said:

> welding is just something that really interests me, just, it’s neat seeing how metal can be melted together to hold strong stuff. I feel like after I leave here and after I get off work and go home and weld more beads, I feel like it’s nothing, it’s just going to make me better.

Students were intrinsically motivated in both SAEs and CDEs through student autonomy and their ability to direct the learning and preparation process. Student 249 stated:

> I want the end result to show that even when I was on my own, and even when I wasn't with my advisors, or whoever was helping with our contest [CDE], I want people to see that I've learned and I have done a good job, even when I was studying on my own.

Further, Student 249 discusses feeling motivated through classroom autonomy, "not only does it teach us the material that we're learning, but it also teaches us how to find that material, and how to learn it, and absorb it ourselves, in our personal way." Student choices engaged students' interests and intrinsic motivation, as one student explained: "I actually like that [being given choices] because sometimes you get to learn more about a subject that you want to learn more about it." Flow also fostered student intrinsic motivation and was experienced during interesting classroom assignments and projects and active FFA activities such as trap shooting. Intrinsic motivation was also fostered through their interest in engaging in novelty and new experiences in the SBAE program. A student explained, "I like that we do a variety of different things." Intrinsic motivation was experienced and fostered within the total SBAE program.

Summary of Convergent Findings and Substantive Theory

Within the substantive theory, teacher motivational beliefs influenced the formation of the central phenomenon, the motivational strategies, and the student outcomes. The supported need of relatedness emerged as the central phenomenon and allowed for other motivational strategies and psychological needs to be supported. Teachers then utilized extrinsic and intrinsic motivational strategies and the

intracurricular nature of the SBAE program to foster student motivation and needs support. Within the needs support process, the students experienced competence and autonomy support, autonomy thwarting, extrinsic motivation, and intrinsic motivation.

CHAPTER 5—DISCUSSION

Purpose of the Study

The purpose of this study is to identify the strategies, actions, and processes school-based agriculture education (SBAE) teachers utilize to support the psychological needs of students and thus develop the students' intrinsic motivation. This study will investigate strategies utilized both within and outside the agricultural classroom.

Research Objectives and Revised Questions

Objective:

1. Describe the support of the SBAE students' psychological needs within the SBAE program.
2. Describe the students' perceived intrinsic motivation within the SBAE program.
3. Describe the autonomy-supporting orientation of the SBAE teachers.

Central Question:

How are the psychological needs supported within the SBAE program?

Subquestion:

1. What influences how the psychological needs are supported?
2. What motivational outcomes are experienced within the SBAE program?

Convergent Question:

What actions and processes that the SBAE teachers utilize within and outside of the SBAE classroom support the psychological needs of students and thus develop students' intrinsic motivation?

Discussion

Motivation as a Process

As demonstrated by the substantive theory, supporting the psychological needs and intrinsic motivation of SBAE students was a sequenced process built upon teacher beliefs and student experiences. The study shows that student needs and motivational support were not triggered through a one-time awe inspiring experience, but were rather cultivated through deliberately building upon experiences and successes. The emergence of psychological needs and motivational support as a process aligns with previous research that emphasizes motivation as a process, not a singular outcome or product (Schunk, Meece, & Pintrich, 2014). Additionally, student needs support and motivation did not occur in one standalone component, but was rather fostered through the intracurricular nature of SBAE programs. Teachers also acknowledged to want to utilize motivational experiences as a process to shift student motivation to more internal. The desire to shift student motivation within SBAE programs aligns with previous research, which identifies student motivational shifts within CDE preparation (Ball et al., 2016). Within the motivational process and within the desire to shift motivation, teachers intentionally began the need supporting process through developing student relationships and utilized the relationships as a foundation to build student motivation upon. The teachers then utilized belief-supported strategies and intracurricular experiences to further construct the students' motivation. While the teachers utilized specific strategies within the process, the strategies lack a clear intent on developing more internal or intrinsic motivational outcomes.

The findings imply that because supporting students' psychological needs and motivation is a process, SBAE teachers must be dedicated to upholding the process as students progress through the SBAE program. Additionally, the process of supporting needs and motivations must be incorporated into the day-to-day activities of all SBAE program components. Teachers need to be intentional in their actions to motivation students based upon the specific outcomes desires. Thus, teachers need to develop an in-depth understanding of how to utilize motivational strategies within the identified process in order to truly shift student motivation. Additionally, by incorporating motivational experiences in all program components, teachers can create and build upon more intracurricular experiences to further support the psychological needs of students. Teachers also need to be intentional in connecting the various SBAE program components, as this process is not automatic and must be fostered by the teachers' actions.

The Conceptualization of Psychological Needs and Intrinsic Motivation in SBAE Programs

Within SBAE programs, relatedness resembles a family-like atmosphere where students experience strong teacher and peer relationships. SBAE teachers intentionally fostered relationships with students based upon mutual caring, respect, and trust. While previous PYD literature shows this level of adult to youth relationship (Eccles & Templeton, 2002; Lerner et al., 2009), SBAE teacher to student relationships seem stronger than described in the formal classroom literature (Csikszentmihalyi & Larson, 1984). Additionally, teachers intentionally encouraged peer to peer relationship development. Peer to peer relationships included: friends being able to socialize away

from traditional school expectations, developing teamwork when completing tasks, and a genuine interest in motivating and helping their peers. Again, the strength of peer to peer relationships contradicted previous formal classroom research which indicates peer socializing is typically non-existent (Larson, 2000).

SBAE-based student competence resembled the confidence students developed related to their ability to apply knowledge developed through personal, leadership, and career skill growth. Students are able to develop knowledge and skills which they can apply to future careers and aspirations, which builds career related confidence. Students also developed career related confidence through knowledge and skill application within SAE projects. Additionally, students engaged in FFA activities to enrich knowledge and skills related to personal and leadership development, which aligns with previous literature (Phipps et al., 2008). Student confidence was then enhanced when students were provided opportunities to apply the knowledge and skills by taking leadership roles within FFA activities. The competence developed within SBAE programs resembled that of research supported competence which refers to the confidence one has within action and not that of sole skill attainment (Deci & Ryan, 2000). SBAE programs create a catch all system, where students enhance confidence through the development of knowledge and skills and apply them within multiple program facets.

While student autonomy was supported, autonomy looked very different within the various SBAE program components. Autonomy was highly supported within FFA activities and SAE projects and included: student directed participation, student choices, and student developed and managed activities. Within the classroom, student autonomy was less supported and was typically reserved for student choices within assignments and

projects. The student directed assignments and projects typically followed more teacher directed learning activities, primarily direct instruction. The variance in student autonomy was due to the teachers' perceived need for control, which aligns with previous teacher control research (Reeve, 2002; 2009). Within the classroom, teachers felt need to control the flow of knowledge transfer from expert to novice. Less teacher control was needed within the FFA chapter and SAE projects and the teachers wanted to develop a sense of student ownership within FFA and SAE activities.

Findings implied that SBAE programs provide a unique context for needs support. SBAE programs step beyond the traditional classroom and provide real life student-directed leadership and career applications where autonomy and competence can be fostered. Further, the multiple SBAE program components, which are primarily conducted outside of school time, allow teachers to develop strong teacher to student and student to student relationships. Additionally, the teacher intentionally developed relationships first and then scaffolding the needs support process. While SBAE programs are unique in their inherent structure, relationship development to then foster other needs support can be conducted in traditional classroom and other PYD settings. The incorporation of real world applications can also be integrated to further foster psychological needs support.

Students experienced unique intrinsic motivation within SBAE programs, which is not typically seen within formal classroom based activities. Intrinsic motivation was fostered primarily through SBAE program specific activities such as CDEs, FFA activities, and the intracurricular ways in which classroom, FFA, and SAE experiences were connected and applied. Within SBAE programs, student intrinsic motivation

resembled the developed interest and enjoyment experienced within classroom and/or FFA activities, which then fostered further student directed engagement. The intrinsic motivation experienced within SBAE programs aligns with previous intrinsic motivation literature, which states intrinsic motivation is engagement due to interest and enjoyment (Ryan & Deci, 2002). Flow was also a crucial component of intrinsic motivation, as flow was experienced when students were able to further unite their areas of interest in the SBAE program. Further, interest and enjoyment fostered within the classroom was further enhanced through connections made within CDE, SAE, and FFA experiences. CDEs were a major program mechanism which connected interesting classroom content to enjoyable non-formal learning experiences to foster further student directed engagement. Within the program, students developed content specific intrinsic motivation which was not typically experienced within formal classrooms (Deci & Ryan, 1985), while also experiencing PYD specific intrinsic motivation which has been observed within previous research (Pearce & Larson, 2006). SBAE intrinsic motivation is unique in that following the development of interest and enjoyment, students have multiple avenues to further their intrinsic motivation within the program. Whereas traditional formal classrooms, athletics, or other PYD programs lack multiple program components where students can further the interest, enjoyment, and intrinsic motivation experienced.

Within SBAE programs, the findings implied that students experienced classroom and FFA specific and total program interest and enjoyment. Through the independently developed classroom and FFA interest and enjoyment, context specific intrinsic motivation was fostered. Although context-specific intrinsically motivational

experiences occurred within SBAE programs, many interconnected experiences of interest and enjoyment also existed. These interconnected experiences exhibit the intracurricular nature of SBAE programs, where the programmatic circles of classroom/laboratory instruction, FFA organization, and SAE projects overlap. It is within this overlap that an individual's experience of interest or flow occurs and then is built upon in another component of the program. Students can further pursue their interests or scaffold their motivation within the collective SBAE program, which could potentially increase the intrinsic motivation experienced and the benefits associated with it. As intrinsic motivation is fostered students can experience an increase in learning (Csikszentmihalyi &Larson, 1984; Lepper et al., 2005), long term engagement and motivation (Simpkins et al., 2006; Larson & Rusk, 2010), and deeper processing (Vansteenkiste et al., 2006). By encouraging a complete SBAE program focused on delivering all three circles, youth can further pursue their interests, increase intrinsic motivation, sustain motivation, and sustain participation.

