

Teacher Perceptions of Relatedness in School-Based Agricultural Education: A Mixed Methods Study

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Abstract

This exploratory sequential study explored teacher perspectives about building relatedness in their School-Based Agricultural Education (SBAE) program by utilizing semi-structured interviews, and the data were used to build an instrument to further examine the use of relatedness. In the qualitative phase, we utilized a basic qualitative design and purposively sampled ($n = 8$) Ohio teachers. We found that teachers shared four relatedness themes in their SBAE program: attainable relationships, student commitment, accessible mentorship, and student collaboration. In the quantitative phase, a stratified probabilistic sampling of our target audience ($n = 320$), which was the National Association of Agricultural Educators (NAAE) Region IV teachers. The quantitative results demonstrated that teachers perceived that it was somewhat true that each of the relatedness themes were present in their programs. Additionally, it was found that demographic data had no relationship to the presence of the relatedness themes. From these findings, it is recommended that SBAE teachers use pedagogical and programmatic strategies that allow the four themes of attainable relationships, student commitment, accessible mentorship, and student collaboration to flourish within their SBAE program.

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Introduction and Problem Statement

Teachers can motivate students by coordinating instruction with motivational factors (Quin, 2017; Reeve & Halusic, 2009). Additionally, teacher beliefs are central to developing relatedness to further support motivation (Deci & Ryan, 1991; Mikami et al., 2017; Quin, 2017). This concept of relatedness refers to our need to feel connected to those in our environment wherein we feel cared for and that we belong (Deci & Ryan, 1991). To this end, students need to have high levels of emotional support from their teacher and peers to feel safe to engage in learning activities (Gasser et al., 2018).

Specifically, within School Based Agricultural Education (SBAE), teacher actions are pivotal to student decisions, engagement, and motivation (Ball et al., 2016; Baker & Robinson, 2017; Curry, 2017; Ryan & Deci, 2020). Student motivation within SBAE can be built through exposure to teamwork and novel activities (Anderson, 2013; Baker & Robinson, 2017; Bowling & Ball, 2020). SBAE teachers also motivate by building mutual, caring relationships (Bowling & Ball, 2020) and research demonstrates strong connections between program engagement, motivation, and relationships (Anderson, 2013; Bowling & Ball, 2020; Ryan & Deci, 2020).

While research shows the benefits of relatedness such as increased learner engagement, higher levels of motivation, and more classroom connections (Anderman, 2021; Klassen et al., 2012; Mikami et al., 2017; Urdan & Schoenfelder, 2006). These studies have only begun to scratch the surface of our understanding of relatedness, specifically within SBAE programs. Additionally, there is a gap in literature exploring teacher beliefs and strategies used to support relatedness. By identifying SBAE teacher beliefs and perceived use of relatedness strategies we can provide insight to pre- and in-service SBAE teachers to build learning environments centered on relatedness to garner student engagement, desire to learn, and student interest.

Theoretical Framework/Philosophical Perspectives

Self-Determination Theory (SDT) served as the lens for the qualitative phase of the study while also serving as the framework for the quantitative data collection. SDT encompasses a need-based concept of motivation, so one feels competent, autonomous, and related to their environment to engage in activities (Deci et al., 1991; Deci & Ryan, 1985; Ryan & Deci, 2020). We specifically centered on the concept of relatedness, which is defined by Ryan and Deci (2020) to be the feeling of connection between people in a group of space, especially in learning environments, and is built through rapport, respect, and care within the group.

Relatedness is one of the most foundational tactics teachers can use to motivate students (Anderman, 2021). Individuals who feel relatedness in learning environments are more engaged, less fearful of new experiences, and seek out support independently (Deci et al., 1991; Deci & Ryan, 1985; Ryan & Deci, 2020). Further, relatedness can provide the necessary social context to develop intrinsic motivation (Deci & Ryan, 1985, 1991; Deci et al., 1991), which can be a driving force for SBAE student engagement (Anderson, 2013; Baker & Robinson, 2017;

Ball et al., 2016; Bird et al., 2013; Bowling & Ball, 2020; Curry, 2017). While there are many motivational factors to consider within SBAE, we selected the SDT concept of relatedness due to research findings that suggest there are strong bonds within SBAE.

