

Supporting Students' Psychological Needs and Motivation within School Based Agricultural Education Programs: A Mixed Methods Study

Amanda M. Bowling¹ and Anna L. Ball²

Abstract

The purpose of this study was to identify the processes School Based Agricultural Education (SBAE) teachers utilize to support students' psychological needs and motivation. SBAE teachers were sampled who taught for five or more years and displayed a range of SBAE successes. Within the five participating schools, all FFA members were recruited to participate. The average student participant was female, a freshman, and identified agriculture as a potential future career. Through an exploratory sequential design, quantitative instruments were first utilized to gauge the motivational climate and the teachers' autonomy orientation. Grounded theory interviews and observations were utilized to determine the processes of needs support. Through open, axial, and selective coding and the convergent analysis a substantive theory was formed. Within the theory, teacher motivational beliefs emerged as the context of the needs support process and supported the central phenomenon of relatedness. Teachers also utilized extrinsic and intrinsic motivational strategies, along with the intracurricular nature of SBAE programs to strengthen student motivation. Students experienced a range of outcomes including support of competence, support and thwart of autonomy, and a range of extrinsic and intrinsic motivational outcomes. The substantive theory can inform in-service, pre-service, and teacher educators about the motivational process.

Keywords: student motivation; motivational strategies; motivational outcomes; psychological needs; competence; autonomy; relatedness

Introduction

Positive Youth Development (PYD) programs focus on developing mutually beneficial relationships that will have effects on the self, family, community, and society (Lerner et al., 2009). Additionally, PYD programs strive to develop self-identities; initiative; basic emotional, cognitive, and physical skills; competence; social connections; and motivation (Hansen et al., 2003). School-Based Agricultural Education (SBAE) programs, as a subset of PYD, strive to positively develop their youth participants through formal education and intracurricular leadership experiences.

School-based agricultural education (SBAE) programs utilize a tripartite model that includes various experiences within middle and high school classrooms/laboratories, participation in the FFA organization, and participation in Supervised Agricultural Experience (SAE) projects (Phipps et al., 2008). Through these experiences, SBAE programs operate for the purposes of (a) preparing students

¹ Amanda Bowling is an Assistant Professor of Agricultural Education in the Department of Agricultural Communication, Education, and Leadership at The Ohio State University, 2120 Fyffe Rd., Columbus, OH 43210, bowling.175@osu.edu

² Anna Ball is the Associate Dean for Academic Programs in the College of Agricultural, Consumer and Environmental Sciences at the University of Illinois, 1301 W. Gregory, Urbana, IL 61801, aball@illinois.edu

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).

Engagement in PYD programs, such as SBAE 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, successful PYD programs develop social, emotional, cognitive, behavioral, and moral skills; are youth-centered; develop interpersonal and social competence; and provide positive adult support (Eccles & Templeton, 2002; Larson & Walker, 2010). Through the inherent structure of and activities within, PYD 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 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 engagement (Larson & Rusk, 2010). Within the present body of literature, researchers have identified specific PYD program structures that foster intrinsic motivation, including allowing youth to feel challenged, giving youth a sense of control, developing deep attention in the activity, and assisting youth to experience high motivation (Larson & Rusk, 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 et al., 2015).

Psychological need support and motivation can vary when comparing PYD programs and formal education settings. When students experience relatedness within the classroom, they tend to internalize the monotonous and unenjoyable tasks associated with learning (Niemic & Ryan, 2009). However, direct adult socialization is relatively rare within the classroom setting (Csikszentmihalyi & Larson, 1984). When students do not experience relatedness, they tend to externally view the learning tasks and only respond to external incentives or controls (Niemic & Ryan, 2009). Further, teachers can support students’ competence by providing tasks that fall into the optimal challenge domain for each student, and providing appropriate feedback enhances efficacy (Niemic & Ryan, 2009). It is crucial for teachers to provide the appropriate feedback and skills needed to develop and maintain the students’ efficacy and thus their competence (Niemic & Ryan, 2009). Classrooms that provide students with multiple avenues to achieve competence lead to increased motivation and engagement as well (Christenson et al., 2008). Additionally, the supported need for competence is a particularly strong predictor of school-related subjective well-being (Tian et al., 2014).