Expanding Beyond the Extrinsic Nature of School Systems

SBAE programs are intended to be utilized as intracurricular, collective programs where unique experiences of connecting agricultural based content, positive youth development experiences, and career exploration occur through a lens of student interest and aspirations. Although previous research supports the intracurricular nature of SBAE programs (Phipps et al., 2008), no research exists that examines the ways in which intracurricular experiences expand beyond extrinsic nature of schools. Teachers specifically utilized student interest and aspirations to dictate the ways in which knowledge, career skills, and life skills were developed and interconnected within all

SBAE program components. Focusing on and incorporating student interests within classroom experiences contradicts previous formal classroom research which found that student interests are often overlooked within classrooms (Csikszentmihalyi & Larson, 1984; Deci & Ryan, 1985). Additionally, teachers purposefully connected specific program components during learning- and leadership-based activities to strengthen the impact and motivation experienced. Through the intentional connections made between the students' interests, aspirations and intracurricular experiences the teacher were able to allow students to experience motivation beyond the extrinsic nature of school systems.

School systems tend to set aside student interests to focus on more extrinsically based policies and procedures. Many school policies are in place to maintain a constructive learning environment through student discipline and accountability. SBAE programs provide students mechanisms which reach beyond the extrinsic policies and procedures, while still maintaining the necessary environments which foster learning and youth development. Within SBAE programs, students are provided self-determined activities through student choice and direction, within school systems which typically hinder autonomy (Deci & Ryan, 1985). Teachers also emphasized the importance of the learning process for future career application, over the acquisition of grades. Program components such as FFA activities and SAE projects also encouraged non-formal learning outside of the traditional classroom setting with the complete absence of grades and external accountability. Teachers also connected student interest in classroom concepts to the non-formal learning experiences to strengthen student interest and engagement within the total SBAE program. Teachers intentionally utilized the intracurricular nature of and components within SBAE programs to provide avenues for

students to experience learning, interest, and autonomy outside of the extrinsic nature of school systems.

The extrinsic nature of and the extrinsic ways in which students are asked to operate within school systems are detrimental to student motivation. Previous formal classroom literature indicates schools require students to sit quietly, classroom content is neither interesting or compelling (Deci & Ryan, 1985), and teachers focus on content delivery rather that fostering intrinsic motivation (Csikszentmihalyi & Larson, 1984). From the findings it was implied that because much of the SBAE program is conducted outside of school hours, the teachers believed the program could motivate the students far beyond the reach of the school's policies and procedures. Teachers believed students should be motivated far beyond the confines of grades and the traditional behavioral requirements of formal classroom settings. Since SBAE programs can expand beyond extrinsic schools, students can experience more benefits such as increased academic achievement (Lepper et al., 2005), an increase in self-regulated learning (Young, 2005), and an increase in the utilization of cognitive strategies (Pintrich & De Groot, 1990).

Dynamics of Teacher Control

The teachers possessed a variety of autonomy-supportive or controlling orientations. While a range of orientations were observed, the teacher participants tended to possess a more controlling orientation, rather than autonomy supportive. The tendency to possess a more controlling orientation aligned with previous research, which emphasizes that teachers tend to employ more controlling teaching styles and methods (Reeve, 2002; 2009). A teacher's autonomy-supportive or controlling orientation is influenced by his or her motivational beliefs and thus also influence the motivational

strategies utilized within the classroom. By examining a teacher's orientation, a glimpse into how teachers enact their motivational beliefs is formed.

The importance of fostering internally based or interest driven student participation was rampant within the teacher discussions but was lacking within their actions. Primarily the teachers held very strong beliefs in the need to shift student motivation but feel short in consistently committing to the sole use of internal or intrinsic based strategies. Though teachers believed shifting student motivation was a key step in the motivational process, their controlling orientation hindered them from fully committing to shifting student motivation. The hindrance of internal motivational strategies based upon the teachers' controlling orientation aligned with previous classroom research (Reeve, 2002; 2009). Once teachers utilized internal or intrinsic motivational strategies, extrinsic strategies should have been reduced or completely removed to promote internal motivation. However, the teachers continued to utilize extrinsic and controlling strategies because they believed they must motivate students with some form of extrinsic motivators.

Findings showed that the conflicting motivational beliefs and controlling orientation of teachers created a divide within the teachers' ability to enact what they discussed as a crucial motivational process. The teachers' controlling orientation served as an anchor, which grounded teachers to consistently utilizing extrinsic approaches and providing a safety line to venture into internal or intrinsically based tactics. Teachers undermined the shift in student motivation by not fully committing to the internally based motivational process. While some students experienced a motivational shift, most extrinsic motivational strategies impeded the shift from occurring within many students.

Student motivation spanned the spectrum between extrinsic and intrinsic motivation. Specifically, previous research indicated that the ability of students to experience intrinsic motivation is suppressed in the presence of teacher controlling orientations (Deci & Ryan, 1985; Reeve, 2002; 2009). Although a motivational shift may have occurred in some students, an opportunity to positively influence student motivation was lost when teachers could not expand beyond their controlling nature.

Contextual Issues Between Teacher Belief Formation and Utilization to Support Motivational Outcomes

It was concluded that teachers held very specific beliefs about student motivation and how the school, SBAE program, and teacher influenced the students' motivation. Further, teachers believed students are driven by a variety of motivators and require a variety of motivational strategies. Also, the teachers substantiated that no matter the motivational drivers, no motivational strategy would be effective without having developed relationships with students. Even though it is unclear how the teacher beliefs were specifically formed, teachers cited numerous years of experience and developing a profound understanding of the students they work with. Teachers constructed very specific beliefs based off of their developed wisdom of practice.

The teachers' beliefs and wisdom of practice highly influenced the ways in which teachers intentionally motivated students. It is undeniable that the SBAE teachers believed in the importance of and developed strong caring relationships with students as the foundation of the motivational process. Following the development of relationships, teachers then intentionally incorporated student interest and enjoyable activities within all SBAE program components. Teachers also intentionally incorporated experiences where

student confidence was developed through application within one or more program components. Student autonomy was also intentional supported through student directed FFA and SAE activities, while also being less supported within the SBAE classroom. Through the intentional motivational actions of the teachers needs support and intrinsic motivation was seen within the SBAE programs.

While teacher beliefs did positively support psychological needs and intrinsic motivation within the SBAE program, teacher beliefs also undermined the motivational process. Teachers believed in the importance of developing relationships, supporting confidence and autonomy, and incorporating interest, but teachers also believed that in order to motivate all students a potpourri of motivational strategies should be constantly utilized. Teachers believed students possessed a variety of motivational drivers; thus they continually utilized a variety of extrinsic, internal, and intrinsic motivational strategies. Further, the teachers exhibited a great divide within the beliefs they possess about their roles as both teachers and FFA advisors. As FFA advisors the participants believed they should foster student-directed activities and allow for as much student ownership of the FFA chapter as possible, whereas the belief in student ownership was nearly vacant in the day-to-day workings of the SBAE classroom.

From the findings it was implied that the contradictory nature of teacher motivational beliefs and motivational strategies utilized caused inconsistencies in student motivational outcomes. While the psychological needs and intrinsic motivation of some students was supported, the constant desire to and utilization of extrinsic motivational strategies undermined the needs support and intrinsic motivation process. The use of extrinsic motivational strategies which undermined autonomy and intrinsic motivation

aligns with previous research (Deci & Ryan, 1975). The teachers' controlling orientation also undermined the teachers' ability to commit to utilizing autonomy supportive strategies within the SBAE classroom, as compared to the FFA chapter. Additionally, the lack of intentionality when utilizing more general motivational strategies, created student outcomes which mirror the range of strategies utilized. Thus, if teachers utilized more consistent internally or intrinsically based strategies, the student outcomes would likely mirror more internal or intrinsic motivational outcomes. The lack of intentionality also demonstrates that teachers may be grasping at straws when trying to motivation students beyond specifically developing relationships, building confidence, and connecting student interest.

Recommendations for Practice

While the results of the study came from a limited sample in a single state, some recommendations can be made that readers can assess for application to their own situation. SBAE teachers and PYD adult practitioners are encouraged to reflect on their practices to see how their current needs and motivational support practices align with the identified theory. SBAE teachers and PYD practitioners could then develop a process to support youth needs and motivation that aligns with the identified theory but also aligns with their current context.

Practitioners should reflect upon their motivational beliefs. Beliefs influence the ways in which motivational strategies are utilized and motivational outcomes are fostered within SBAE and PYD programs. Thus, SBAE teachers and PYD practitioners must reflect on their beliefs and determine how their beliefs influence the ways in which they motivate youth. To begin, teachers should examine their motivational orientations in

order to identify whether they tend to be believe youth are extrinsically or intrinsically motivationally driven. Next, SBAE teachers and PYD practitioners should reflect upon what they believe to be the most beneficial forms of motivation. Then, SBAE teachers and PYD practitioners should weigh the differences between their orientation and the most beneficial intrinsic motivational forms to determine the best ways to motivate youth. Lastly, they should determine how their orientation influences the current motivational strategies they utilize and determine if the strategies align with what they believe are the best forms of motivation.

SBAE teachers and PYD practitioners should also analyze how to best develop relationships within their youth programs. Within SBAE programs, teachers need to consider how the time outside of the classroom that FFA activities and SAE visits require influences their ability to build teacher-to-student relationships. SBAE teachers also need to contemplate how to develop classroom relationships with students who are less active in the FFA. Teachers also need to reflect upon balancing their ability to create caring personal relationships with students and remaining the authority within the SBAE program. PYD adult practitioners should reflect upon how caring youth relationships can be developed within their specific non-formal context. PYD programs can harbor a wide range of youth who possess an array of ages, backgrounds, and prior experiences, all of which could influence the practitioners' ability to connect with the youth.

Current motivational practices should also be reviewed and altered to best suit the desired student motivational outcomes. If SBAE teachers and PYD practitioners truly desire to promote internal or intrinsic motivation, they must develop and intentionally utilize strategies which will foster internal drive within youth. Thus, they need to

intentionally incorporate the youths' values, goals, future aspirations, and interests within their program. By also supporting the psychological needs of competence, relatedness, and autonomy, teachers will also foster more internalized youth motivation. Teachers should intentionally motivational strategies that foster youth confidence, a sense of belonging, and youth-directed activities should be utilized within SBAE and PYD programs. SBAE teachers and PYD practitioners should also reflect upon the extrinsic motivational strategies utilized. If extrinsic motivational strategies are constantly utilized, further reflection should examine how extrinsic drivers influence the development of internal or intrinsic motivation.

