

Exploring Student Retention in Postsecondary Agriculture, Food, and Natural Resources Education Programs

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The current analysis foregrounded postsecondary agriculture, food, and natural resources (AFNR) education programs through an analysis of learning community, social community, general self-efficacy, and major commitment. Analysis identified statistically significant differences in major commitment perceived by year in school, with students earlier in their program reporting statistically higher major commitment than those later in their program. In congruence with the theoretical framework of student learning and persistence, the outcome variable general self-efficacy was modeled with year in school, learning community, and social community as predictors. In total, the model predicted 16% of the variance in general self-efficacy with social community as the only statistically significant predictor. Similarly, major commitment was modeled with year in school, learning community, and social community as predictors. In total, the model predicted 27% of the variance in major commitment with learning community and year in school being statistically significant predictors.

Keywords: major commitment, self-efficacy, social community, learning community, postsecondary education

Introduction

Maintaining a professional workforce supply requires educational pipelines train an adequate number of competent and motivated individuals. Educational pipelines include, among others, secondary career and technical education programs, post-secondary degree programs, and trade schools. Uniquely, some programs have the added responsibility of training individuals who, themselves, will directly support educational pipelines. Postsecondary agriculture, food, and natural resources (AFNR) education programs, which prepare individuals to enter secondary school classrooms to teach AFNR content under the umbrella of career and technical education, exemplify this added responsibility.

Research suggests an insufficient pipeline within AFNR education. Specifically, a recent analysis identified a nationwide shortage of qualified AFNR educators to fill the secondary school classroom demand (Smith, Lawver, & Foster, 2018). If the pipeline is to match demand, retention of those in the pipeline, including students in postsecondary AFNR education programs, is paramount. College experiences vary widely among students, but some program factors and characteristics can lead to better overall student experiences, resulting in greater persistence within degree programs (Terenzini & Reason, 2005; Tinto, 1997). Identifying program factors, experiences, and characteristics leading to greater persistence within AFNR education degree programs would empower

program directors and faculty to adjust programming efforts to better meet the needs of their students. In the absence of such knowledge, the pipeline of individuals prepared to enter the AFNR education profession will continue to falter. Therefore, the aim of the current study is to evaluate and model important constructs related to student retention and success within postsecondary AFNR education degree programs.

Theoretical Framework

The current research focused on the retention and success of students within postsecondary AFNR education programs. Given the focus, a theoretical framework was sought outlining variables salient to postsecondary student retention and success. In 2005, Terenzini and Reason proposed a “comprehensive model of influences on student learning and persistence” (p. 22). Since its inception, this model has been used to explore postsecondary student success, including research within AFNR education, with an emphasis on student retention (Smith & Garton, 2008; Smith, Garton, Killingsworth, Maxwell, & Ball, 2010). The model consists of precollege characteristics and experiences (i.e., socio-demographics, academic preparation, and personal and social experiences) that influence the college experience. The college experience, alongside precollege experiences, is posited to influence learning, development, change, and persistence, the outcomes of interest within the model. In this model, the college



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experience is broken into the domains of organizational context and peer environment. Organizational context includes university policies and practices, academic and co-curricular programs, and faculty culture. The peer environment includes classroom experiences, out-of-class experiences, and curricular experiences.

The model proposed by Terenzini and Reason (2005) was operationalized within the current analysis to explore the college experiences of students in AFNR education and their relationship to two outcomes, general self-efficacy and major commitment. The first outcome, general self-efficacy, included student perceptions of their ability to solve challenges and succeed in life. The second outcome, major commitment, detailed student commitment to persisting in the AFNR education major. Like the model proposed by Terenzini and Reason (2005), college experiences were broken into two categories, with organizational context being operationalized by learning community, a construct measuring how the major and courses met the learning needs of students, and peer environment, operationalized by social community, a construct measuring how students felt connected to peers and faculty within the major.

Literature Review

Building upon the need for research as well as the theoretical framework, the literature review explores research salient to perceptions of learning community, social community, general self-efficacy, and major commitment among postsecondary AFNR education students.