Supporting the need for autonomy becomes even more complex within formal educational settings. Teachers tend to be more controlling because of the perceived power hierarchy held over the 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). When teachers adopt a controlling orientation and/or utilize controlling behaviors, they suppress students’ intrinsic

motivation (Deci & Ryan, 1985; 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 et al., 1993).

When narrowing the scope of psychological needs support to a specific PYD and educational program, evidence exists that SBAE programs can positively influence youth through increasing competence, relatedness, and autonomy. Research indicates participation in SBAE programs can foster social competence (Phelps et al., 2012) and positive peer groups and friendships (Witt et al., 2013). In terms of developing autonomy, Ball et al. (2016) found that during Career Development Event (CDE) preparation SBAE teachers would provide choices (autonomy) to students in regard to the content studied and the ways in which it was taught. Additionally, students experience volition when participating in general FFA civic engagement activities (Bird et al., 2020). However, when participating in specific service activities such as the National FFA Days of Service, a lack of perceived choice existed (Roberts et al., 2016).

Although researchers have identified effective programmatic structures and their associated benefits, they have not identified the effective practices of PYD adult practitioners and SBAE teachers. A great deal of research has focused on designing and evaluating PYD programs, but researchers have not investigated effective practices of the educators and leaders (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 adult practitioners make decisions regarding motivational strategies within their programs’ contexts (Larson et al., 2015). The identification of specific day-to-day practices which support motivation could be used to disseminate effective practices thus influencing the motivation experienced within and retention of youth within PYD programs. Larson and Rusk (2010) 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 to identify effective practices of youth practitioners when developing intrinsic motivation illuminates a dearth in the literature. Beyond this literature gap, the potential benefits youth can experience from intrinsic motivation such as sustained motivation and participation, illustrates the need to identify effective strategies which support the psychological needs of competence, relatedness, and autonomy.

Theoretical Framework/Philosophical Perspective

This study utilized a theoretical framework and philosophical perspectives to guide the various mixed methods components (Creswell, 2015). Self-Determination Theory (SDT; Ryan & Deci, 2002) served as the theoretical framework for the quantitative portion. SDT asserts that the psychological needs of competence, relatedness, and autonomy are universal, innate needs all humans strive to fulfill (Ryan & Deci, 2002). According to Niemiec and Ryan (2009), when all three psychological needs are met youth experience increased intrinsic motivation, willingness to engage in less enjoyable tasks, and valuing of academic activities. With this, youth experience higher-quality learning outcomes, increased wellness, and a greater perceived value of school (Niemiec & Ryan, 2009). 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).

For the qualitative portion of this study, we utilized a philosophical perspective to identify our assumptions regarding how knowledge is discovered, the nature of the world, and how the knowledge of participants can best be captured (Creswell, 2015). Our philosophical perspective, underlined by our pragmatist epistemology, framed the qualitative ontology and methodology utilized. Due to the sequential nature of the study, it is nearly impossible to separate the theoretical framework and the

philosophical perspective. Thus, we used the quantitative theoretical framework of SDT as a lens within the philosophical perspective in which we 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 the characteristics of psychological needs and intrinsic motivation. Although we utilized SDT as a lens, all data emerged from the knowledge of the participants.

Purpose and Research Objectives/Questions

The purpose of this study was to identify the strategies, actions, and processes teachers utilized to support students' psychological needs within all facets of SBAE programs. This study aligns with Priority 5: Efficient and Effective Agricultural Education Programs of the American Association for Agricultural Education National Research Agenda as it seeks to identify effective motivational strategies utilized within SBAE programs. (Roberts et al., 2016).

Quantitative Objectives:

1. Describe students' psychological needs support within SBAE programs.
2. Describe the autonomy-supporting orientation of the SBAE teachers.

Qualitative Central Question: How are psychological needs supported within SBAE programs?

Convergent Question: What actions and processes that the SBAE teachers utilize within and outside of the SBAE classroom support the students' psychological needs?

Methods

This study utilized a mixed-methods exploratory sequential design quant → QUAL (Tashakkori & Teddie, 2010). To begin, quantitative data were collected through online questionnaires. The quantitative findings then helped to select students to be interviewed, identified potential areas of observation, and developed probing interview questions. Qualitative data were then collected through the use of grounded theory interviews and field observations.

