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Influence of Social Support on Teacher Self-Efficacy in Novice Agricultural Education Teachers

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Abstract

Teacher self-efficacy impacts student achievement, job satisfaction, and teacher retention. Although the benefits of social support have been extensively studied in medicine and psychology, limited research has been completed in education to evaluate the ways in which social support contribute toward teacher self-efficacy. The purpose of this descriptive-relational study was to determine the influence of sources and types of support on teacher self-efficacy in novice agricultural education teachers. The target population was novice teachers of agriculture from Illinois (n = 192) and Indiana (n = 104). Teachers' perceptions of support from three non-school sources and six school sources of support within three social support constructs were used to predict the contribution of social support on teacher self-efficacy. Novice agricultural education teachers' perceptions of support from school sources – predominantly students and community – explained 27.1% of the variance in teacher self-efficacy. The results from this study imply the support (i.e., verbal or social persuasion) novice agricultural education teachers perceive from students and community are the most significant predictors of teacher self-efficacy. These findings advocate the need for novice teachers of agriculture to develop quality relationships with students and community members to increase teacher self-efficacy, thus potentially improving teacher retention.

Keywords: teacher self-efficacy; social support; teacher retention; novice teachers; students; community

Introduction/Literature Review

Novice teachers, those with less than five years in the profession, experience a multitude of psychological and physiological challenges in their chosen career as an educator. Literature confirms that novice teachers display symptoms associated with culture shock (Caspersen & Raaen, 2013; Langley, Martin, & Kitchel, 2014), a major life event or transition (Caspersen & Raaen, 2013; Heaney & Israel, 2008; Zimet, Dahlem, Zimet, & Farley, 1988), and lack of social connectedness as they familiarize themselves in a new community (Caspersen & Raaen, 2013; Langley et al., 2014). Moreover, lofty expectations from parents, students, and members of the community, combined with self-inflicted social comparisons with other teachers and FFA advisors, influence job satisfaction and career longevity for novice teachers of agriculture (Kitchel, Smith, Henry, Robinson, Lawver, Park, & Schell, 2012). These stressors, in addition to perceived lack of control over external work and personal circumstances, along with feelings of isolation in the school environment (Buchanan, Prescott, Schuck, Aubusson, & Burke, 2013; Burke, Aubusson,

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Schuck, Buchanan, & Prescott, 2015; Thoits, 1995; Wethington & Kessler, 1986), increase the likelihood of psychological disorders (e.g., emotional strain, anxiety, and depression) and use of negative behavioral coping responses (e.g., smoking, drug or alcohol use); subsequently, these health-debilitating behaviors increase the risk of physiological illnesses (e.g., chronic stress and sleep disorders) (Cobb, 1976; Cohen, 2004). As a result, the challenges that novice teachers face, in combination with the psychological and physiological symptoms they experience, may entice them to pursue a career outside of the classroom.

Teacher attrition – teachers leaving the profession of teaching – has increased at an alarming rate in the United States over the last two decades. Ingersoll (2012) estimated that between 40% and 50% of teachers leave within the first five years of entry into teaching. For novice teachers, this is an increase of approximately one-third since 1990. Teacher attrition affects school districts by inflicting financial costs and negative impacts on student achievement (Barnes, Crowe, & Schaefer, 2007). Furthermore, the decline in teachers' commitment to the profession has contributed toward shortages of qualified teachers in many disciplines, including agricultural education (Kantrovich, 2010).

As reported in the 2016 Executive Summary from the National Agricultural Education Supply and Demand Study, more than half of the states reporting lost secondary agriculture programs or agricultural educator teaching positions since 2011. Although retirement was the most frequently reported reason for leaving (28.0%), a combined 44.5% of respondents who left the profession of teaching (a) pursued employment in production agriculture, business or industry, or non-formal education; (b) transitioned to a school administrator position or were employed in another educational area; or (c) chose to stay at home in a parent or caregiver role (Smith, Lawver, & Foster, 2017). Due to the scarce supply of agricultural education teachers, many open positions were filled by alternatively licensed teachers. In the Midwest alone, nearly one out of every eight new agriculture teachers hired in 2015 were non-licensed educators (Foster, Smith, & Thompson, 2016).