Maslow (1943) posited that before learning could occur, basic needs (e.g., acceptance, belonging, sense of community) must be met. Schools are important social environments where students share beliefs, values, and norms; therefore, educators have long recognized the importance of school community and sense of belonging. In postsecondary instructional settings, a sense of community is a key factor influencing student achievement, satisfaction, academic performance, attitudes, and persistence (Booker, 2016; Hofman, Hofman, & Guldmond, 2001; Rovai, 2002; Vavala, Namuth-Covert, Haines, Lee, King, & Speth, 2010). In contrast, students who lack a feeling of community are more likely to drop out and experience feelings of isolation and burnout (Liu, Magjuka, Bonk, & Lee, 2007; Morgan & Tam, 1999; Paige, Wall, Marren, Dubenion, & Rockwell, 2017; Tinto, 1975; Tinto, 1987). A sense of community is, therefore, an important factor in evaluating student persistence and success within postsecondary AFNR education degree programs.

Through a synthesis of literature, McMillan and Chavis (1986) defined sense of community as, "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). Education research

often explores the concept of community as a learning (i.e., classroom) community; however, in the broader body of literature, research has generally concluded that there are two concepts of community, territorial (i.e., learning) and relational (i.e., social), and that each are inextricable of each other (Reich, 2010; Tartaglia, 2006). Therefore, as the concept of community is explored in more depth, learning community and social community are considered as overlapping concepts.

Learning Community. Rovai (2002) suggested a learning community consists of four basic elements: spirit, trust, interaction, and learning. According to Rovai, spirit is the feeling of friendship, bonding, and togetherness between learners as they enjoy spending time together. Trust is the feeling that other community members can be relied on and learners are supportive of each other in the learning process. Interaction, the third component of learning community, is the exchanging of information and ideas which, according to Conrad (2002), leads to anticipation of future interactions, harmony, tolerance, and respect among individuals of the community. Learning is the fourth element of the learning community and is described as the process in which community members participate in decision-making, planning, and goal-setting (Solomon, Watson, Battistich, Schaps, & Delucchi, 1996). Community members engage and participate in the learning process when they feel their needs are being met through their participation (Libbey, 2004). A strong sense of learning community has many benefits, including increased retention and academic success as well as decreased negative student behaviors (Barber, Eccles, & Stone, 2001; Henry, Stanley, Edwards, Harkabus, & Chapin, 2009; Mechur Karp, 2016). Accordingly, postsecondary AFNR education students who feel a part of the classroom learning community will likely have greater persistence, perceive a feeling of connectedness, and be more academically successful than students who do not feel similar levels of learning community.

Social Community. Overlapping the concept of learning community is social community (Reich, 2010). The notion of social relationships being an important component of sense of community is rooted in Maslow's (1943) hierarchy of needs, in which social needs are labeled as essential for human development, preceded only by safety and physiological needs. Maslow described social needs as relationships with people for a place in the group; in other words, a sense of belonging within the social community. Within postsecondary education, research suggests perceptions of social community are linked to increased retention (Hoffman, Richmond, Morrow, & Salomone, 2002-2003). It is important, therefore, that AFNR education students experience a sense of community, both learning and social, in their degree program. While literature has suggested the need for more research examining the postsecondary student community (Cuba & Hummon,

1993; Stebleton, Soria, & Huesman, 2014), little to no research exists examining the sense of community among AFNR education students and the relationship to self-efficacy and major commitment. Understanding these relationships will help researchers and professionals strengthen the AFNR education pipeline and contribute to solving the AFNR teacher shortage.

Self-Efficacy and Major Commitment. Self-efficacy is the extent to which one believes he or she can complete a specific task, solve challenges, and succeed in life (Bandura, 1997). The perceived ability to solve challenges and be successful is an important aspect of college life, as self-efficacy is a strong predictor of overall academic performance and commitment to a major and career field (Chemers, Zurbriggen, Syed, Goza, & Bearman, 2011; Hanauer, Graham, & Hatfull, 2016; Pajares, 1996). Teacher education programs play an important role in the development of beginning teacher self-efficacy. Tschannen-Moran and Hoy (2001) suggested that supporting the development of teacher self-efficacy is essential for producing effective, committed, and enthusiastic teachers, and should begin during teacher education coursework; a recommendation supported in AFNR education (McKim & Velez, 2016). Consequently, AFNR education programs that seek to produce effective, committed, and enthusiastic teachers in the AFNR pipeline, should strive to support the development of student self-efficacy.