Motivationally based professional development should be developed and delivered to help in-service SBAE teachers and PYD practitioners reflect upon and alter their motivational processes. Professional development workshops should be developed to assist in-service professionals in reflecting upon their motivational orientations and beliefs. Additionally, empirically supported motivational orientations that foster the most beneficial youth outcomes should be disseminated and fostered among in-service professionals. The workshops should also introduce SBAE teachers and PYD practitioners to empirically supported motivational processes and strategies that help to foster youth needs support, internal motivation, and intrinsic motivation. The workshops should also assist in-service professionals in creating a motivational plan which focuses on intentional motivational processes and strategies.

Beyond assisting in-service professionals, pre-service courses that focus on fostering motivational beliefs and strategies should also be developed and delivered. Teacher preparation programs must take a more explicit and intentional approach to

introducing pre-service teachers to student motivation and developing their ability to purposefully motivate students within SBAE programs. Motivationally based standalone courses can be developed to specifically analyze motivational theories, applications, and strategies while incorporating various classroom, learning, and PYD strategies.

To enhance pre-service students' understanding of youth motivation, motivationally based lessons can be incorporated into existing courses. Motivational theories and strategies can be incorporated into existing courses that focus on non-formal youth programming, youth and adolescent development, learning theories, teaching methods, curriculum and assessment planning, and SBAE program implementation. Specifically, motivation can be used as the lens in which to view programmatic and teaching preparation, implementation, and assessment strategies. Motivationally based lessons centered upon lesson planning, teaching methods, behavior management, classroom management, and assessment can be delivered to enhance the pre-service teachers' ability to proactively address student motivation. Motivationally driven preparation, implementation, and assessment strategies could also be disseminated within these lessons, which focus on the inclusion of student interest, values, and goals. Through professional development and pre-service courses, the ability of teachers and practitioners to positively influence students' motivation increases.

Recommendations for Research

This study is a beginning step to identifying the process through which student psychological needs and motivation are supported within SBAE programs. To further substantiate the needs support process this mixed-methods study should be replicated to include more SBAE programs and should also expand to include SBAE programs from

multiple states. Following the study expansion into SBAE programs, the process should also be examined for possible alignment within other career and technical education (CTEs) classes and career and technical student organizations (CTSOs). SBAE and other CTE programs share many similarities, and the examination of the needs supporting process can greatly impact CTE programs and students.

Though SBAE programs are unique in their ability to connect classroom learning with PYD activities, further research should be conducted to determine how youth psychological needs are supported specifically in PYD organizations. Due to the non-formal learning environment typical of PYD activities, independent qualitative studies should be conducted that specifically examine student psychological needs support within PYD organizations. Following the qualitative PYD studies, further examinations should be conducted to compare and contrast the processes within SBAE and PYD programs. The further examinations could further identify how formal and non-formal learning environments influence student needs and motivation.

While this study identified the process to support the psychological needs of students, further research should be conducted to examine the influences and outcomes within the substantive theory. To begin, qualitative studies should be conducted to further examine the formation, perpetuation, and application of teachers' motivational beliefs. Additionally, qualitative and quantitative studies should be conducted to examine the specific motivational strategies utilized within the SBAE program components. Qualitative studies should examine the alignment of teacher beliefs and the motivational strategies utilized. Quantitative studies should be conducted to determine the frequency of motivational strategies utilized and if any patterns exist within the

strategies utilized. Further, research should be conducted to investigate the extent to which SBAE programs are utilizing their intended intracurricular nature and how the extent of the intracurricular nature influences student motivation. Lastly, research should be conducted to further examine the motivational outcomes SBAE students experience. Quantitative and mixed-methods studies should be conducted to identify the motivational orientations, motivational drivers, and motivational outcomes of SBAE students. Qualitative studies should be conducted to thoroughly examine the motivations of students and identify any potential student differences or experienced shifts in motivation through prolonged engagement in SBAE programs.

APPENDIX A

Teacher Consent Form

Study Name: Conceptualizing the process to support student psychological needs and intrinsic motivation within SBAE programs

Investigator's Name: Amanda Bowling

Description of Study: This study involves research and includes questionnaires, observations, and interviews, which will be conducted to determine what strategies agriculture teachers use which support students' psychological needs and intrinsic motivation.

Procedure of the Study: If you agree to participate in the study, you would:

- Complete a 15 minute questionnaire
- Be observed by a researcher while teaching and during two FFA activities. These activities will be video recorded to ensure accuracy of the observation.
- Be interviewed up to two times by a researcher following the observations. This interview will be audio recorded.
- Provide GPAs for students who receive signed parent consent

How long will you be in the study?
Your participation will consist of a 15-minute questionnaire. The classroom observation will last up to 5 hours and will cover three to five classes. The FFA activity observations will last up to three hours per observation. The observations will be conducted at various times and will be concluded by the end of January. The research interviews will last up to 1 hour each.

What are the risks of this study?
The risks of this study are not expected to be any greater than risks you might encounter in their daily lives.

What are the benefits of this research?
By better understanding the strategies used by agriculture teachers within and outside of the agriculture classroom, the psychological needs and intrinsic motivation of students can be better supported.

Participation is voluntary:
Participation is this research study is voluntary. You may refuse to participate in this study or withdraw from the study at any time. Refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled.

What about confidentiality?
The researchers in this study will keep all information about the your participation in the study confidential. Information produced by this study will be stored in the investigator's

computer and will be password protected. Information will not be given to anyone who is not affiliated with this study in a form that could identify you.

Who can I talk to about this study?
If you have any questions about the study, please call Amanda Bowling at 636-359-3231 or email ambwd6@mail.missouri.edu. You may also contact the advisor for the study, Dr. Anna Ball, at 573-884-9797 or ballan@missouri.edu. You may contact the University of Missouri Institutional Review Board if you have questions regarding your rights or concerns about the study, or if you feel pressure to enroll in the study. The IRB can be reached at 573-882-9585 or irb@missouri.edu.

Consent:
I have read the consent form and have been given the opportunity to ask questions. I give permission for my participation in this study. I understand that I will be informed of any significant new findings discovered during the course of this study that might influence my health, welfare, or willingness to continue participation in this study.

Teacher Signature _____ Date _____

APPENDIX B

Student Recruitment Letter

Hello,

My name is Amanda Bowling and I am a graduate student at the University of Missouri in the Agricultural Education and Leadership Department. I am conducting a research study investigating strategies agriculture teachers utilize, which supports students' needs and motivation. I am contacting you to see if you would be willing to participate in the study. Your participation would involve consenting to a 15-minute questionnaire. Additionally, up to five students may be selected to participate in up to two interviews. I will also be conducting observations during agriculture classes and FFA activities. Students will be present during the observations, but I will not be documenting any student names during this time.
The observations will be video recorded with minimum capturing of students. All interviews will be audio recorded and all audio and related documents will be coded to protect your confidentiality. Student GPAs will also be collected from the agriculture teacher. You as the participant have a right to decline to participate or stop participation at any time.

If you have any questions you regarding this study or your participation please contact me at any time at 636-359-3231 or at AmandaBowling@mizzou.edu. If you have questions about your participation or the research process you can also contact the University of Missouri IRB department at 573-882-9585 or irb@missouri.edu.

If you are interested in participating in this study you must obtain a signed parent consent form. Along with this letter, I have included the parent consent form, which needs to be completed by yourself and your parents. Please return the consent form to your agriculture teacher by _____. I look forward to hearing from you regarding your interest in participating.

Sincerely,

Amanda Bowling
University of Missouri
Agricultural Education and Leadership Department
Ph.D. Candidate

APPENDIX C

Parent Consent Form

Study Name: Conceptualizing the process to support student psychological needs and intrinsic motivation within SBAE programs

Investigator's Name: Amanda Bowling

Description of Study: This study involves research and includes questionnaires, observations, and interviews, which will be conducted to determine what strategies agriculture teachers use which support students' psychological needs and intrinsic motivation.

Procedure of the Study: If you agree to participate in the study, you would:

- Complete a 15 minute questionnaire
- Up to five students will also be selected to participate in research interviews, these interviews will be audio recorded
- GPA will be collected from the agriculture teacher
- Classroom and FFA activity observations will also be conducted and videotaped. Students will not be the focus of the observations and as little of the students will be captured on video as possible

How long will you be in the study?
Your participation will consist of a 15-minute questionnaire. If selected to participate in interviews, students will participate in up to 2 audio recorded interviews, which may last up to 45 minutes each.

What are the risks of this study?
The risks of this study are not expected to be any greater than risks you might encounter in their daily lives.

What are the benefits of this research?
By better understanding the strategies used by agriculture teachers within and outside of the agriculture classroom, the psychological needs and intrinsic motivation of students can be better supported.

Participation is voluntary:
Participation is this research study is voluntary. You may refuse to participate in this study or withdraw from the study at any time. Refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled.

What about confidentiality?
The researchers in this study will keep all information about the your participation in the study confidential. Information produced by this study will be stored in the investigator's

computer and will be password protected. Information will not be given to anyone who is not affiliated with this study in a form that could identify you.

Who can I talk to about this study?
If you have any questions about the study, please call Amanda Bowling at 636-359-3231 or email ambwd6@mail.missouri.edu. You may also contact the advisor for the study, Dr. Anna Ball, at 573-884-9797 or ballan@missouri.edu. You may contact the University of Missouri Institutional Review Board if you have questions regarding your child's rights or concerns about the study, or if you feel pressure to enroll your child in the study. The IRB can be reached at 573-882-9585 or irb@missouri.edu.

☐ I consent my son/daughter to participate in the questionnaire only

☐ I consent my son/daughter to participate in the questionnaire and interview

☐ I do not consent my son/daughter to participate in this study

Parent Signature _____ Date _____

Student Name _____

APPENDIX D

Student Assent Form

Study Name: Conceptualizing the process to support student psychological needs and intrinsic motivation within SBAE programs

Investigator's Name: Amanda Bowling

Description of Study: This study involves research and includes questionnaires, observations, and interviews, which will be conducted to determine what strategies agriculture teachers use which support students' psychological needs and intrinsic motivation.

Procedure of the Study: If you agree to participate in the study, you would:

- Complete a 15-minute questionnaire
- Up to five students will also be selected to participate in audio recorded research interviews
- GPA will be collected from the agriculture teacher
- Classroom and FFA activity observations will also be conducted and videotaped. Students will not be the focus of the observations and as little of the students will be captured on video as possible.