Researchers in education, business, and psychology have studied teacher retention, employee turnover, and career commitment for decades. *Career commitment* is defined as an individual's attitude, motivation, and psychological attachment towards a profession or vocation (Blau, 1985, 1988; Goulet & Singh, 2002; Knobloch & Whittington, 2003; The Project on the Next Generation of Teachers, 2006). In addition to salary, benefits, and opportunities for advancement – all of which may influence career commitment – researchers also determined employees' feelings of support, particularly from supervisors and colleagues, positively influenced career commitment and job satisfaction (Blau, 1988; Jensen, Patel, & Messersmith, 2013; Stockard & Lehman, 2004).

As defined by Cobb (1976), *support* is the belief that one is cared for and loved, wherein the feelings of support contribute to personal appraisals of esteem and value. Furthermore, individuals who possess the psychological awareness of support have an enhanced sense of worth and belonging. The self-assessment of support is often expressed within a larger social network of people who have a mutual obligation toward the success of an organization. In the context of education, teachers who had supportive administrators and colleagues, who also felt students and parents respected them, were more likely to stay in their current school and continue in the profession of teaching (University of Chicago Urban Education Institute, 2009).

Whereas perceived support is a predominant reason people stay committed to a career, stressors such as workload, job demands, and lack of autonomy contribute toward employees' decision to leave a career. These variables, in addition to collective efficacy (Caspersen & Raaen, 2013; Klassen & Chiu, 2010; Knobloch & Whittington, 2002), supervisor leadership (Massenberg,

Spurk, & Kauffeld, 2015; Tickle, Chang, & Kim, 2010), and working conditions (Chou, 2015; Gersten, Gillman, Mornant, & Billingsley, 1995; Hancock & Scherff, 2010) impact self-efficacy and its subsequent relationship to career commitment.

Self-efficacy is a belief in one's ability to be successful in completing a given task or job (Bandura, 1977, 1986, 1997). The perception of self-efficacy is a psychological state of mind which encompasses characteristics from the locus of control and social cognitive theories. An individual's perception of control depends on their interpretation of themselves as either a contributor to their life circumstances, or merely an outcome of external controls (Bandura, 2009). Moreover, perceptions of control influence self-efficacy (Rotter, 1966), self-efficacy is manipulated by verbal persuasion (i.e., support), and perceptions of self-efficacy contribute to career commitment. Consequently, employees who feel supported in the workplace possess greater levels of self-efficacy and increased commitment to their job. Conversely, employees in high stress, low support environments are likely to have low levels of self-efficacy and are more apt to leave their place of employment (Chan, 2002).

Specific to education, low teacher self-efficacy is a primary reason teachers choose to leave education (Brown, Lee, & Collins, 2014; Knobloch & Whittington, 2002; McKim & Velez, 2015; Swan, Wolf, & Cano, 2011; Tschannen-Moran & Woolfolk Hoy, 2007). Teacher self-efficacy is defined by Tschannen-Moran & Woolfolk Hoy (2001) as the belief one is capable of bringing about desired outcomes of student engagement and learning, regardless of how difficult or unmotivated the students may be. Moreover, teacher self-efficacy has been linked to career commitment and retention, teacher quality, student achievement, and job satisfaction (Hancock & Scherff, 2010; Kelly & Northrop, 2015; Sorenson & McKim, 2014; Struyven & Vanthournout, 2014). Thus, teachers who possess high levels of self-efficacy are more likely to remain in the profession.

Novice teachers are most likely to experience the negative consequences of low self-efficacy. Novice teachers self-report their highest levels of teacher self-efficacy at the end of the student teaching, but their lowest teacher self-efficacy at the conclusion of their first year in the profession (Wenner, 2001; Woolfolk Hoy, 2000). Researchers postulate this may be either a result of the gap between novice teachers' standards which they set for themselves and their actual perceived performance (i.e., reality shock) (Corbell, Reiman, & Nietfeld, 2008; Kelly & Northrup, 2015), or the removal of accessible support they received from their cooperating teacher and university supervisor during the student teaching experience (Knobloch & Whittington, 2002; Roberts, Harlin, & Ricketts, 2006; Stripling, Ricketts, Roberts, & Harlin, 2008). Novice teachers must perceive the availability of support to meet their psychological needs and develop self-efficacy in their abilities as an educator (Caspersen & Raaen, 2013; Chou, 2015; Heaney & Israel, 2008). As stated by Carroll (2005) in his report for the National Commission on Teaching and America's Future, "[Teachers] leave for many reasons, but lack of support is at the top of the list" (Carroll, 2005, p. 199).