As AFNR education students graduate and continue in the pipeline to become AFNR teachers, self-efficacy and commitment changes. Research suggests that teacher self-efficacy tends to increase during teacher education enrolment but decrease after graduation through the first year of teaching (Hoy & Spero, 2005; McKim & Velez, 2016; Moseley, Reinke & Bookout, 2003). Sustained self-efficacy is essential for teachers, however, as teacher self-efficacy has been linked to higher overall performance in the classroom, a stronger ability to motivate and evaluate students, a greater degree of job satisfaction, and increased persistence in the profession (Hoy & Spero, 2005). Furthermore, research among school-based AFNR teachers has identified self-efficacy as a statistically significant predictor of career commitment (Blackburn & Robinson, 2008; McKim & Velez, 2015, 2016; Whittington, McConnell, & Knobloch, 2006). The trajectory of career commitment, on the other hand, differs as early and late career teachers are traditionally the most committed and mid-career teachers report the lowest perceptions of career commitment (Ingersoll, 2001; Kirby & Grissmer, 1993). To date, a dearth of research has examined the relationships between self-efficacy, sense of community, and major commitment among AFNR education students. Therefore, to address the AFNR teacher shortage (Smith et al., 2018) and maintain the educational pipeline that trains individuals for the professional workforce, examining these relationships among AFNR education students is crucial.

Purpose and Objectives

The purpose of the current study was to evaluate and model important constructs related to student retention and success within postsecondary AFNR education degree programs. The purpose was accomplished by evaluating social community, learning community, general self-efficacy, and major commitment. Understanding these variables is expected to illuminate areas for growth within postsecondary AFNR education programs, increasing student retention and success. The purpose was accomplished via three research objectives, listed below.

1. Compare social community, learning community, general self-efficacy, and major commitment perceived among AFNR education students by year in school.
2. Explore the relationship between year in school, social community, learning community, and general self-efficacy among AFNR education students.
3. Explore the relationship between year in school, social community, learning community, and major commitment among AFNR education students.

Methods

Survey methodology and correlational research design (Privitera, 2017) best addressed the established objectives for this exploratory research.

Population and Sample. The population for the current analysis included all students studying AFNR education in the United States at the post-secondary level during the 2017-2018 school year. A random sample of the population was not attempted due to the lack of an established frame. Instead, a convenience sample of seven faculty members, representing seven post-secondary institutions, were recruited during the innovative idea poster session at the 2017 American Association for Agricultural Education (AAAE) research conference. The seven institutions represented included three postsecondary institutions in the western AAAE region, three postsecondary institutions in the north-central AAAE region, and one postsecondary institution in the southern AAAE region. In total, responses were collected from 170 ($n = 170$) AFNR education students studying at the seven institutions. Importantly, due to the convenience sampling procedures, data are not to be generalized beyond responding AFNR education students.

Instrumentation. Data were collected via an online survey instrument, called the Teacher Education Program Retention Assessment (TEPRA). The TEPRA includes six sections: (a) a construct measuring social community, (b) a construct measuring learning community, (c) a