Purpose

We sought to explore teacher relatedness beliefs, how these beliefs are present in SBAE programs, and if relationships exist between these beliefs and the identified demographics. We hoped to identify the modalities and benefits of relatedness in SBAE programs as a matter of best practice for the profession.

Qualitative Central Questions:

1. What specific strategies are used to support relatedness within an SBAE program?
2. If this concept is present in SBAE programs, what beliefs and strategies do SBAE teachers possess and use regarding relatedness?

Quantitative Objectives:

1. Describe SBAE teachers perceived presence of accessible mentorship, attainable relationships, student commitment, and student collaboration relatedness.
2. Describe the relationship between teacher age, years of service, years of service in their school, gender, and the presence of the four relatedness themes in their SBAE program.

Methods

We used a mixed-methods exploratory sequential design (QUAL → quant) (Creswell & Plano Clark, 2018). To begin, the qualitative data were collected through interviews. We then used the qualitative findings to create a quantitative questionnaire. Data was collected and analyzed during the 2021-2022 academic year.

Qualitative Methods

We used a basic qualitative design (Merriam & Tisdell, 2016). We bracketed our biases as we were all former SBAE students, with two of us being previous SBAE teachers. Two researchers were agricultural education faculty members, one of the faculty members was also a graduate student, and one agricultural education graduate student completed the research. Purposive sampling was used to identify Ohio SBAE teachers based on criteria that included teachers who had taught for five or more years, were believed to support student relationships, and represented a wide range of experiences regarding years in the profession and location of their school. We asked state staff to help identify potential participants and eight teachers were sampled ($n = 8$). Most participants were female ($n = 5$, 62.50%), taught in rural programs ($n = 5$, 62.50%), and held a traditional teaching license ($n = 6$, 75.00%). The participants were split between single and multi-teacher programs ($n = 4$, 50.00%) and averaged 12 years of teaching experience ($M = 11.75$, $SD = 4.84$).

Table 1

Demographics of Interview Participants

Pseudonym	Yrs. of Service	Location	Staff Size	Gender	Licensure Type
Ben	4	Suburban	2	Male	Traditional
Beth	8	Rural	1	Female	Traditional
Bob	10	Rural	1	Male	Traditional
Cheryl	13	Suburban	1	Female	Traditional
John	6	Rural	2	Male	Alternative
Jane	15	Rural	2	Female	Traditional
Susan	20	Rural	2	Female	Traditional
Tammy	18	Suburban	4	Female	Alternative

We collected data through semi-structured, one-on-one Zoom interviews. An interview guide was created by the research team using the Creswell et al. (2007) practice of linking broad research questions to specific, open-ended questions in order to build rapport, ensure clarity, and allow for rich data. All interviews were recorded, ranged from 45 to 60 minutes, and were transcribed verbatim. We also captured interview field notes. Data saturation occurred after six interviews, and then two additional interviews were conducted.

Data were analyzed through a three-phase process (Merriam & Tisdell, 2016). Interviews and field notes were line by line coded, then like codes were combined into categories, and like categories were combined into themes (Merriam & Tisdell, 2016). Trustworthiness was upheld using expert reviews, data saturation, member checking, peer debriefs, thick-rich descriptions, audit trails, and reflective journals (Lincoln & Guba, 1985).

Quantitative Methods

We used a quantitative descriptive-relational design to explore teacher perceptions about relatedness in their program and identify any relationships that might exist between program relatedness and teacher demographics. Stratified random sampling targeted National Association for Agricultural Educators (NAAE) Region IV ($N = 2,229$) with at least one year of experience, aiming for a sample size of 320, accounting for anticipated low response rate (Krejcie & Morgan, 1970). 14 emails bounced, resulting in a revised sample of 320. After five reminders, the response rate was 22.19% ($n = 71$) and the usable sample was 20.93% ($n = 67$). The majority of participants taught in rural schools ($n = 65, 71.00\%$), in a single-teacher program (60%, $n = 54$), with a program enrollment between 1 to 50 students (40%, $n = 36$), were 36 years old ($M = 35.76, SD = 9.48$), taught SBAE for 13 years ($M = 12.71, SD = 8.75$), taught at their current school for 11 years ($M = 10.70, SD = 8.22$), and shared 60% ($M = 59.33, SD = 15.58$) of their interests with students.