How long will you be in the study?
Your participation will consist of a 15-minute questionnaire. If selected to participate in interviews, students will participate in up to 2 interviews, which may last up to 45 minutes each.

What are the risks of this study?
The risks of this study are not expected to be any greater than risks you might encounter in their daily lives.

What are the benefits of this research?
By better understanding the strategies used by agriculture teachers within and outside of the agriculture classroom, the psychological needs and intrinsic motivation of students can be better supported.

Participation is voluntary:
Participation is this research study is voluntary. You may refuse to participate in this study or withdraw from the study at any time. Refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled.

What about confidentiality?
The researchers in this study will keep all information about the your participation in the study confidential. Information produced by this study will be stored in the investigator's

computer and will be password protected. Information will not be given to anyone who is not affiliated with this study in a form that could identify you.

Who can I talk to about this study?
If you have any questions about the study, please call Amanda Bowling at 636-359-3231 or email ambwd6@mail.missouri.edu. You may also contact the advisor for the study, Dr. Anna Ball, at 573-884-9797 or ballan@missouri.edu. You may contact the University of Missouri Institutional Review Board if you have questions regarding your rights or concerns about the study, or if you feel pressure to enroll in the study. The IRB can be reached at 573-882-9585 or irb@missouri.edu.

Assent (Student Under 18 years old):

I have read the consent form and have been given the opportunity to ask questions. By signing below I assent to completing the online questionnaire and interviews if selected. I understand that I will be informed of any significant new findings discovered during the course of this study that might influence my health, welfare, or willingness to continue participation in this study.

Student Signature _____ Date _____

Student Name _____

APPENDIX E

Student Demographic Characteristics

Table 5
Participating Student Demographic Characteristics (n = 223)

Characteristics	School 1 (*n* = 7)		School 2 (*n* = 71)		School 3 (*n* = 34)		School 4 (*n* = 37)		School 5 (*n* = 74)		Total (*n* = 223)	
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Sex												
Male	3	42.86	28	39.44	17	50.00	17	45.95	38	51.35	103	46.19
Female	4	57.14	43	60.56	17	50.00	20	54.05	36	48.65	120	53.81
Grade Level												
Freshman	2	28.57	32	45.07	9	26.47	10	27.03	53	71.62	106	47.53
Sophomore	3	42.86	13	18.31	18	52.94	7	18.92	0	0.00	41	18.39
Junior	0	0.00	10	14.08	6	17.65	5	13.51	21	28.38	42	18.83
Senior	2	28.57	16	22.54	1	2.94	15	40.54	0	0.00	34	15.25
Career Aspiration												
Agriculture	2	28.57	19	26.76	11	32.35	3	8.11	27	36.49	62	27.80
Computers/ Technology	1	14.29	2	2.82	1	2.94	0	0.00	1	1.35	5	2.24
Education	0	0.00	2	2.82	0	0.00	4	10.81	0	0.00	6	2.69
Engineering	1	14.29	5	7.04	3	8.82	4	10.81	2	2.70	15	6.73
Health\ Medical	1	14.29	21	29.58	6	17.64	4	10.81	20	27.03	52	23.32
Law Enforcement	0	0.00	4	5.63	1	2.94	2	5.41	3	4.05	10	4.48
Military	0	0.00	1	1.41	0	0.00	1	2.70	3	4.05	5	2.24
Business/ Sales	1	14.29	6	8.45	1	2.94	3	8.11	0	0.00	11	4.93
Unknown/ Undecided	1	14.29	11	15.49	11	32.35	16	43.24	18	24.32	57	25.56

APPENDIX F

Student FFA Participation

Table 6

Participating Student FFA Participation (n = 223)

	School 1 (*n* = 7)		School 2 (*n* = 71)		School 3 (*n* = 34)		School 4 (*n* = 37)		School 5 (*n* = 74)		Total (*n* = 223)	
FFA Participation	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Conventions												
Local	1	14.29	1	1.41	0	0.00	3	8.11	10	13.51	15	6.73
Area	0	0.00	4	5.63	1	2.94	2	5.41	3	4.05	10	4.48
District	0	0.00	0	0.00	1	2.94	0	0.00	6	8.11	7	3.14
State	1	14.29	14	19.72	4	11.76	2	5.41	8	10.81	29	13.00
National	2	28.57	21	29.58	12	35.29	17	45.95	1	1.35	53	23.77
None	3	42.86	31	43.66	16	47.06	13	35.14	46	62.16	109	48.88
FFA Officer												
Local	3	42.86	6	8.45	13	38.24	10	27.03	8	10.81	41	18.39
Area	0	0.00	3	4.23	0	0.00	0	0.00	1	1.35	4	1.79
District	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
State	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
National	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
None	4	57.14	62	87.32	21	61.76	27	72.97	65	87.84	178	79.82
Leadership Conferences												
Local	0	0.00	2	2.82	4	11.76	4	10.81	9	12.16	19	8.52
Area	2	28.57	10	14.08	6	17.65	11	29.73	12	16.22	41	18.39
District	1	14.29	5	7.04	3	8.82	0	0.00	27	36.49	36	16.14
State	0	0.00	15	21.13	3	8.82	4	10.81	2	2.70	24	10.76
National	1	14.29	6	8.45	4	11.76	2	5.41	1	1.35	14	6.28
None	3	42.86	33	46.48	14	41.18	16	43.24	23	31.08	89	39.91
CDEs												
Local	0	0.00	7	9.86	5	14.71	6	16.22	8	10.81	26	11.66
Area	3	42.86	1	1.41	0	0.00	3	8.11	4	5.41	11	4.93
District	0	0.00	7	9.86	4	11.76	0	0.00	8	10.81	19	8.52
State	2	28.57	8	11.27	11	32.35	9	24.32	5	6.76	35	15.69
National	0	0.00	3	4.23	0	0.00	2	5.41	1	1.35	6	2.69
None	2	28.57	45	63.38	14	41.18	17	45.95	48	64.86	126	56.50
LDEs												
Local	1	14.29	4	5.63	2	5.88	4	10.81	8	10.81	19	8.52
Area	1	14.29	4	5.63	10	29.41	6	16.22	7	9.46	28	12.56
District	2	28.57	10	14.08	3	8.82	0	0.00	6	8.11	21	9.42
State	0	0.00	1	1.41	0	0.00	9	24.32	3	4.05	13	5.83
National	0	0.00	1	1.41	0	0.00	1	2.70	1	1.35	3	1.35
None	3	42.86	51	71.83	19	55.88	17	45.95	49	66.22	139	62.33
Agriscience Fair												
Local	0	0.00	2	2.82	2	5.88	3	8.11	7	9.46	14	6.28
Area	0	0.00	0	0.00	0	0.00	0	0.00	1	1.35	1	0.45
District	0	0.00	1	1.41	1	2.94	3	8.11	2	2.70	7	3.14
State	0	0.00	2	2.82	0	0.00	2	5.41	2	2.70	6	2.69
National	0	0.00	1	1.41	1	2.94	1	2.70	0	0.00	3	1.35
None	7	100.00	65	91.54	30	88.24	28	75.68	62	83.78	192	86.10
Livestock Exhibiting												
Local	1	14.29	6	8.45	2	5.88	1	2.70	10	13.51	20	8.97
Area	0	0.00	7	9.86	1	2.94	3	8.11	2	2.70	13	5.83
District	0	0.00	4	5.63	2	5.88	0	0.00	2	2.70	8	3.59
State	0	0.00	1	1.41	3	8.82	6	16.22	12	16.22	22	9.87

APPENDIX G

Data Chart
(Adjusted for New Qualitative Central Question and Sub Questions)

Objectives/Questions	Variables	Variable Type	Measurement	Purpose of Data
Objective #1 (quan)	Perceived support of student psychological needs	Descriptive • Ratio	Basic Psychological Needs Scale • 7 point Likert Scale • Within SBAE program • Everyday life	Ancillary Data Source • General view of motivation • Lens for field observation • Guidance of interviews • Selection of beginning interview questions • Identification of potential student interviewees
Objective #2 (quan)	Perceived intrinsic motivation	Descriptive • Codes	Research developed open ended questions with quantitative instrument • Student responses to be open coded	Ancillary Data Source • General view of motivation • Examples of intrinsic motivation, interest, and flow • Lens and selection for field observation • Guidance of interviews • Selection of beginning interview questions
Objective #3 (quan)	Orientation of teacher • Autonomy support • Controlling	Descriptive • Ratio	Problem in Schools Instrument • 8 Vignettes • 7 point Likert Scale	Ancillary Data Source • General view of teacher orientation • Lens for field observation • Guidance of interviews

				• Selection of beginning interview questions
Central Question (Qual)	Identify strategies and processes which support the psychological needs of students	Descriptive • Codes, categories, and themes	One-on-one, semi-structured interviews • Teacher and students' responses to be open, axial, and selective coded • Interview memos Field observations • ½ day classroom • 2 FFA activities Observational Organizer • Document emerging teacher strategies • Frequency tally autonomy support/thwart within classroom observations • Document field notes during and following	Primary Data Source • Strategies utilized which support/thwart psychological needs of students • Strategies utilized to specifically address needs/motivation of students • Autonomy and/or controlling strategies utilized
Sub Question #1 (Qual)	Identify influencers of how the psychological needs are supported	Descriptive • Codes, categories, and themes	One-on-one, semi-structured interviews • Teacher/students' responses to be open, axial, and selective coded • Interview memos Field observations • ½ day classroom • 2 FFA activities Observational Organizer	Primary Data Source • Strategies utilized to specifically address needs/motivation of students • Autonomy and/or controlling strategies utilized • Beliefs about how they are motivated • Motivation differences between classroom and FFA

			• Document emerging teacher strategies • Frequency tally autonomy support/thwart within classroom observations • Document field notes during and following	• School, classroom, and SBAE experiences
Sub Question #2 (Qual)	Identify motivational outcomes within SBAE programs	Descriptive • Codes, categories, and themes	One-on-one, semi-structured interviews • Teacher/students' responses to be open, axial, and selective coded • Interview memos Field observations • ½ day classroom • 2 FFA activities Observational Organizer • Document emerging teacher strategies • Frequency tally autonomy support/thwart within classroom observations • Document field notes during and following	Ancillary Data Source • Motivational influence of needs support/thwart • Student motivational experiences • Teacher to student interactions • Student to student interactions • Student experiences of intrinsic motivation • Supporting student intrinsic motivation
Convergent Question	Actions and processes which support psychological needs	Descriptive • Themes utilized to develop emerging theory	Primary data sources • Teacher/student interviews • Interview memos Ancillary data sources • Field observations	Describe the actions and processes which support psychological needs through the emerging theory

			• Teacher/student questionnaires	

APPENDIX H

SBAE Student Questionnaire

Thank you for considering to participate in this study and the Student Psychological Needs and Intrinsic Motivation questionnaire. This questionnaire should take around 15 minutes for you to complete. Please remember your participation is voluntary and you can choose to remove yourself from the study at any time. Your information will be coded to ensure confidentiality. To help with this matter please enter the participant code provided for you by your agriculture teacher:

Within this questionnaire, when you are asked questions about your experience within your agriculture program please reflect about your experiences with Mrs. Hammett.