construct measuring general self-efficacy, (d) a construct measuring major commitment, (e) demographic questions, and (f) an open-ended question in which students shared strengths and areas of growth within their program. The constructs measuring social and learning community were adapted from the Classroom Community Scale (Rovai, 2002). Adaptations included wording changes to make questions relevant for students studying AFNR education (i.e., use of “in the agricultural education major”). Both social and learning community constructs included ten items, measured from 0 (*strongly disagree*) to 10 (*strongly agree*) with an additional anchor point of five (*neutral*). The Generalized Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) was used to measure general self-efficacy. Like social and learning community, general self-efficacy was measured using ten items, with response options ranging from 0 (*strongly disagree*) to 10 (*strongly agree*) with an anchor point of five (*neutral*). The major commitment scale was adapted from a professional commitment scale (Blau, 1985). Adaptations included wording changes to make the questions relevant for students studying AFNR education (i.e., use of “agricultural education major” instead of “career”). The major commitment construct included eight items that were also measured from 0 (*strongly disagree*) to 10 (*strongly agree*) with an anchor point of five (*neutral*). For each scale, the interpretive limits ranged from 0 to 3 being disagree, 4 to 6 being neutral, and 7 to 10 being agree. Seven questions comprised the demographic section, which are reported in the upcoming “description of responding AFNR education students.” To accomplish the research objectives, the only demographic question utilized was year in school to control for anticipated differences in general self-efficacy and major commitment by year in school. The open-ended question was designed to provide participating institutions with useful feedback on their program and was not used in the current analysis.

The TEPRA was pilot tested during the 2016-2017 school year among 32 students studying AFNR education at Michigan State University. Results of the pilot test indicated a reliable instrument, with social community (Cronbach’s Alpha = 0.93), learning community (Cronbach’s Alpha = 0.90), general self-efficacy (Cronbach’s Alpha = 0.90), and major commitment (Cronbach’s Alpha = 0.78) meeting the expectations for reliability (Fraenkel & Wallen, 2000; Nunnally & Bernstein, 1994). Face and content validity were evaluated by a panel of experts that included six faculty in AFNR education across two institutions.

Data Collection, Analysis, and Reporting. The seven programs recruited to participate were responsible for the distribution of surveys to respective students. In total, the seven institutions distributed surveys to 332 AFNR education students, of which 170 provided useable responses for a 51.20% response rate. Data were collected from January to April of 2018. Each institution utilized multiple points of email and in-person contact to elicit responses. Due to differences in the timing of data collection and methods across institutions, a check for non-response bias was not feasible and is a limitation of the current research (Lindner, Murphy, & Briers, 2001). Once collected, data were transferred from Qualtrics to the Statistical Package for the Social Sciences (SPSS). Research objective one was completed via an ANOVA in which year in school was the independent variable and social community, learning community, general self-efficacy, and major commitment were dependent variables. Within objective one, effect sizes were determined, with established criteria, as “small effect,” $\eta = .100$; “medium effect,” $\eta = .243$; and “large effect,” $\eta = .371$ (Cohen, 1988).

Objectives two and three were completed using multiple linear regression, with year in school, social community, and learning community as independent variables and general self-efficacy as the dependent

Table 1. Social Community, Learning Community, General Self-Efficacy, and Major Commitment by Year

Variable	Year in School				F-Value	p-value	Eta (η) effect size
	Freshmen	Sophomore	Junior	Senior			
Social Community	7.92	7.52	7.71	7.65	0.20	.940	.07
Learning Community	8.05	7.92	7.33	7.59	1.15	.336	.17
Self-Efficacy	7.81	8.12	7.59	7.56	1.78	.137	.21
Major Commitment	8.63 ^a	8.23 ^{ab}	7.53 ^{bc}	7.09 ^c	4.03	.004	.31

Note. Items scaled from 0 “Strongly Disagree” to 10 “Strongly Agree.” Interpretive limits ranged from 0 to 3 being disagree, 4 to 6 being neutral, and 7 to 10 being agree. Graduate students not included in comparison to maintain institutional anonymity. Post-hoc mean comparisons analyzed via Least Significant Difference (LSD) test with differences in superscripted letters representing significant differences between groups.

Table 2. Model of General Self-Efficacy

Predictors	Dependent Variable: General Self-Efficacy					
	Zero-order correlation (<i>r</i>)	<i>p</i> -value	<i>B</i>	<i>SEB</i>	β	<i>p</i> -value
Year in School	-.07	.397	-.05	.08	-.04	.571
Social Community	.39	<.001	.22	.06	.31	<.001
Learning Community	.30	<.001	.10	.06	.14	.104

Note. $R = .40$, $R^2 = .16$, F -value = 9.52, p -value = <.001. Items scaled from 0 "Strongly Disagree" to 10 "Strongly Agree."