We used the qualitative themes and SDT to frame relatedness constructs within a quantitative instrument. Additionally, demographics from previous research found to influence relatedness

were included. The questionnaire items were developed based on the themes identified from the qualitative data analysis, using participant knowledge and experiences discussed in the interviews to create items. All four themes were equally represented within the questionnaire. Sample questions for each construct are provided below, in Table 1. A panel of experts ($n = 5$) established the face and content validity (Creswell & Creswell, 2018). The experts included four teacher educators who had previously taught agricultural education and a current agricultural education teacher. A pilot study was conducted to estimate reliability ($n = 24$). Cronbach's Alpha for all four constructs were above $\alpha = .60$, which is acceptable for exploratory studies (Hair et al., 2010; Nunnally, 1967). A pilot study was conducted to estimate reliability. We sent the questionnaire to teachers who were representative of the study's intended sample ($n = 24$). Cronbach's Alpha for all four constructs were above $\alpha = .70$, which is acceptable for exploratory studies (Creswell & Creswell, 2018).

Table 2

Quantitative Sample Questions from Relatedness Questionnaire

Qualitative Theme	Sample Quantitative Questionnaire Items
Attainable Relationships	My program avoids jargon when naming events for students. My program offers experiences that students can envision themselves participating in.
Student Commitment	My program values student-drive success. My students convince new students to join the program each year.
Accessible Mentorship	I know my students on a personal level. My students view me as a role model.
Student Collaboration	My students have many opportunities to work within a team. My program has underclassmen who encourage younger members.

Note. All questions were presented with a 5-point Likert Scale for their response from Not true at all (1) to Completely True (5).

The Qualtrics questionnaire and five reminders were sent to participants utilizing the tailored design method (Dillman et al., 2014). Nonresponse error was addressed by randomly selecting 10% ($n = 24$) of nonresponding participants; each person was contacted three times. When comparing the response to the Likert Scale questions, no statistically significant differences were found between the two groups ($p > 0.05$) and the non-respondents were included for a total response rate of 27% ($n = 91$). Objective one was analyzed using descriptive statistics. Using guidelines from Fife-Schaw (2006) real limits were set. For objective two, Pearson Product Moment Correlations were conducted between continuous variables; Point Biserial Correlation were conducted between binary and continuous variables. The analysis focused on describing the relationship using direction and magnitude (Davis, 1971).

Qualitative Findings

Theme 1 – Attainable Relationships

The first theme was relationships were attainable for SBAE students. All teachers viewed relatedness as foundational to their program's culture. Cheryl stated, "many students within my program do not have any other place to fit in at school; ag class and FFA serve as their 'school family' and that environment becomes the shared culture." She discussed how many of the students are close friends outside of her program due to the activities offered. Susan discussed how having multiple teachers, and a larger number of courses allows students to find a place within their program's culture. John discussed that having a teaching partner with different strengths allows more students to find a "home" and can support a diverse group of students due to their different personalities. Other teachers in a team-teaching environment identified this situation to allow inclusion for more students. All teachers used words like "family environment" and "welcoming" as ways to describe how they perceive their program feels for students.

Another way to build inclusion and "family environment" within the SBAE program is being mindful of the names of events or activities offered. Cheryl explained clearly how her students will be biased about events or activities from the names or words used to refer to talk about the activity. Cheryl expanded by saying, "Students must be able to see themselves doing the activity from the name, or they won't feel interested or care about being involved." Some examples provided were Farm Tour events that her students now refer to as Farm to Fork Events or hands-on animal labs that refer to the food outcome from the species rather than something more directly about the animal itself. John described student interest in contests revolving around having an interest in the topic. John used the example of a Meats Judging CDE team to describe this, "A group of female students wanted to learn more about how to select good steaks at the grocery. They decided to find a coach, study materials, and have practices to prepare for the contest," John says that this is something that happens from time to time. He also acknowledged that students like to be on teams with friends and choose class content based on their interests.