Purposive sampling was utilized to identify SBAE teachers ($n = 5$) who best embodied a total SBAE program within Missouri (Creswell, 2013). SBAE teachers were selected who taught for five or more years, utilized a variety of curriculum resources, taught at varying types of schools and within varying community environments, earned the Top 10% FFA chapter award, had multiple state qualifying CDE teams, and met the state recommended Supervised Agricultural Experience (SAE) project visits. The SBAE teacher participants consisted of three females (60%) and two males (40%), with an average age of 34 ($M = 33.80$, $SD = 5.36$), an average of 10 years teaching agricultural education ($M = 9.40$, $SD = 3.36$), and all participants possessed a traditional teaching license. Within the five participating schools, two were rural comprehensive high schools with a two teacher SBAE program, one was a rural comprehensive high school with a single teacher SBAE program, one was a suburban comprehensive high school with a two teacher SBAE program, and one was a suburban technical center with a SBAE program with five or more teachers.

FFA rosters were acquired and all FFA members ($n = 368$) were recruited to participate. A census of FFA members was performed to account for variations in demographics and cultural experiences. We acknowledged that the environment in which youth grow up in is a crucial part of their culture, experiences, and motivation. Thus, we sampled School-Based Agricultural Education programs and students from varying environments. The consenting sample who provided a completed questionnaire resulted in the final usable data sample of $n = 222$ with a response rate of 60%. The average student participant was female ($n = 120$; 54.05%), a freshman ($n = 106$; 47.75%), had not attended any FFA conventions ($n = 109$; 49.10%), had not held an FFA office ($n = 178$; 80.18%), had

not competed in CDEs ($n = 126$; 56.76%), and identified agriculture as a potential future career ($n = 62$; 27.93%). At the time of the study, freshman would have engaged in just over a semester's worth of SBAE classes and FFA activities, thus providing a limited view of their experiences within the SBAE program. While a majority of the participants were freshman, over half of the sample ($n = 117$; 52.25%) consisted of sophomores, juniors, and seniors with varying levels of participation and experiences within the SBAE program.

The Basic Psychological Needs Scale (BPNS; Deci, & Ryan, 2006) was utilized to capture the degree to which students' psychological needs were satisfied and consisted of the constructs: relatedness, competence, and autonomy. The BPNS instrument included a seven-point Likert scale with the anchors: *1: not at all true, 4: somewhat true, and 7: very true*. Students reflected on their experiences within and life away from the SBAE program. The Problems in Schools instrument (PIS; Deci et al., 1981) was utilized to measure the degree to which teachers tended to be autonomy supportive versus controlling. The PIS instrument included a seven-point Likert scale that included the 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.

To address content validity, we consulted a panel of experts ($n = 4$). The panel consisted of experts in the field of agricultural education, positive youth development, youth motivation, and quantitative instrumentation, data collection, and data analysis. The PIS instrument had a reported Cronbach's alpha 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. A secondary study found that the moderately autonomous construct did not correlate with an autonomy supportive orientation (Reeve et al., 1999). Thus, the moderately autonomous construct was withheld from the data analysis. For the BPNS instrument, a pilot study was conducted ($n = 26$). The Cronbach's alpha for all three constructs was above .70. 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 and above .70 for all other constructs. Since the sample size is limited, caution should be utilizing when interpreting data from the PIS. The BPNS instrument ($n = 221$) had a Cronbach's alpha of 0.60 for the autonomy construct and above .70 for all other constructs. Due to the exploratory nature of this study, the autonomy construct was deemed acceptable by meeting the threshold of 0.60 (Hair et al., 2010; Nunnally, 1967).

To begin quantitative data collection, the PIS instrument was delivered online to the SBAE teachers. Following the completion of the PIS instrument, the BPNS instrument was delivered online to the SBAE teachers for students to complete during their SBAE class. Due to the required adult consent process for study enrollment and the lack of generalizability due to the use of purposive sampling, non-response error was not accounted for. To analyze the quantitative data, mean and standard deviation were calculated for the students' psychological needs support. To begin analyzing the teacher quantitative data, means were calculated for the autonomy and controlling constructs. The teacher orientation means were then inputted into the following equation: $\text{Teacher Orientation} = 2(\text{Highly Autonomous } M) - 1(\text{Moderately Controlling } M) - 2(\text{Highly Controlling } M)$ (Reeve et al., 1999).