Please read each of the following items carefully, thinking about how it relates to your agricultural program including the agriculture classroom and FFA organization and then indicate how true it is for you. Also think about how it relates your everyday life, and then indicate how true it is for you.

	Within your agricultural program							Within your everyday life						
	Not true at all 1	2	3	Somewhat true 4	5	6	Very true 7	Not true at all 1	2	3	Somewhat true 4 (4)	5	6	Very true 7
I feel like I am free to decide for myself how to live my life.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I really like the people I interact with.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Often, I do not feel very competent.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I feel pressured.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
People I know tell me I am good at what I do.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I get along with people I come into contact with.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I pretty much keep to myself and don't have a lot of social contacts.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I generally feel free to express my ideas and opinions.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I consider the people I regularly interact with to be my friends.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I have been able to learn interesting new skills recently.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Please read each of the following items carefully, thinking about how it relates to your agricultural program including the agriculture classroom and FFA organization and then indicate how true it is for you. Also think about how it relates your everyday life, and then indicate how true it is for you.

	Within your agricultural program							Within your everyday life						
	Not true at all 1	2	3	Somewhat true 4	5	6	Very true 7	Not true at all 1	2	3	Somewhat true 4	5	6	Very true 7
I frequently have to do what I am told.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
People care about me.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Most days I feel a sense of accomplishment from what I do.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
People I interact with on a daily basis tend to take my feelings into consideration.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I do not get much of a chance to show how capable I am.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
There are not many people that I am close to.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I feel like I can pretty much be myself.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The people I interact with regularly do not seem to like me much.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
I often do not feel very capable.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
There is not much opportunity for me to decide for myself how to do things.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
People are generally pretty friendly towards me.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

The following prompts will ask you to describe experiences you have had within your agricultural classroom. When answering the prompts please describe what you were learning and how you felt during the experience. If you have not had an experience like the one described in the prompt, please answer "I have not experienced this".

Tell me about a time within your agricultural class where you were so engaged in what you were learning that you lost track of time and ignored your surroundings/outside distractions.

Tell me about a time when you were so interested in what you were learning in your agricultural class, the you choose to learn more about the subject after class.

The following prompts will ask you to describe experiences you have had within your FFA chapter. When answering the prompts please describe what you were doing and how you felt during the experience. If you have not had an experience like the one described in the prompt, please answer " I have not experienced this".

Tell me about a time within your FFA chapter where you participated in an activity just because you were interested in it. Why were you interested in the activity?

Tell me about a time within your FFA chapter where you were so engaged in what you were doing that you lost track of time and ignored your surroundings/outside distractions.

Please answer the following questions regarding your personal information.

Sex:
❍ Male
❍ Female

Grade level:
❍ Freshman
❍ Sophomore
❍ Junior
❍ Senior

Please indicate your highest level of participation in the following FFA activities:

	Local	Area	District	State	National	None
FFA Conventions	❍	❍	❍	❍	❍	❍
FFA Officer	❍	❍	❍	❍	❍	❍
FFA Leadership Conferences/Workshops	❍	❍	❍	❍	❍	❍
Career Development Events	❍	❍	❍	❍	❍	❍
Leadership Development Events	❍	❍	❍	❍	❍	❍
FFA Agriscience Fair	❍	❍	❍	❍	❍	❍
Livestock Exhibiting	❍	❍	❍	❍	❍	❍

Please indicate the career area you are most interested in pursuing after high school and/or college:
❍ Agriculture
❍ Computers and Technology
❍ Education
❍ Engineering
❍ Health and Medical
❍ Law Enforcement
❍ Military
❍ Business and Sales
❍ Undecided
❍ None of the above

APPENDIX I

SBAE Teacher Questionnaire

Thank you for considering to participate in this study and the Problems in Schools questionnaire. This questionnaire should take around 15 minutes for you to complete. Please remember your participation is voluntary and you can choose to remove yourself from the study at any time. Your information will be coded to ensure confidentiality. To help with this matter please enter the participant code provided for you in the linked email:

On the following pages you will find a series of vignettes. Each one describes an incident and then lists four ways of responding to the situation. Please read each vignette and then consider each responses in turn. Think about each response option in terms of how appropriate you consider it to be as a means of dealing with the problem described in the vignette. You may find the option to be perfect, in other words, extremely appropriate in which case you would respond with the number 7. You might consider the response highly inappropriate, in which case would respond with the number 1. If you find the option reasonable you would select some number between 1 and 7. So think about each option and rate it on the scale shown below. Please rate each of the four options for each vignette. There are eight vignettes with four options for each. There are no right or wrong ratings on these items. People's styles differ, and we are simply interested in what you consider appropriate given your own style. Some of the stories ask what you would do as a teacher. Others ask you to respond as if you were giving advice to another teacher or to a parent. Some ask you to respond as if you were the parent. If you are not a parent, simply imagine what it would be like for you in that situation.

Vignette #1 Jim is an average student who has been working at grade level. During the past two weeks he has appeared listless and has not been participating during reading group. The work he does is accurate but he has not been completing assignments. A phone conversation with his mother revealed no useful information. The most appropriate thing for Jim's teacher to do is:

She should impress upon him the importance of finishing his assignments since he needs to learn this material for his own good.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Let him know that he doesn't have to finish all of his work now and see if she can help him work out the cause of the listlessness.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Make him stay after school until that day's assignments are done.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Let him see how he compares with the other children in terms of his assignments and encourage him to catch up with the others.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #2 At a parent conference last night, Mr. and Mrs. Greene were told that their daughter Sarah has made more progress than expected since the time of the last conference. All agree that they hope she continues to improve so that she does not have to repeat the grade (which the Greene's have been kind of expecting since the last report card). As a result of the conference, the Greenes decide to:

Increase her allowance and promise her a ten-speed if she continues to improve.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Tell her that she's now doing as well as many of the other children in her class.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Tell her about the report, letting her know that they're aware of her increased independence in school and at home.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Continue to emphasize that she has to work hard to get better grades.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #3 Donny loses his temper a lot and has a way of agitating other children. He doesn't respond well to what you tell him to do and you're concerned that he won't learn the social skills he needs. The best thing for you to do with him is:

Emphasize how important it is for him to control himself in order to succeed in school and in other situations.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Put him in a special class which has the structure and reward contingencies which he needs.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Help him see how other children behave in these various situations and praise him for doing the same.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Realize that Donny is probably not getting the attention he needs and start being more responsive to him.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #4 Your son is one of the better players on his junior soccer team which has been winning most of its games. However, you are concerned because he just told you he failed his unit spelling test and will have to retake it the day after tomorrow. You decide that the best thing to do is:

Ask him to talk about how he plans to handle the situation.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Tell him he probably ought to decide to forego tomorrow's game so he can catch up in spelling.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

See if others are in the same predicament and suggest he do as much preparation as the others.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Make him miss tomorrow's game to study; soccer has been interfering too much with his school work.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #5 The Rangers spelling group has been having trouble all year. How could Miss Wilson best help the Rangers?

Have regular spelling bees so that Rangers will be motivated to do as well as the other groups.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Make them drill more and give them special privileges for improvements.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Have each child keep a spelling chart and emphasize how important it is to have a good chart.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Help the group devise ways of learning the words together (skits, games, and so on).
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #6 In your class is a girl named Margy who has been the butt of jokes for years. She is quiet and usually alone. In spite of the efforts of previous teachers, Margy has not been accepted by the other children. Your wisdom would guide you to:

Prod her into interactions and provide her with much praise for any social initiative.
- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Talk to her and emphasize that she should make friends so she'll be happier.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Invite her to talk about her relations with the other kids, and encourage her to take small steps when she's ready.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Encourage her to observe how other children relate and to join in with them.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #7 For the past few weeks things have been disappearing from the teacher's desk and lunch money has been taken from some of the children's desks. Today, Marvin was seen by the teacher taking a silver dollar paperweight from her desk. The teacher phoned Marvin's mother and spoke to her about this incident. Although the teacher suspects that Marvin has been responsible for the other thefts, she mentioned only the one and assured the mother that she'll keep a close eye on Marvin. The best thing for the mother to do is:

Talk to him about the consequences of stealing and what it would mean in relation to the other kids.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Talk to him about it, expressing her confidence in him and attempting to understand why he did it.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Give him a good scolding; stealing is something which cannot be tolerated and he has to learn that.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Emphasize that it was wrong and have him apologize to the teacher and promise not to do it again.

- ❍ Very inappropriate 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ Moderately appropriate 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ Very appropriate 7 (7)

Vignette #8 Your child has been getting average grades, and you'd like to see her improve. A useful approach might be to:

Encourage her to talk about her report card and what it means for her.