Theme 2 – Student Commitment

The second theme that emerged was that student engagement in the program is a prerequisite to building relatedness; this includes relationships between teachers, students, and stakeholders. Engagement occurs between the teacher and among students in the classroom each day. That engagement, if positive, can lead to students engaging outside the classroom. Bob stated that he can find out what students are interested in by having one-on-one conversations to select their Supervised Agricultural Experience. Bob used an example of a student who he built a relationship with early in his career. Bob said he was able to easily connect with this specific student after they realized they both enjoyed showing poultry. Their relationship led Bob to advise the student on college decisions. Each participant had similar stories to the one Bob shared. Furthermore, Ben stated, "I see community impact (at our fair) as thousands of people walk through our display that week and the students want to make sure

that our display looks great. The students care because of our relationship (with the community).” All the teachers in the study commented that the stronger students felt about activities in the program, or the adults related to the SBAE program, the more engaged the students became in the program.

Each teacher discussed the school administrators’ impact on program relatedness and student interest. During the interviews, it became clear that relationships between administrators and SBAE programs could be anywhere from really great to very problematic. Susan talked about how in her very rural district, the FFA is a big part of their community, and the building principal knows that this relationship is important for the school district. Due to this, Susan’s administrator meets with Susan and her co-teacher to talk about programming at least once a month. Marie also talked about the awkwardness of how her principal approached her in front of students to talk about program issues. Cheryl stated that she has had outstanding administrators over the years who prided themselves on supporting their program; however, their current administrator seemed to want to have no connection to the program. The students in Cheryl’s program have noticed this disengagement, and students do not have an interest in including the administrator in on program successes. From these examples, one can connect that the relationship between an administrator and the SBAE program must be civil as administrators are program partners who can easily influence relatedness in the program.

Theme 3 – Accessible Mentorship

The third theme that emerged was that there are a number of other opportunities, even beyond those from the SBAE teachers, for mentorship to students enrolled in the SBAE program. SBAE programs, because of their nature, build connections beyond those within the school and the school district. The connections built between students and mentors, teachers and other adults, formed a major part of the support system our participants credited to support relatedness.

Teacher Mentorship

It was clear the participants believed they were role models for students. A widely held belief was that the teacher must model respect, care, and expectations for their students. Tammy discussed how early on in her current position her students brought her questions that she would label personal, “parent” questions. She attributed this to a societal gap in relationships between some students and their guardians. Beth shared that she “treats students like adults in my classroom...they have a great deal of freedom but are responsible for their actions.” Beth believes strongly in this principle as she teaches high school students and feels that this responsibility can help them with the transition to college and work better with the skills they learn from her classroom management style. Each teacher discussed how they prefer to build a learning environment that has the “workplace” level of respect while offering support to help keep students on task. SBAE programs allow for the “workplace” environment, which can serve as a platform for building relationships. Additionally, many of the teachers shared with us that students share with them how much the guidance and support meant to them over the years. However, SBAE teachers aren’t the only source of mentorship in the SBAE program. Many other opportunities exist for mentorship beyond SBAE teachers.

Mentorship from Other Individuals Connected to the SBAE Program

SBAE offers opportunities for mentorship to come from several places: local business owners, Young Farmer Groups, FFA Alumni, or community members. Each teacher talked about volunteers or mentors who serve their students – from the “FFA Mom” who travels to State and National Convention each year to the “Honorary Teacher” who hosts students’ SAE projects in their barn, it became clear that each program has their own unique group of volunteers and mentors who work with their students and program. Ben talked about community members who serve as coaches for his CDE teams and how students have really created lasting relationships with these coaches. While Marie talked about introducing her students to mentors who were “good people” who could model the skills that students need like showing respect, communication skills, business management, work ethic, etc. All the teachers connected needed skills or knowledge as a resource that mentors and volunteers could share with students.