Next, a single researcher conducted 28 hours of field observations. For each teacher participant, one half-day (4 class periods) of classroom observations were conducted. Additionally, one FFA activity per teacher was observed. These activities included monthly FFA meetings, community service projects, agriculture advocacy events, and CDE practices. Observations were video recorded and field notes were conducted using observational organizers.

Next, one-on-one, semi-structured interviews were conducted with all teacher participants ($n = 5$) and purposefully sampled student participants ($n = 15$). Students were purposefully sampled for

maximum variation within age, sex, grade level, rural/urban, needs support, and amount of FFA participation. All interviews were audio recorded and transcribed verbatim. Memoing was conducted following each interview and interview questions evolved as the theory emerged (Corbin & Strauss, 2015). A variety of validation strategies were utilized to uphold validation and trustworthiness (Lincoln & Guba, 1985). Trustworthiness was upheld through the triangulation of data sources, comparison of emerging themes and subthemes, and maintaining a continuous coding audit trail. Credibility was established through peer debriefing and investigator triangulation at various stages in the research. To maintain intra-rater reliability of the observational organizer, the observations were cross-checked for internal consistency.

Due to the research design, the interviews were primary data sources. The classroom and FFA activity observations were ancillary data sources. Constant comparative analysis and open, axial, and selective coding was utilized for all interviews (Corbin & Strauss, 2015). We triangulated and analyzed the interview data, memos, codes, and categories to develop emerging themes and the substantive theory. We then utilized line by line coding to analyze the observational data and allowed categories to emerge. Following the selective coding process, we triangulated the observational categories to further develop and adjust the emerging themes and theory. Following these analyses, we triangulated and interpreted the qualitative and quantitative results to address the convergent research question (Creswell & Clark, 2011).

Quantitative Results

Quantitative research objective one sought to describe students' psychological need support within and outside SBAE programs (see Table 1). Competence within and outside the SBAE program was slightly supported (SBAE $M = 4.52$, $SD = 0.96$; Outside $M = 4.71$, $SD = 0.90$). Relatedness within and outside the SBAE program was slightly supported (SBAE $M = 4.87$, $SD = 0.86$; Outside $M = 5.04$, $SD = 0.87$). Autonomy within and outside the SBAE program was slightly supported (SBAE $M = 4.70$, $SD = 1.00$; Outside $M = 4.97$, $SD = 0.85$).

Table 1

Description of Psychological Need Support Within and Outside SBAE Program (n = 222)

| Psychological Need | Context | <i>M</i> | <i>SD</i> |
|--------------------|----------------------|----------|-----------|
| Competence | SBAE Program | 4.52 | 0.96 |
| | Outside SBAE Program | 4.71 | 0.90 |
| Relatedness | SBAE Program | 4.87 | 0.86 |
| | Outside SBAE Program | 5.04 | 0.87 |
| Autonomy | SBAE Program | 4.70 | 1.00 |
| | Outside SBAE Program | 4.97 | 0.85 |

Quantitative research objective two sought to describe the autonomy-supporting orientation of the SBAE teachers. Table 2 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 2*Means and Algebraic Sum of Teachers' Orientation (N = 5)*

| | Highly Controlling | Moderately Controlling | Highly Autonomous | Algebraic Sum |
|----|--------------------|------------------------|-------------------|---------------|
| T1 | 3.38 | 4.75 | 4.63 | -2.25 |
| T2 | 3.13 | 3.75 | 5.00 | -0.01 |
| T3 | 4.13 | 5.25 | 4.63 | -4.25 |
| T4 | 5.00 | 6.25 | 6.25 | -3.75 |
| T5 | 3.86 | 3.75 | 3.00 | -5.47 |

Qualitative Findings

The qualitative central question was, how are the psychological needs supported within the SBAE program? It emerged that the psychological needs of competence, relatedness, and autonomy were supported in a variety of ways. We also determined that relatedness emerged as the central phenomenon of the study and influenced the ability of the other needs to be supported. It also emerged that the beliefs teachers held, motivational strategies utilized, and intracurricular nature of SBAE programs influenced students' psychological needs support.