Table 3. Model of Major Commitment

Predictors	Dependent Variable: Major Commitment					
	Zero-order correlation (<i>r</i>)	<i>p</i> -value	<i>B</i>	<i>SEB</i>	β	<i>p</i> -value
Year in School	-.28	<.001	-.37	.11	-.24	.001
Social Community	.30	<.001	.11	.08	.11	.161
Learning Community	.46	<.001	.41	.08	.38	<.001

Note. $R = .52$, $R^2 = .27$, F -value = 18.79, p -value = <.001. Items scaled from 0 "Strongly Disagree" to 10 "Strongly Agree."

variable for objective two and major commitment as the dependent variable for objective three. Prior to completion of objectives two and three, data were checked to evaluate the assumptions of multiple linear regression (e.g., linearity, multivariate normality, absence of multicollinearity, homoscedasticity); no violations of assumptions were found.

Description of Responding AFNR Education Students. All responding students were enrolled in a postsecondary AFNR education program during the 2017-2018 school year at seven institutions geographically distributed throughout the United States. Responding AFNR education students indicating year in school included 23 freshmen (14.6%), 41 sophomores (26.1%), 46 juniors (29.3%), 39 seniors (24.8%), and eight graduate students (5.1%). A total of 151 responding AFNR education students (96.2%) were pursuing teacher certification at the time of data collection. Additionally, 132 responding AFNR education students (83.5%) were alumni of secondary school-based agricultural education programs, 110 (69.6%) were engaged in an agricultural education-related club or organization at the postsecondary level, of which 29 (26.6%) were officers within the club and 102 (64.6%) were enrolled in a postsecondary club outside of agricultural education.

Findings

For research objective one, social community, learning community, general self-efficacy, and major commitment were compared by year in school (Table 1). Statistically insignificant differences were observed

within social community (F -value = 0.20; p -value = .940), learning community (F -value = 1.15; p -value = .336), and self-efficacy (F -value = 1.78; p -value = .137). However, analysis of differences in major commitment yielded statistically significant results (F -value = 4.03; p -value = .004), suggesting year in school had a medium effect (Cohen, 1988) on major commitment ($\eta = .31$). Within major commitment, the highest average response was 8.63, which was reported by freshmen students. The average response for freshmen was statistically similar to the average among sophomore students, who averaged 8.23. Freshmen students, however, reported statistically higher major commitment than juniors (i.e., 7.53) and seniors (i.e., 7.09). The major commitment identified among sophomores was statistically similar to freshmen and juniors; however, statistically higher than seniors. Likewise, junior students were statistically similar to sophomores and seniors, but reported statistically lower major commitment than freshman. The lowest major commitment was observed among senior students, who reported statistically lower major commitment than sophomores and freshmen.

In research objective two, the relationship between year in school, social community, learning community, and the first outcome variable of general self-efficacy was explored (Table 2). Results indicated the model, which included year in school, social community, and learning community as independent variables and general self-efficacy as the dependent variable, was statistically significant (F -value = 9.52; p -value < .001). In total, the three independent variables predicted 16% of the variance in general self-efficacy ($R = .40$; $R^2 = .16$). Within the model, one independent variable was a

significant predictor of general self-efficacy, social community ($\beta = .31$; p -value $< .001$), a positive predictor of general self-efficacy.

For research objective three, the relationship between year in school, social community, learning community, and major commitment was explored (Table 3). Results indicated the model, which included year in school, social community, and learning community as independent variables and major commitment as the dependent variable, was statistically significant (F -value = 18.79; p -value $< .001$). In total, the three independent variables predicted 27% of the variance in major commitment ($R = .52$; $R^2 = .27$). Within the model, two independent variables were significant predictors of major commitment, year in school ($\beta = -.24$; p -value = $.001$), a negative predictor of major commitment, and learning community ($\beta = .38$; p -value $< .001$), a positive predictor of major commitment.