Finally, while it was clear that mentorship was a cornerstone to build relatedness, the teachers did share, in their own way, that not every relationship or mentorship situation works out perfectly. Cheryl discussed how serving as a mentor, and building positive relationships with students has really changed over the course of her career. Further, Cheryl talked about how her perception of serving as a meaningful mentor to students has changed as she has gotten more experience in the profession. Others discussed that relationships aren’t perfect. Marie discussed that the relationships with students are constantly changing; one day things will be great but then the next day the student might not like something that’s happened in class and the relationship might suffer. Overall, though, one of the sentiments gathered from the participants was that each teacher needs to own that everyone has their days and relationships are not always perfect. Especially John and Tammy talked about the importance that modeling how to have a healthy relationship is something that is important for teachers to model for their students.

Theme 4 – Student Collaboration

The fourth theme was that collaboration, and teamwork, is key to developing relatedness. The teachers felt that this meant that their students enjoy working together and that working together makes students feel more comfortable. Bob stated, “I try to get teams of students working together, like my FFA Officer Team.” Further, Bob and his students have faced one of the common challenges discussed by participants in the study; it can take a bit of convincing to get students to leave their comfort zone and work with new people. If you can convince students to do that, Bob and a few other participants believed that you would be on your way to increasing your program’s amount of relatedness. Each teacher talked about how they used intentional projects and activities in the program to allow this teamwork to occur. However, the teachers were clear – sometimes these opportunities need to be sought out, such as officer retreats, competition events, planning program events, and class projects.

Many participants discussed that their SBAE Officer Team plans and conducts social activities for students to do activities together informally. Cheryl talked about using this as a way of having students connect with students they do not know as well, and they begin to build

relationships. Ben talked about using this theme as a way of building leadership skills for his Officer Team, who work together to plan the events. Bob talked about using these activities to get to know which students have relationships outside of class to plan future groupings for classwork. John and Tammy both discussed how their programs use social activities to learn more about the students to help build more relatedness in the program. Beth talked about using activities like this to help build rapport with students so she can build trust to allow them to work together in class on independent study projects. Marie talked about social events through her SBAE program to get to know more about student interests, which can help her plan program activities. Susan talked about having her students plan social activities in groups so that leadership skills and social skills are being built through events like this. Regardless of the “lesson” behind the group, social activities, every participant used social events for different purposes that they perceive to build student relationships while building rapport with students. Doing activities together, in a team, is a theme that was a shared thread among all our participants.

Quantitative Findings

For the quantitative phase, objective one sought to describe the teacher perceptions about the presence of relatedness (see Table 2). The teachers perceived that it was true that accessible mentorship ($M = 4.56$, $SD = 0.37$) is present in their program. Additionally, teachers perceived that it was somewhat true that attainable relationships ($M = 4.46$, $SD = 0.32$), student commitment ($M = 4.39$, $SD = 0.43$), and student collaboration ($M = 4.33$, $SD = 0.41$) were present.

Table 2

Prevalence of Themes in SBAE Programs (n = 91)

Theme	<i>M</i>	<i>SD</i>	Min	Max
Accessible Mentorship	4.56	0.37	4.49	4.63
Attainable Relationships	4.46	0.32	4.40	4.53
Student Commitment	4.40	0.43	4.31	4.48
Student Collaboration	4.33	0.41	4.25	4.42

Note. Real Limits: 1.00 to 1.50 = *not true*, 1.51 to 2.50 = *somewhat not true*, 2.51 to 3.50 = *neutral*, 3.51 to 4.50 = *somewhat true*, and 4.51-5.00 = *true*.

Objective two sought to describe the relationship between demographics and the presence of relatedness. A Pearson Product Moment Correlation was conducted between age, years of service, years of service at their school, perceived shared interests, and gender and the themes of accessible mentorship, attainable relationships, student commitment, and student collaboration (see Table 3). All variables shared negligible relationships; however, perceived shared interests and accessible mentorship ($r = -.14$) and years of service and student collaboration ($r = -.12$) shared the highest relationships. A Point Biserial Correlation was conducted between gender, and the themes shared negligible and negative relationships ($r = -.003$ to $r = -.08$).