Context: Teacher Beliefs

It emerged that teachers possessed a variety of motivational beliefs. To begin, teachers believed schools produce students who harbor compliance, not motivation, due to extrinsic grades, procedures, and policies. Teachers believed the extrinsic nature of grades causes students to experience pressure. 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." The 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. Further, teachers believe the extrinsic nature of schools 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."

While schools are viewed as extrinsic bounded systems, teachers credited the inherent nature and goals of SBAE programs as a way for students to learn and grow beyond the schools' extrinsic nature. 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 focus of SBAE programs allowed students to focus less on accountability, and more on developing knowledge and skills necessary to be successful in their future endeavors.

Teachers revealed very specific differences within their beliefs about their roles as teachers and FFA advisors. Teachers believed their main role as a teacher was to facilitate learning through the presentation of curriculum. Thus, teachers perceived that they needed to control the learning environment and believed in the need to utilize teacher-directed methods, which focused on expert-to-novice knowledge transfer. 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.

Teachers believed students were motivated in a variety of ways to learn. Robin stated, "Motivation has to come in a variety of different forms." A majority of teachers believed students are

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. One teacher acknowledged that she was uncertain whether the motivational strategies she utilized would shift extrinsically based to intrinsically based motivation. Teachers also 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.

Central Phenomenon: Relatedness

Within every interview and observation, it was evident that teachers intentionally strived to develop mutual, caring relationships. Teachers utilized specific strategies to build relationships. The most prominent strategy was humor displayed by using sarcasm and joking with students. Steven said, “I think if a kid can laugh, you can go ahead and gain their attention.” The next most prominent strategy utilized was providing encouragement and praise. For example, teachers told students that “you are appreciated.” Additionally, teachers would greet students, watching for mood changes or health issues, ask how they were feeling, and ask if there was anything the teacher could do to help. Another strategy utilized was to develop deep understanding of students so teachers could incorporate the students’ experiences into the classroom and FFA. Teachers also strived 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. Teachers further 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.” By developing this mutual, caring relationship built upon understanding, students became more receptive to the motivational strategies teachers utilized.

It was evident that the FFA was a key instrument within the SBAE program in which teacher-to-student relationships were developed. The time outside of the classroom, which is required to advise the FFA, prepare CDE teams, and advise SAE projects provided ample time for the teacher to engage with students in small groups, socialize, and hold personal conversations. 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.”

Student-to-student relationships were also fostered within the FFA and classroom. The observations showed that throughout every FFA activity, students were provided ample opportunities to interact and socialize. Within CDE practices, numerous opportunities arose where students could socialize, while also engaging in peer teaching and peer motivation. Within the classroom, 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].” Further, a variety of peer-based instructional strategies were utilized to enhance student learning and relationships such as cooperative learning groups, peer teaching, peer checks for understanding, partner work, and partner share. Following the development and strengthening of student-to-student relationships, the teachers utilized the relationships to enhance student motivation through the use of peer motivation.

Subsequent Conditions: Motivational Strategies and Intracurricular Total SBAE Program

To encourage classroom and FFA participation a variety of extrinsic, internalized, and

intrinsic motivational strategies were utilized. Within the FFA, many of the extrinsic strategies included incentives and rewards such as food, scholarships, grades, points charts, rewards trips, recreation, leadership medals, and raffles. Within the classroom, teachers also discussed extrinsically motivating students or encouraging compliance by bluffing students with threats of either punishment or the removal of incentives and rewards. Teachers acknowledged that the extrinsic strategies were more likely to foster compliance but hoped it would eventually transform into more intrinsic motivation if students found activities which they could internalize. Internalized motivation was encouraged by increasing students' valuing of content, aligning content with student self-schemas, and developing goals. Student 338 stated, "because you hear people using stuff they learn in Ag. You don't hear people saying I use geometry every day." 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. To encourage intrinsically based student classroom and FFA participation, teachers utilized student interest to drive content and activity selection. Teachers also fortified a sense of novelty through the variety of content presented and activities utilized within the agricultural classes.