- ❍ Very inappropriate 1 (4)
- ❍ 2 (5)
- ❍ 3 (6)
- ❍ Moderately appropriate 4 (7)
- ❍ 5 (8)
- ❍ 6 (9)
- ❍ Very appropriate 7 (10)

Go over the report card with her; point out where she stands in the class.
- ❍ Very inappropriate 1 (4)
- ❍ 2 (5)
- ❍ 3 (6)
- ❍ Moderately appropriate 4 (7)
- ❍ 5 (8)
- ❍ 6 (9)
- ❍ Very appropriate 7 (10)

Stress that she should do better; she'll never get into college with grades like these.
- ❍ Very inappropriate 1 (4)
- ❍ 2 (5)
- ❍ 3 (6)
- ❍ Moderately appropriate 4 (7)
- ❍ 5 (8)
- ❍ 6 (9)
- ❍ Very appropriate 7 (10)

Offer her a dollar for every A and 50 cents for every B on future report cards.
- ❍ Very inappropriate 1 (4)
- ❍ 2 (5)
- ❍ 3 (6)
- ❍ Moderately appropriate 4 (7)
- ❍ 5 (8)
- ❍ 6 (9)
- ❍ Very appropriate 7 (10)

Please respond to the following prompts regarding your personal information:

Age:

Sex:
- ❍ Male (1)
- ❍ Female (2)

Teacher certification type:
- ❍ Traditionally certified (1)
- ❍ Alternatively certified (2)

APPENDIX J

Classroom Observational Organizer

Participant Name: **Class:** **Time:**

		5 min	10 min	15 min	20 min	25 min	30 min	35 min	40 min	45 min	50 min
Autonomy Supporting	Student choice										
	Teacher listening										
	Give time for independent work										
	Praise for quality of performance										
	Questions of what students want										
	Empathetic statements										
Autonomy Thwarting	Teacher talking										
	Solutions given										
	Directives/commands										
	Should, must, have statements										
	Controlling questions										
	Praise for compliance										
	Criticisms										

	5 min	10 min	15 min	20 min	25 min	30 min	35 min	40 min	45 min	50 min
Autonomy										
Relatedness										
Competence										
Intrinsic Motivation										

Classroom Observational Organizer

Participant Name: **Class:** **Time:** **Location:**

Number of Students: **Lesson:**

Description of Classroom:

Description of Curriculum/Content:

Description of Teaching Methods and Activities:

Field Notes:

APPENDIX K

FFA Activity Observational Organizer

Participant Name: **FFA Activity:** **Time:** **Location:**

	5 min	10 min	15 min	20 min	25 min	30 min	35 min	40 min	45 min	50 min
Autonomy										
Relatedness										
Competence										
Intrinsic Motivation										

	55 min	60 min	65 min	70 min	75 min	80 min	85 min	90 min	95 min	100 min
Autonomy										
Relatedness										
Competence										
Intrinsic Motivation										

FFA Activity Observational Organizer

Participant Name: **FFA Activity:** **Time:** **Location:**

Number of Students Attending: **Number of Officers:**

Description of FFA Activity:

Role of Officers:

Role of Members:

Role of Advisors:

Field Notes:

APPENDIX L

Observational Organizer Operational Definitions

Frequency of Observed Strategies Portion:

Autonomy: Strategies which either support and thwart the students' perceived origin or source of one's own behavior.

Student Choice: Teacher provides opportunities for the student to make decisions regarding curriculum, learning activities, classroom environment/set-up, and/or assessments.

Teacher listening: Teacher is quietly listening to students' questions, concerns, expressed emotions, etc.

Give time for independent work: Teacher provides time in class for the students to work independently without the teacher providing answers or directing how the students complete the work.

Praise for quality of performance: Teacher provides praise for the process the student takes to learn the material or complete the assignment, project, and/or assessment.

Questions of what students want: Teacher asks questions regarding what the students want to learn, the environment in which they learn it, how they want to learn it, and how they want to be assessed.

Empathetic statements: Teacher discusses understanding how the students feel and tries to put themselves "in the students' shoes".

Teacher talking: Teacher is talking during instructional strategies, independent work, and/or transitions. The teacher interprets or intrudes on students talking or questions.

Solutions given: Teacher provides the students answers rather than providing hints.

Directives/commands: Authoritative instruction given by teachers.

Should, must, have statements: Teacher utilizes statements which dictates students "should, must, or have" in order to encourage compliance.

Controlling questions: Teacher ask questions in order to control the behavior of students or encourage compliance.

Praise for compliance: Teacher praises students for complying to the rules of the school or classroom. Teacher praises student for complying to controlling question or statement.

Criticisms: Teacher either criticizes students in front of the class or individuals. Teacher criticizes groups of students or the entire class.

Competence: Strategies which either support or thwart the students' felt sense of confidence and efficacy in action, not focusing on attained skill or capability.

Intrinsic motivation: Strategies which are utilized to develop or sustain student enjoyment or interest. Student expressed enjoyment or interest in the observed activity.

Relatedness: Strategies which either support or thwart the students' sense of belonging; feeling connected to others; caring for and being cared for by others.

Field Note Portion:

Description of classroom: Describe the arrangement of the room, classroom atmosphere, overall student engagement, teacher presence, and/or technologies utilized.

Description of curriculum/content: Describe the curriculum resources utilized within the classroom i.e. IML, CASE, MyCAERT, MDC, etc. Identify any materials and resources utilized within the lesson. Describe the content taught within the course including but not limited to subject matter, terminal objective, and enabling objectives.

Role of officers, members, and advisors: Identify the individuals in charge, directing others, delegating tasks, following orders, completing tasks, and/or not participating.

Description of teaching methods and activities: Describe the instructional strategies and learning activities utilized such lecture/direct instruction, active learning strategies, problem based learning, inquiry based learning, questioning, cooperative learning groups, and individual guided study. Describe the classroom and behavior management strategies utilized such as classroom/laboratory rules and procedures, verbalized expectations, verbal or written directions, proximity interference, "I" statements, etc. Describe the informal, formative, and summative assessments utilized.

APPENDIX M

Sample Teacher Interview Protocol

Date:

Time:

Potential Classroom Questions:

1) Within the classroom, what is the role of the teacher? Student?

2) How do you believe students are best motivated in the classroom? Extrinsically or intrinsically?

3) What do you intentionally do to motivate students within the classroom?

4) What style of teaching or teaching strategies do you feel best motivate students? How do you use these to motivate students? Style of teaching in classroom settings vs. in the shop?

5) How do you scaffold learning to motivate students and increase their confidence?

6) What do you do to determine the interest of your students? How do you incorporate these into your classroom?

7) What role do you feel grades, policies, rules, and punishment play within education? Student motivation?

8) How do you know a student is confident in the context they are in? If they are not, how do you help them develop this?

9) How do you build relationships with students in the classroom? Role of humor within these relationships?

10) How do encourage student to student relationships within the classroom?

11) How do CASE classes impact student motivation? What role does student choice play in this?

12) What type of choices do you let students have regarding their learning? How do you support the students after they make the choices?

13) Do your motivational strategies vary based on the students' end goals (career vs. higher education)?

Potential FFA Questions:

1) Within the FFA, what is the role of the advisor? Officer team? Members?

2) What do you intentionally do to motivate FFA members within your chapter?

3) What strategies do you utilize within the FFA to motivate members? Officers?

4) How do you build relationships with FFA members?

5) What FFA activity do you feel motivates FFA members the most? Why?

6) In what ways does the FFA help students build confidence in their ability to complete tasks or within the knowledge they possess? How do you specifically help them develop this confidence?

Total program:

1) I am seeing that ag teachers are more directive in the classroom and support more student/member independence in the FFA chapter. Why is this?

2) Do you consciously think about the role you play in student/FFA member motivation? Expand upon.

3) What separates the Ag program from the extrinsic nature of school systems?

4) Where in the Ag program do students have the most choices or ability to direct their own actions?

5) How does the career focus and ability to develop career/life related skills affect student motivation?

6) How do you build motivation within freshman?

APPENDIX N

Sample Student Interview Protocol

Name: Date: Time:

1) What are you most interested or engaged in within your agriculture program? Why?

2) Compare your relationship with your agriculture teacher compared to other teachers in school? Why do you think it is different or the same?

3) How are your agriculture classes different from other classes such as math, English/language arts, science, and social studies? How are they the same?

4) Do you think Mrs. French leads or works with students differently when he is a teacher vs. when he is a FFA advisor?

5) Tell me about a time your agriculture teacher gave you a choice related to a class assignment or FFA activity. How did this make you feel?

6) When do you feel most confident in your agriculture classroom? FFA chapter?

7) Tell me about a time you felt pressured in your agriculture classes. FFA. How did these make you feel? Do you think your motivation to complete the task or participate changed?

8) Who do you feel most connected with in class? Friends, teacher, other? Why do you feel this is?

9) What are you most interested in in school? Why?

10) How does independent study (CDE, proficiency) make you feel?

11) Do you feel more motivated within your SBAE program, then is regular school? Why?

12) What part of the Ag program (three circle model) do you feel you have the most say in what you can do or engage in?

13) Have you taken any CASE based classes? What is different about these classes than others? How do you feel about these differences? Does this give you more choices than other classes?

Information from questionnaire:

APPENDIX O

Sample Teacher Memo

Interesting Quotes:
The student should be an active learner. They should take initiative, be engaged, want to dive in and try to find that information and look into it further and not put all of it on them but definitely want to essentially be the teacher and find that info.

There's always that carrot of a grade. For the kids that don't have that carrot of getting good grades, then if they aren't passing something, then they're not eligible. Trying to instill that intrinsic motivation with tweaking the content of the class into what fits the group of students and trying to teach things they are interested in.

When they're out in the shop and working, getting that essentially on the job training, real life experience.

I think a lot if times, it just becomes compliance. They know they have to do it. They do enough to get by. At some point, we hope that it turns into motivation, that they have that subject. They have something that triggers them to go, "Oh, wow. I might actually be interested in this."

That allows them to have that mastery. Then when they go to the shop, they have some of that confidence of they've met all the requirements. They've mastered it her. Now they are moving on.

They might not be a great athlete, but they come in here. They can be an officer, They can be good at a content.