Table 3*Pearson Correlations Between Themes and Demographics (n = 91)*

	Accessible Mentorship	Attainable Relationships	Student Commitment	Student Collaboration
Age	.04	-.02	.01	-.09
Years of Service	.03	-.09	-.04	-.12
Years of Service at Current School	.07	-.02	.05	-.08
Perceived Shared Interests	-.14	-.07	-.03	-.09

Table 4*Point Biserial Correlation between Themes and Demographics (n = 91)*

	Accessible Mentorship	Attainable Relationships	Student Commitment	Student Collaboration
Gender	.003	-.02	-.05	.08

Conclusions, Discussion, and Recommendations

The theme of attainable relationships highlights the value of having available individuals who support students, essential for building relatedness. It is crucial that these supporters provide relevant assistance. Students benefit from connecting not just with SBAE teachers but also peers, other teachers, community members, and school staff. Previously, supportive roles focused solely on teachers (Bowling & Ball, 2020; Patell et al., 2018; Quin, 2017; Reeve & Halusic, 2009). The student commitment themes through student engagement reflects their experience of relatedness. The more students feel connected to their program, the more engaged they become. Previous research supports that students' sense of belonging is shown to drive their involvement in SBAE activities (Anderson, 2013; Bowling & Ball, 2020; Curry, 2017).

Accessible mentorship involves identifying and allowing mentors to guide student growth. Teachers often see themselves as parental figures through the unique SBAE program activities. Relationships with stakeholders and administrators also influence program engagement by affecting motivation by supporting or limiting program activities. Past research has found that the additional activities offered in the three-circle model lends to bolstering student motivation and engagement (Anderson, 2013; Bowling & Ball, 2020; Curry, 2017). Lastly, by mentors granting access to knowledge and experiences to foster learning builds relatedness (Klassen et al., 2012; Mikami et al., 2017; Quin, 2017; Ryan & Deci, 2020). The final theme of student collaboration taking place in all three of the circles in the SBAE model and encouraged connectedness to peers and the program. Teachers discussed collaboration as group class

assignments, paired SAE projects, and CDE teams were heavily discussed. This collaboration fosters a sense of belonging and has been validated by prior research (Anderson, 2013; Ball et al., 2016; Bowling & Ball, 2020; Deci, 1972; Deci & Ryan, 1985).

For quantitative research objective one we found that teachers believed that the four relatedness constructs explored were highly present in their programs. If teachers intentionally utilize these constructs to guide their decision-making process, students could be more likely to experience relatedness. These findings are consistent with previous research (Anderson, 2013; Ball et al., 2016; Bowling & Ball, 2020; Deci & Ryan, 1985; Mikami et al., 2017; Quin, 2017; Reeve & Halusic, 2009; Swinehart, 2013).

For objective two we found, non-significant, positive and negative, negligible relationships between the demographics explored and the relatedness constructs. This conclusion contradicts prior research (Deci & Ryan, 1985, 1991; Klassen et al., 2012; Urdan & Schoenfelder, 2006,). Perhaps, what these findings indicate is that the themes of relatedness explored in this study can be present, regardless of what teacher demographics exist. This could also potentially indicate that supporting relatedness does not occur due to teacher characteristics but could be a learned behavior or an underlying skill supported within the profession.

While the findings are limited to the sample and population in each respective phase, recommendations can be shared with readers that they might find to be useful within their role in the SBAE profession. SBAE teachers should intentionally select pedagogical strategies and programmatic choices that promotes relatedness among students. Some examples include actively building relationships with program stakeholders by inviting them to events or incorporating them as volunteers and mentors, connecting with student interest through one-on-one conversations, promoting teamwork through collaborative classroom strategies, and providing multiple opportunities for student mentorship. Outside of SBAE programs, teacher educators could integrate relatedness strategies such as conducting team projects, leading community engagement projects, and student-led program planning into their preservice coursework. Lastly, professional development could encourage in-service teachers to reflect on their current program practices and on how effective these practices are in building relatedness in their SBAE program.

Future research should expand upon the current study to explore other teacher demographics or program-based factors that could influence relatedness. Future qualitative research should be conducted and should specifically include observations as a method of data collection to capture relatedness in action. Further, research is needed to understand student perceptions of relatedness within SBAE programs. Lastly, quantitative research focused on correlating student and teacher perceptions would be valuable to expand our understanding of student motivation within the SBAE literature as this is a topic that is not explored frequently.

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