It emerged that by utilizing a total SBAE and by connecting the classroom, FFA, and SAE students were provided experiences which enhanced student learning, motivation, and needs support. Teachers and students agreed that the SBAE classroom provided 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. Students were also able to apply their prior knowledge and develop more career-specific knowledge and confidence through their SAE. Kyle stated, "I think it's incorporating the three-circle model into our everyday life of SAE and FFA into classroom instruction, so when you add in that variety that lends itself to having so much going on in a 45-minute class." Through the incorporation of all SBAE program components within the classroom, a variety of teaching methods were utilized, and students discussed how the variety helped to heighten their engagement and motivation. 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."

Student Outcomes: Supported Psychological Needs and Motivational Outcomes

One pivotal mechanism which fostered the need of competence through student confidence was the hands-on nature of the agriculturally based content. Students discussed that the hands-on content allowed them to more confident and engage deeper. Student 330 stated, "I'm a better hands-on learner... 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." Much of the confidence students felt within the SBAE classroom stemmed from prior knowledge from previous classes or home. Many students stated that when they possessed prior knowledge, they felt more confident, were more likely to be engaged, and were more motivated to build upon their knowledge. For students who lacked prior knowledge, 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. Student confidence was also fostered through teacher provided praise and encouragement within both the classroom and FFA. Students also built confidence through the successes they experienced within the FFA. 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." CDEs and SAE projects provided

mechanisms in which students could further apply and 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.

Much of the autonomy occurring within the SBAE program was fostered through students' independent work. During independent work, teachers provided basic instruction, answered student questions, provided guidance, or would even be out of the room at times. Students discussed feeling more motivated because they felt they were making a difference in their learning based on the decisions they could make. 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." The FFA chapter also provided more opportunities for the students to direct their actions through independent work. During FFA activities, the advisors played a more supportive role for the students, which allowed for students to work independently and solve their own problems. Along with independent work, the teachers provided students choices, which increased autonomy. 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. Student choices were identified within (a) agricultural course selection, (b) order of class units, (c) classroom projects, (d) proficiency award application areas, (e) group work partners, (f) agriscience projects, and (g) CDE preparation. Within the FFA, students experienced choices related to their participation and activity development and design. Students were also provided choices within their SAE projects by being able to conduct their projects in an area of interest and by making management decisions with either some 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." In addition, teachers encouraged autonomy through listening and encouraging students.

The primary way in which autonomy was thwarted within the SBAE program was by the teacher providing directives. Within the classroom, teachers utilized directives in two forms, to direct learning and to control students' negative behaviors. Within the FFA, directives were primarily given to command students on how to set up for an activity, instruct students about CDE content, and control student behavior. Student autonomy was also thwarted when teachers provided direct instruction in which the teacher was the primary speaker, provided solutions, and held the learning materials. Student autonomy was also thwarted through the use of grades, incentives, and rewards as a means to control behavior. 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 class, and participate in the FFA. Although choices were provided within the SBAE program, a significant lack of choices was witnessed, specifically within the classroom. Further, in some programs, students were provided little to no choices regarding their required participation in CDEs, agriscience projects, and proficiencies.

Students experienced a range of motivational outcomes within SBAE programs. To begin, students identified a variety of ways in which they were extrinsically motivated. In the classroom, students were motivated due to wanting to earn respectable grades for college entry and to satisfy their parents. FFA participation was motivated by the points system, "cool" trips, leadership medals, and food. Regarding the points system, Student 104 stated, "It's kind of like a goal from what I have