General Thoughts (Potential Codes):

- Teacher as facilitator
- Inquiry based learning
- Active learners in the process—students must be active
- Utilize variance to motivate—novelty?
- Utilize grades as extrinsic motivator
- Must vary teaching methods and strategies
- Hands-on is important
- Hands-on assessments as follow up (gauge learning)
- Build knowledge and grow from there
- Know student backgrounds to gauge interests
- Student surveys to identify interests and incorporate them into classes
    - Choices within projects, assignments, and assessments
    - Choices dictate the classes the program offers
    - Students can choose the classes to take—elective courses

- Some opportunities to allow student direction in FFA are negated by school policies
- Offers little choices within Ag 1 and 2
- More choices as students age through
- Knows the the students to build relationships and relationships help to better understand students
- Cooperative learning groups
    - Random partners for younger students, older students pick
- In FFA officers lead, make choices, and direct chapter activities
- Teacher acknowledges being absent for some activities
- Laisse-Fair Leader (teacher is)
- Officers set goals for the chapter
- Sophomore members serve as committee chairs—non-officers
- Members want to find a role and help
- It is important to get members to participate to develop motivation
- Intrinsic—CDE—goal driven
- FFA participation—Extrinsic—points chart to go to national convention and rewards trip
- FFA participation—Extrinsic—grades—10% of grade
- Motivate FFA participation through small group dynamics, class connection to FFA, middle school recruitment
- Spent time with students outside of class to build relationships
- CDEs and SAE visits build relationships
- Must vary types of FFA activities to motivate students
- CDEs, Trapshooting, Proficiencies, and SAE all motivating
- Proficiencies and SAE motivating due to their ties to future career aspirations
- SBAE programs gives place to be successful—must advertise this
    - You build them up
    - Develop goals and build it up
- FFA is more intrinsic in nature
- SBAE separates from school through the ability to be successful and be recognized
    - Intrinsic to be good at FFA
- Students have the most choices in SAE projects

Big Take Aways:

- Talk with students, know students, and spend time with students--RELATIONSHIPS
- FFA and SAE as mechanisms to expand in motivation (internal and intrinsic)
- Grades as compliance but hope it can shift to motivation
- Scaffolding of learning to build confidence

Questions (Some were developed and asked within interview, others were utilized as follow-up questions at end of interviews and observation):

- Are less choices offered in under classes due to lack of trust or constraints based on curriculum?
- Why the variance in classroom and FFA student autonomy?
- Connection between non-officer leadership roles and ownership/motivational outcomes within the program?
- True three circle program, is this the teachers' beliefs? Was this thought, was this learned?
- Where are the teachers' motivational beliefs coming from?
- If they want to shift motivation, why is extrinsic motivational strategies still being utilized?

APPENDIX P

Sample Student Memo

Interesting Quotes:
I actually like that because sometimes you get to learn more about a subject that you want to more about. Like sometimes I know a lot about horses so maybe I want to do a research project about cattle so I can learn more about them. So that's what I like about that.

I actually like that system 'cause it kinda brings you closer to adulthood when you have to make choices.

I think the activities are more of kinda guiding yourself in the activities and learning for yourself than anything else. I feel as if we have more control that way.

Yeah, I would say a lot more because your encouraged to learn a lot more and you have other people helping you versus other classes. In other classes it feels its just like the teacher trying to help you but sometimes working with other students helps you really learn stuff.

General Thoughts (Potential Codes):
- Go outside—variety of learning environments
- Classroom opens up more opportunities
- Learning is hands-on
- Knows Ag teacher more than other high school teachers
- Go out (of school) and do stuff together—through FFA and SAE
- Ag teacher is more interactive and more involved than other teachers
- Choices in CDE area and how they prepare
- Can make choices within group activities
- Hands-on content and learning makes them feel more confident
- Feels connected with friends/peers—can learn a lot from them and can learn from their experiences
- Wants to connect with his friends and teachers
- Most interested in sports and AG/FFA in school
- Good world experience within SBAE program—interact with new people, get out in the world
- More motivated in SBAE program than in rest of school
- Most engaged in FFA portion of SBAE program

Big Take Aways:
- Relatedness is very important to him
    - Very important to his future career
- Lacks confidence in his content knowledge especially when presenting to class
- Likes hands-on and interactive nature of content

Connections From Questionnaire:

- Needs are thwarted
    - Not sure he is experiencing relatedness to the extent he wants
    - Not sure he moves past the times he experiences a lack of confidence

Questions:

- He does not show a lot of affect or excitement. Can the teacher connect to him as easily as other students? Is this why his needs are thwarted?
- His needs are thwarted but he is still very motivated within the SBAE program? Is it the career focus or more laid back atmosphere?
- Teacher identified him as lacking motivation but he identifies himself as motivated. Why the difference?

APPENDIX Q

Alignment of Central Question, Themes, and Representative Quotes

Alignment Chart of Qualitative Central Question, Themes, and Representative Quotes		
Theme	Sub Theme	Representative Quote
Central Phenomenon: Relationships to Support Relatedness	The FFA Chapter as a Mechanism to Develop Relationships	"When you've got [the] forestry team out there and you're walking through the woods, you can make silly jokes and you can go ahead and really get [to] talking."
	Building Relationships Based on Caring and Understanding	"The biggest way is I attend their school functions. I show them that I care what they're involved in outside of the classroom."
	Developing and Utilizing Student-to-Student Relationships	"your Math and English [class] and all that, you sit there, you do work for 50 minutes, you don't get to really interact with people or have fun [like in ag class]."
Building Confidence to Develop Competence	Building Confidence within the SBAE Classroom	"But I have learned that if I empower them with that trust, they bloom. That's when the kid, actually, you'll see the greatest growth in a kid."
	Building Confidence within the FFA Chapter	"I think we provide a variety of activities for students to be able to shine. Kids are not gifted in the same areas, so providing them with as many opportunities [to shine]."
	Application to Increase Confidence	"more in-depth questions during the application side of things builds their confidence because then they're able to take what they learn, and they, actually, can then apply it."
Autonomy Within SBAE Programs	Supporting Autonomy Within SBAE Classrooms and SAE Projects	"more of here are the directions, this is what I want in the end, you figure out how to get there."
	Thwarting Autonomy Within SBAE Classrooms	"Their grade is directly tied to it."
	Supporting Autonomy Within the FFA Chapter	"Just like contest teams. I'll do what they want to do for the most part. I usually give them some options and then allow them to choose where we go."
	Thwarting Autonomy Within the FFA Chapter	"By having some of that external motivation and that external reward of winning money, recognition, they're like, it was really cool going across the state stage, those types of things, that they now have the internal motivation."

APPENDIX R

Alignment of Subquesiton 1, Themes, and Representative Quotes

Alignment Chart of Qualitative Subquestion 1, Themes, and Representative Quotes		
Theme	Sub Themes	Representative Quotes
Teacher Beliefs	The Influence of School Systems and the Role of the SBAE Program Plays Within Them	"They like structure. They like to be told what to do because I think in education we tell them exactly what to do from a very young age."
	Differences Between the Roles of Teacher and Advisor	"Really in the Meats contest, are you really educating meat cuts or are you educating how to work as a team?"
	Expectations of Classroom Students and FFA Members	"The students want to be here. They want to take ownership in it. They want to be in directing positions for those activities versus in the classroom."
	Student Motivation Within the Classroom and FFA Chapter	"kids want to be pushed. Everyone to a different level, but kids want to be pushed because they want success ultimately, just like any other human."
Utilizing a Variety of Motivational Strategies	FFA Motivational Strategies	"I also glamorize success, I talk about it in class when a kid does really well or they win something or they get a scholarship, I make sure the younger kids know about it."
	Classroom Motivational Strategies	"Provide them reason, model it. Have [them] work with partner so they work with someone that maybe has that intrinsic value and they can model it. I hope that them seeing me work all the time would give them purpose."
	Motivating Teaching and Learning Strategies	"Lecture has to be done, at some point in time, just to facilitate some directions and some information. Students aren't necessarily motivated by that."
Intracurricular Connections Based Upon Total Program Engagement	Incorporating FFA and SAE within the SBAE Classroom	"I think it's incorporating the three-circle model into our everyday life of SAE, FFA in classroom instruction, so when you add in that variety that lends itself to having so much going on in a 45-minute class."
	Constructing from One Circle to the Next	"That's their time to take what they're learning in the classroom, and expand upon it to make it their own experience."
	Creating Connections to Expand Beyond the School System	"I'm a believer that I don't give work for a grade, I give you the work cause we learn from the work."

APPENDIX S

Alignment of Subquestion 2, Themes, and Representative Quotes

Alignment Chart of Qualitative Subquestion 2, Themes, and Representative Quotes		
Themes	Sub Themes	Representative Quotes
Student Motivational Outcomes	Extrinsic Motivational Outcomes	"It's kind of like a goal from what I have seen from kids. They are trying to reach a goal of so many points and get so much done."
	Internal Motivational Outcomes	"The kids that are very SAE and proficiency-driven, that is their career and they know that's how they get it … Most of my SAE proficient kids are production ag kids. They want to come back and they want to farm."
	Intrinsic Motivational Outcomes	"welding is just something that really interests me, just, it's neat seeing how metal can be melted together to hold strong stuff. I feel like after I leave here and after I get off work and go home and weld more beads, I feel like it's nothing, it's just going to make me better."

REFERENCES

Amabile, T. M., DeJong, W., & Lepper, M. R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology*, *34*(1), 92-98.

Battistich, V. A. (2008). Voices: A practitioner's perspective: Character Education, Prevention, and Positive Youth Development. *Journal of Research in Character Education*, *6*(2), 81-90.

Ball, A. L., Bowling, A. M., & Bird, W. (2016). A case study of learning, motivation, and performance strategies for teaching and coaching Career Development Event teams. *Journal of Agricultural Education, 57*(3), 115-128. DOI: 10.5032/jae.2016.03115

Bird, W. A. (2012). Factors influencing students' self-perceived levels of civic responsibility during FFA sponsored civic engagement activities. University of Missouri, Columbia, MO.

Bird, W. A., Martin, M. J., & Simonsen, J. C. (2013). Student motivation for involvement in Supervised Agricultural Experiences: An historical perspective. *Journal of Agricultural Education*, *54*(1), 31-46.

Boggiano, A. K., Flink, C., Shields, A., Seelbach, A., & Barrett, M. (1993). Use of techniques promoting students' self-determination: Effects on students' analytic problem-solving skills. *Motivation and Emotion*, *17*(4), 319-336.

Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The ANNALS of the America Academy of Political and Social Science*, *591*(1), 98-124.

Christenson, S. L., Reschly, A. L., Appleton, J. J., Berman, S., Spanjers, D., & Varro, P. (2008). Best practices in fostering student engagement. *Best practices in school psychology*, *5*, 1099-1120.

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage Publications, Inc.

Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Sage Publications.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.

Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research.* Sage.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal performance.* NY: Cambridge University Press.

Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years.* New York: Basic Books.