Conclusions and Discussion

Evaluating the AFNR education pipeline is critically important to unpacking the shortage of AFNR educators (Smith et al., 2018). The current analysis foregrounded the postsecondary component of the AFNR education pipeline. Results illuminated important elements for discussion; however, it is important to review the limitations of the current research before discussing the findings. First, convenience sampling was used, limiting generalizability beyond study participants. Second, non-response bias was not evaluated due to variability within data collection methods between participating institutions. Third, perceptions-based data were collected and are vulnerable to error, such as social desirability bias. Acknowledging the limitations, the current analysis provides an exploratory look into important constructs within postsecondary AFNR education programs that provide a foundation for future research and practice.

Social community, learning community, general self-efficacy, and major commitment were compared by year in school in research one. The two constructs related to perceptions of community (i.e., learning community and social community) shared an important characteristic; although not statistically significant, freshmen perceived elements of community higher than their peers. Thus, it appears participating AFNR education programs are attending to the social and learning community needs of students early in their programs, which is critically important to establishing commitment and a culture of success early within an AFNR education program (Hofman et al., 2001; Rovai, 2002; Vavala et al., 2010). The downside, as students in participating programs progress through their degree, perceptions of community weaken. Understanding the relationship between year in school and perceptions of community presents an opportunity for future work, which is explored within the recommendations section.

Related to findings within learning and social community, major commitment was highest among freshmen students and declined among sophomore, junior, and senior students. As with career commitment (Ingersoll, 2001; Kirby & Grissmer, 1993), novices tend to report the highest level of commitment as they have just made the decision to commit (i.e., for postsecondary freshmen, the decision to enroll in AFNR education). However, unlike career commitment, major commitment does not appear to increase toward the end of the postsecondary experience. This is particularly alarming within postsecondary programs as seniors are nearing career decisions. Importantly, however, a few factors may have influenced the lower major commitment perceived among seniors. First, the timing of data collection was, for most, early in their student teaching when students typically struggle with new obligations, challenges, and pressures which may have resulted in lower major commitment. Second, junior and senior year coursework typically differs in focus (e.g., technical AFNR [freshmen and sophomore] vs. pedagogy [junior and senior]), which has the potential to influence major commitment. In total, findings provide opportunities for research to inform practice to strengthen the commitment perceived among AFNR education students as they navigate their degree program.

Objective two modeled general self-efficacy using year in school, learning community, and social community with social community being the only statistically significant predictor of general self-efficacy after accounting for differences in year in school and learning community. The positive relationship between social community and general self-efficacy supports the relationship between peer environment and student outcomes posited within the model of postsecondary student retention and success proposed by Terenzini and Reason (2005). In addition, the relationship between social dynamics and self-efficacy is supported by the theoretical foundations of self-efficacy, which suggest social persuasion (i.e., social reinforcement from respected others) as a building block of self-efficacy (Bandura, 1997; McKim & Velez, 2016). In combination, these findings reinforce the importance of building a positive social culture within AFNR education programs, which is explored further within the recommendations.

The final objective, research objective three, modeled major commitment using year in school, learning community, and social community. Results indicate learning community was a significant contributor to major commitment among AFNR education students, after accounting for differences in year in school and social community. Findings support the theoretical framework, specifically, the relationship between organizational context and postsecondary student retention (Terenzini & Reason, 2005). Further, findings illuminate the importance of establishing a positive learning culture throughout the postsecondary experience as a means of strengthening the AFNR education pipeline.

Recommendations

The conclusions and discussion illuminated a number of recommendations emerging from the current research. To organize, recommendations are separated into recommendations for research, recommendations for building social community, and recommendations for building learning community.

Recommendations for Research. One purpose of an exploratory study is to identify areas for future research informed by empirical findings. Review of research objective one identifies two interrelated areas of future inquiry to better understand the postsecondary element of the AFNR education pipeline. Within research objective one, a trend within perceptions of community and major commitment emerged suggesting freshmen students perceive stronger levels than more experienced students. While failing to meet the threshold of statistical significance, differences within perceived social and learning community present an opportunity to better understand the evolution of how community needs are met by a program as students move through their degree as well as the relationship between sequencing of required courses (e.g., technical agriculture, general education, AFNR education-focused, early-field experiences) across years in school and perceptions of community. Moving forward, the affordance of qualitative research make it an ideal research methodology for work in this area.