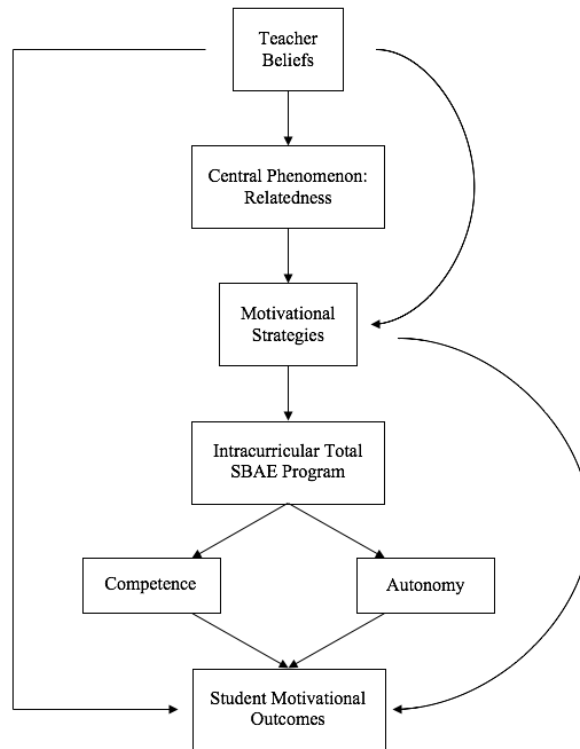
seen from kids. They are trying to reach a goal of so many points and get so much done.” While being initially motivated by extrinsic motivators, students discussed finding activities or content areas they could internalize through their continued engagement. Student 330 stated, “ever since then, it’s just been building, and I just enjoy it more and more every year.” Students also experienced more internalized motivators. For example, students experienced connecting knowledge gained to their future careers, engaging in experiences that connect to their self-schemas, expanding beyond their comfort zone, having enjoyable learning experiences, and internalizing the hands-on nature of the content. 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. 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. Students were intrinsically motivated in both SAEs and CDEs through student autonomy and their ability to direct the learning and preparation process. Student choices and engaging in novel experiences also fostered student intrinsic motivation.

Discussion

To address the convergent research question all data sources were triangulated and a substantive theory emerged. Within the theory (see Figure 1), 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 continued support of relationships no other psychological needs support or motivationally strategies would be affective. The motivational beliefs teachers held also influenced the strategies utilized and the outcomes students experienced and were underlined by their controlling orientations. Following the development of relationships, teachers utilized a variety of extrinsic and intrinsic strategies to motivate students. Intracurricular experiences were then created to strengthen the students’ psychological needs support and motivational experiences. Student displayed several outcomes including competence support, autonomy support and thwart, and extrinsic and intrinsic motivational outcomes.

Figure 1

The Process of Supporting Psychological Needs Within the SBAE Program.



As demonstrated by the theory, supporting the psychological needs of SBAE students was a sequenced process built upon teacher beliefs and student experiences. This study shows that student needs and motivational support were not triggered through a one-time awe-inspiring experience but were rather cultivated through deliberately built upon experiences. The emergence of psychological needs and motivational support as a process aligns with previous research that emphasizes motivation as a process (Schunk et al., 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.

SBAE teachers must be dedicated to upholding the motivational process as students progress through the SBAE program. Additionally, the process of supporting needs and motivation must be incorporated into the day-to-day activities of all SBAE components. Teachers need to be intentional in their actions to motivation students based upon the outcomes desired. Thus, teachers need to develop an in-depth understanding of how to utilize strategies within the identified process to truly foster psychological needs support and intrinsic motivation.

Teachers held very specific beliefs about student motivation and how the school, SBAE program, and teacher influenced the students' motivation. 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.

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 developing strong caring relationships with students as the foundation of the motivational process.

These beliefs are substantiated by previous research which emphasizes the importance of teacher-student relationships (Christenson et al., 2008; Niemiec & Ryan, 2009). Next, teachers incorporated student interest and enjoyable activities within all SBAE program components. Teachers also incorporated experiences where student confidence was developed through application within one or more program components. Student autonomy was also intentionally supported through student directed FFA and SAE activities, while also being less supported within the SBAE classroom. The lack of student autonomy support aligns with previous classroom literature (Reeve, 2002; 2009). Through the motivational beliefs and actions of the teachers needs support was seen within SBAE programs.

While teacher beliefs did support psychological needs within the SBAE program, teacher beliefs also undermined the motivational process. Teachers believed in developing relationships, supporting confidence and autonomy, and incorporating interest, but they also believed that 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 motivational strategies. Further, the teachers exhibited a divide in their beliefs regarding their roles as both teachers and FFA advisors. When fulfilling the role of FFA advisor, the participants believed they should foster student-directed activities, whereas the belief of student-directed activities was nearly vacant in the classroom. The lack of classroom student-directed activities aligned with previous literature (Reeve 2002; 2009).