Dawes, N. P., & Larson, R. (2011). How youth get engaged: Grounded-theory research on motivational development in organized youth programs. *Developmental Psychology*, *47*(1), 259-269.

Deci, E. L., & Cascio, W. F. (1972). Changes in intrinsic motivation as a function of negative feedback and threats. *Proceedings of Eastern Psychological Association meetings, Boston, MA*.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, *125*(6), 627-668.

Deci, E. L., & Ryan, R. M. (1975). *Intrinsic motivation*. John Wiley & Sons, Inc.

Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. *Advances in Experimental Social Psychology*, *13*, 39-80.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, *19*(2), 109-134.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268.

Deci, E. L., & Ryan, R. M. (2006). Basic psychological needs scale. Retrieved from selfdeterminationtheory.com.

Deci, E. L., Schwartz, A. J., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology, 73*, 642-650.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, *26*(3-4), 325-346.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: the tailored design method*. John Wiley & Sons.

Donovan, M. S. (2013). Generating improvement through research and development in education systems. *Science*, *340*(6130), 317-319.

Eccles, J., & Gootman, J. A. (Eds.). (2002). *Community programs to promote youth development*. National Academies Press.

Eccles, J. S., & Templeton, J. (2002). Extracurricular and other after-school activities for youth. *Review of Research in Education, 26*, 113-180.

Fife-Schaw, C. (2006). Levels of measurement. *Research methods in psychology*, *3*, 50-63.

Floyd, D. T., & McKenna, L. (2003). National youth serving organizations in the United States: Contributions to civil society. *Handbook of applied developmental science: Promoting positive child, adolescent, and family development through research, policies, and programs*, *3*, 11-26.

Gottfried, A. E., Fleming, J. S., & Gottfried, A. W. (2001). Continuity of academic intrinsic motivation from childhood through late adolescence: A longitudinal study. *Journal of Educational Psychology*, *93*(1), 3-13.

Green, L., & Foster, D. (1986). Classroom intrinsic motivation: Effects of scholastic level, teacher orientation, and gender. *The Journal of Educational Research*, *80*(1), 34-39.

Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (Vol. 7): Pearsion Upper Salle River, NJ.

Hamilton, S. F., Hamilton, M. A., & Pittman, K. (2004). Principles for youth development. *The Youth Development Handbook: Coming of Age in American Communities, 2*, 3-22.

Hansen, D. M., Larson, R. W., & Dworkin, J. B. (2003). What adolescents learn in organized youth activities: A survey of self-reported developmental experiences. *Journal of Research on Adolescence*, *13*(1), 25-55.

Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behavior: The differential effects of controlling vs. informational styles on intrinsic motivation and creativity. *Journal of Personality*, *52*(3), 233-248.

Larson, R. (2000). Towards a psychology of positive youth development. *American Psychologist, 55*(1), 170-183.

Larson, R. (2006). Positive youth development, willful adolescents, and mentoring. *Journal of Community Psychology*, *34*(6), 677-689.

Larson, R. W., & Rusk, N. (2010). Intrinsic motivation and positive development. *Advances in Child Development and Behavior*, *41*, 89-130.

Larson, R. W., & Walker, K. C. (2010). Dilemmas of practice: Challenges to program quality encountered by youth program leaders. *American Journal of Community Psychology*, *45*(3-4), 338-349.

Larson, R. W., Walker, K. C., Rusk, N., & Diaz, L. B. (2015). Understanding youth development from the practitioner's point of view: A call for research on effective practice. *Applied Developmental Science*, *19*(2), 74-86.

Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology, 97*(2), 184-196.

Lerner, R. M., Fisher, C. B., & Weinberg, R. A. (2000). Toward a science for and of the people: Promoting civil society through the application of developmental science. *Child Development*, *71*(1), 11-20.

Lerner, R. M., Lerner, J. V., Almerigi, J. B., Theokas, C., Phelps, E., Gestsdottir, S., ... & Smith, L. M. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents findings from the first wave Of the 4-H study of Positive Youth Development. *The Journal of Early Adolescence*, *25*(1), 17-71.

Lerner, J. V., Phelps, E., Forman, Y. E., & Bowers, E. P. (2009). *Positive youth development.* John Wiley & Sons, Inc.

Leversen, I., Danielsen, A. G., Birkeland, M. S., & Samdal, O. (2012). Basic psychological need satisfaction in leisure activities and adolescents' life satisfaction. *Journal of Youth and Adolescence*, *41*(12), 1588-1599.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage.

McLaughlin, M. W. (2000). Community counts: How youth organizations matter for youth development. *Public Education Network*

Missouri Department of Elementary and Secondary Education. (2016). *Missouri Agricultural Education Directory*.

National FFA Organization. (2016). Retrieved from www.ffa.org.

National Research Council. (2002). *Neem: a tree for solving global problems*. The Minerva Group, Inc.

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying Self-Determination Theory to educational practice. *School Field, 7*(2), 133-144.

Nunnally, J. C. (1967). *Psychometric theory*. New York: McGraw-Hill.

Pearce, N. J., & Larson, R. W. (2006). How teens become engaged in youth development programs: The process of motivational change in a civic activism organization. *Applied Developmental Science*, *10*(3), 121-131.

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33.

Phelps, K., Henry, A. L., & Bird, W. A. (2012). Factors Influencing or Discouraging Secondary School Students' FFA Participation. *Journal of Agricultural Education*, *53*(2), 70-86.

Phipps, L. J., Osborne, E. W., Dyer, J. E., & Ball A. (2008). *Handbook on agricultural education in public schools* (6th ed.), Clifton, New York: Delmar.

Reeve, J. (2002). Self-Determination Theory applied to educational settings. In E. L. Deci & R. M. Ryan (Ed.), *Handbook of Self-Determination Research* (pp. 3-33). Rochester, New York: The University of Rochester Press.

Reeve, J. (2006). Teachers as facilitators: What autonomy‐supportive teachers do and why their students benefit. *The Elementary School Journal*, *106*(3), 225-236.

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, *44*(3), 159-175.

Reeve, J., Bolt, E., & Cai, Y. (1999). Autonomy-supportive teachers: How they teach and motivate students. *Journal of Educational Psychology, 91*(3), 537.

Reeve, J., & Deci, E. L. (1996). Elements of the competitive situation that affect intrinsic motivation. *Personality and Social Psychology Bulletin*, *22*, 24-33.

Roberts, R., Terry Jr, R., Brown, N. R., & Ramsey, J. W. (2016). Students' Motivations, Value, and Decision to Participate in Service-Learning at the National FFA Days of Service. *Journal of Agricultural Education*, *57*(2), 187-202.

Roth, J. L., & Brooks-Gunn, J. (2003). What exactly is a youth development program? Answers from research and practice. *Applied Developmental Science*, *7*(2), 94-111.

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of Cognitive Evaluation Theory. *Journal of Personality and Social Psychology, 43*(3), 450-461.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68.

Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci & R. M. Ryan (Ed.), *Handbook of Self-Determination Research* (pp. 3-33). Rochester, New York: The University of Rochester Press.

Ryan, R. M., & Grolnick, W. S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of individual differences in children's perceptions. *Journal of Personality and Social Psychology*, *50*(3), 550.

Ryan, R. M., Stiller, J. D., & Lynch, J. H. (1994). Representations of relationships to teachers, parents, and friends as predictors of academic motivation and self-esteem. *The Journal of Early Adolescence*, *14*(2), 226-249.

Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science*, *4*(4), 99-104.

Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist*, *26*(3-4), 299-323.

Schunk, D. H., Meece, J. R., & Pintrich, P. R. (2014). *Motivation in education: Theory, research, and applications*. Pearson Higher Ed.

Simpkins, S. D., Davis-Kean, P. E., & Eccles, J. S. (2006). Math and science motivation: A longitudinal examination of the links between choices and beliefs. *Developmental Psychology*, *42*(1), 70.

Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social &behavioral research*. Sage.

Tian, L., Chen, H., & Huebner, E. S. (2014). The longitudinal relationships between basic psychological needs satisfaction at school and school-related subjective well-being in adolescents. *Social Indicators Research, 119*(1), 353-372.

Vallerand, R. J., & Ratelle, C. F. (2002). Intrinsic and extrinsic motivation: A hierarchical model. In E. L. Deci & R. M. Ryan (Ed.), *Handbook of Self-Determination Research* (pp. 37-63). Rochester, New York: The University of Rochester Press.

Vallerand, R. J., & Reid, G. (1984). On the causal effects of perceived competence on intrinsic motivation: A test of cognitive evaluation theory. *Journal of Sport Psychology*, *6*(1), 94-102.

Vandell, D. L., Shernoff, D. J., Pierce, K. M., Bolt, D. M., Dadisman, K., & Brown, B. B. (2005). Activities, engagement, and emotion in after-school programs (and elsewhere). *New directions for youth development*, *2005*(105), 121-129.

Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist*, *41*(1), 19-31.

Witt, C., Doerfert, D. L., Ulmer, J. D., Burris, S., & Lan, W. (2013). An investigation of school connectedness among agricultural education students. *Journal of Agricultural Education, 54*(2), 186-204. DOI: 10.5032/jae.2013.02186

Young, M. R. (2005). The motivational effects of the classroom environment in facilitating self-regulated learning. *Journal of Marketing Education*, *27*(1), 25-40.

VITA

Amanda Bowling grew up in Montgomery City, MO and engaged in a variety of Positive Youth Development activities such as the FFA, sports, and academic clubs and organizations. Her interest grew within the FFA chapter as she participated in state and national Career Development Event competitions. Following high school, she entered the University of Missouri to pursue a career in agricultural education. She taught middle and high school agriculture for six years in Mid Missouri and loved the impact the SBAE program had on her students. Her passion to further impact students and SBAE programs propelled her to complete a Master's thesis and this experience fostered her passion for research. Her desire to conduct impactful research drove her to pursue a Ph.D. at the University of Missouri in Agricultural Education. Her research interests focus on better understanding the strategies utilized which foster youth motivation specifically within non-formal academic competitions and investigating youth motivation within the agricultural classroom and Positive Youth Development program activities. Through her research and teaching she hopes to impact the motivational strategies utilized within SBAE classrooms, non-formal leadership and educational programs, and Positive Youth Development Programs. In the fall of 2017, she will join the faculty of The Ohio State University in agricultural education.