Major commitment, on the other hand, was statistically different among responding AFNR education students, indicating younger students within participating institutions perceived stronger major commitment than junior and senior students. As discussed, early enthusiasm for a degree is to be expected; however, the lowest perceived major commitment among senior students was not expected and is worthy of future analysis. Specifically, qualitative research should explore the potential negative impact of student teaching on the major commitment of senior students. If student teaching is identified as the reason for reduced major commitment, intentional support for major commitment during student teaching should be implemented. Alternatively, if student teaching is not identified as a detrimental factor to major commitment, professional identity and anxiety associated with entering the AFNR teaching profession should be explored.

In research objectives two and three, the importance of social community (i.e., to general self-efficacy) and learning community (i.e., to major commitment) was identified. First, follow-up research among a randomly selected sample of all postsecondary students in AFNR education is recommended to compare the findings of this convenience sample to the population of interest. Additionally, a larger sample would allow inclusion of more demographic variables within the analysis. Second,

research among a larger sample of institutions is strongly encouraged as it would allow analysis of the relationships between program-level characteristics (e.g., required courses, faculty demographics, extra-curricular opportunities), social community, and learning community. Acquisition of such knowledge will inform programmatic structures and approaches which relate to increased perceived community, and subsequently general self-efficacy and major commitment, among AFNR education students.

Building Social Community. As the lone identified predictor of general self-efficacy found within the current analysis, recommendations for building social community are explored. Terenzini and Reason suggest building social community entails shaping “sense of place” as “students tend to move toward the dominant values and belief structures held by other students” (2005, p. 11). Therefore, social community is a direct product of interactions between and among students. As faculty and program leaders, increasing social community should be an intentional effort to connect more experienced students to those early in the program. Based on the data, however, participating programs have excelled at this component. What is missing, potentially, is addressing the social community needs of junior and senior students. As a step forward, connecting early career teachers as mentors of junior and senior students studying AFNR education may help to illuminate the dominant values and belief structures of professionals, whom junior and senior students are, or will soon be, seeking to emulate. As with all recommendations, research to evaluate the effectiveness of the intervention is highly encouraged.

Building Learning Community. Learning community, on the other hand, was a statistically significant predictor of major commitment; therefore, literature-based recommendations for building learning community are proposed. Terenzini and Reason (2005) acknowledge learning community is a product of (a) internal structures, policies, and practices; (b) curricular and co-curricular programs, policies, and practices; and (c) faculty culture. In total, the three elements that comprise learning community should be tailored to enhance the four characteristics of an effective learning community, i.e., spirit, trust, interaction, and learning (Rovai, 2002). Examples of ways to increase learning community within an AFNR education program may include offering programs and opportunities for AFNR education students to enjoy spending time together as a community of learners, offer trust-building experiences among students and faculty within the program, provide sustained opportunities for interaction between smaller groups of students and faculty within the AFNR education program, and provide ample opportunities for students in AFNR education to collaboratively make decisions, plan, and set goals (Conrad, 2002; Solomon et al., 1996; Rovai, 2002).

The teacher shortage within AFNR education can only be addressed through intentional effort and acquisition of pragmatic knowledge. The current study initiated an understanding of student retention within postsecondary AFNR Education programs, specifically, the importance of building a strong social community to student self-efficacy and cultivating a strong learning community to major commitment. Findings provide a catalyst for intentional effort to support the social and learning communities of postsecondary AFNR Education programs. Further, the analysis suggests the model of student learning and persistence described by Terenzini and Reason (2005) is an applicable foundation for exploring learning community, social community, general self-efficacy, and major commitment within postsecondary AFNR Education programs. Continued effort, within both research and practice, is needed to reinforce and improve the complete AFNR education pipeline for the betterment of all.

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