The contradictory nature of beliefs and strategies utilized caused inconsistencies in student motivational outcomes. While the strategies used supported the psychological needs and intrinsic motivation of some students, the constant utilization of extrinsic strategies undermined the needs and intrinsic motivation support. The use of extrinsic motivational strategies which undermined autonomy and intrinsic motivation aligns with previous research (Deci & Ryan, 1975).

Recommendations

While the results of the study came from a limited sample, some recommendations can be made that readers can assess for application to their own situation. To begin, SBAE teachers should reflect on their motivational beliefs and determine how their beliefs influence how they motivate students. Teachers should also analyze how to best develop relationships and how FFA activities and SAE visits influence their ability to build relationships. Teachers also need to contemplate how to develop relationships with students who are less active in the FFA. Current motivational practices should be reviewed and altered to best suit the desired student motivational outcomes. If SBAE teachers truly desire to promote intrinsic motivation, they must develop and intentionally utilize strategies which will foster intrinsic motivation. Thus, they need to intentionally incorporate the students' values, goals, future aspirations, and interests into classroom and outside of school activities. Additionally, supporting students' psychological needs, teachers will also foster intrinsic motivation. Teachers should intentionally utilize strategies that foster confidence, a sense of belonging, and student autonomy (Ryan & Deci, 2002). Teachers should scaffold youths' experiences and incorporate the students' prior knowledge/experiences to build confidence Teachers need to foster youth to adult and youth to youth relationships. Lastly, teachers should provide student choices and decrease the use of directives (Reeve 2002; 2009).

Professional development should be offered to help teachers reflect upon and alter their motivational processes, examine their motivational beliefs, explore empirically supported motivational strategies, and create a motivational plan which focuses on intentional motivational strategies. 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. Motivationally based standalone courses can be developed to specifically analyze motivational theories and strategies while incorporating various learning and PYD strategies. Within existing courses,

motivationally based lessons centered upon lesson planning, teaching methods, classroom and behavior management, and assessment can be delivered to enhance the pre-service teachers' ability to proactively address student motivation.

To further substantiate the needs support process this study should be replicated to include more 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 classes and organizations, along with other PYD programs. Further, qualitative studies should be conducted to examine the formation and application of teachers' motivational beliefs. Quantitative studies should be conducted to determine the frequency of motivational strategies utilized. Further, quantitative and mixed-methods studies should be conducted to identify SBAE students' motivational drivers and outcomes.

References

- 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. <https://doi.org/10.5032/jae.2016.03115>
- Bird, W. A., Bowling, A. M., & Ball, A. L. (2020). Civic Engagement, Autonomy, and Reflection: Factors Influencing Youth's Self-Perceived Civic Responsibility. *Journal of Agricultural Education, 61*(1), 203-220. <https://doi.org/10.5032/jae.2020.01203>
- 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.
- 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.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.
- Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Sage.
- Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Sage.
- Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent: Conflict and growth in the teenage years*. 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., & Ryan, R. M. (1975). *Intrinsic motivation*. John Wiley & Sons, Inc.

- 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.
- Eccles, J. S., & Templeton, J. (2002). Extracurricular and other after-school activities for youth. *Review of Research in Education, 26*, 113-180.
- Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (Vol. 7). Pearson.
- 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.
- 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.
- Lerner, J. V., Phelps, E., Forman, Y. E., & Bowers, E. P. (2009). *Positive youth development*. John Wiley & Sons, Inc.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage.
- 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*. McGraw-Hill.
- 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.). 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). The University of Rochester Press.
- 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.
- 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.
- Roberts, T. G., Harder, A., & Brashears, M. T. (Eds.). (2016). *American Association for Agricultural Education national research agenda: 2016-2020*. Gainesville, FL: Department of Agricultural Education and Communication.
- 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). 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.
- Schunk, D. H., Meece, J. R., & Pintrich, P. R. (2014). *Motivation in education: Theory, research, and applications*. Pearson Higher Ed.
- 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.
- 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. <https://doi.org/10.5032/jae.2013.02186>