Teachers, like many other professionals, need to feel supported in their efforts. Regardless of the profession, high levels of perceived support result in more efficacious feelings and an increased likelihood the individual will remain committed to his or her career. Unfortunately, education has not adopted the philosophies of the corporate world in respect to onboarding practices with new or early career employees and allocation of resources toward human capital development. "No other profession takes newly certified graduates, places them in the same situation as seasoned veterans, and gives them no organized support" (Maistre & Pare, 2010, p. 560). Even though novice teachers begin their careers with anticipation and enthusiasm, how can they be expected to thrive with little to no support? With the multitude of stressors faced in the critical early years of teaching, novice teachers must feel supported to succeed and remain in the profession.

Researchers who study organizational behavior determined employees' perceptions of support from supervisors and colleagues predict self-efficacy and career commitment (Chou, 2015; Massenberg et al., 2015). Similarly in the world of education, support from administrative leadership (Buchanan et al., 2013; Tickle et al., 2010) and other teachers in the school (Darling-Hammond, 2005; Devos, Dupriez, & Paguay, 2012; Ingersoll, 2012; Kelly & Northrup, 2015) are predictors of teacher self-efficacy and career commitment. In addition to these shared sources of support, schools are unique to other workplace environments in that perceptions of support are also derived from students, parents of students (Beard, Hoy, & Hoy, 2010; Fantilli & McDougall, 2009; Struyven & Vanthournout, 2014), and the local community (Tschannen-Moran & Woolfolk Hoy, 2002). Moreover, personal sources of support also contribute toward self-efficacy beliefs and one's motivation to stay committed to a career (Bataineh, 2009; Cornu, 2013; Dignam & West, 1988; Wethington & Kessler, 1986). The network of personal sources of support for teachers includes family (e.g., siblings, parents, children), friends outside of work, and a spouse or partner.

In an effort to build a support network to enhance career commitment and improve teacher self-efficacy, it is essential to identify the *types* of support that are most beneficial for novice teachers. Social support is categorized by House (1981) into four constructs – emotional, appraisal, informational, and instrumental. *Emotional support* includes feelings of concern, love, trust, and empathy. This form of support is demonstrated through the actions of listening and caring for others. *Appraisal support* involves the process of receiving affirmation and constructive feedback; subsequent psychological outcomes from appraisal support include social comparison and reflective evaluation. *Informational support* is acquired when a person receives advice or suggestions; often, this directive behavior is experienced when problems arise which need to be solved. *Instrumental support* is obtained in the form of tangible items. Examples of tangible items include money, gifts, and donations of time or resources (Heaney & Israel, 2008; House & Wells, 1978).

Conceptual Framework

The conceptual framework that served as the foundation for this study was derived from literature on social support (Cohen & Wills, 1985; House, 1981) and teacher self-efficacy (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001). As shown in Figure 1, social support can either be perceived as available or received in the forms of *emotional/appraisal* support, *informational* support, or *instrumental* support (Cohen & Hoberman, 1983; Heaney & Israel, 2008; House, 1981; House & Wells, 1978). Support may come from *school* (i.e., work) sources – administrators, teachers, students, parents, or community (House & Wells, 1978; Knobloch & Whittington, 2002; Tschannen-Moran & Woolfolk Hoy, 2007) – or *non-school* (i.e., personal) sources – spouse or partner, family, or friends outside of work (Bataineh, 2009; Cornu, 2013; Fantilli & McDougall, 2009). Along with other variables, the support a novice teacher may receive or perceive as available impacts his or her perceived level of teacher self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001); teacher self-efficacy is a predictor of one's psychological commitment to a career (Burke et al., 2015; DeAngelis, Wall, & Che, 2013; Devos et al., 2012; Maistre & Pare, 2010).

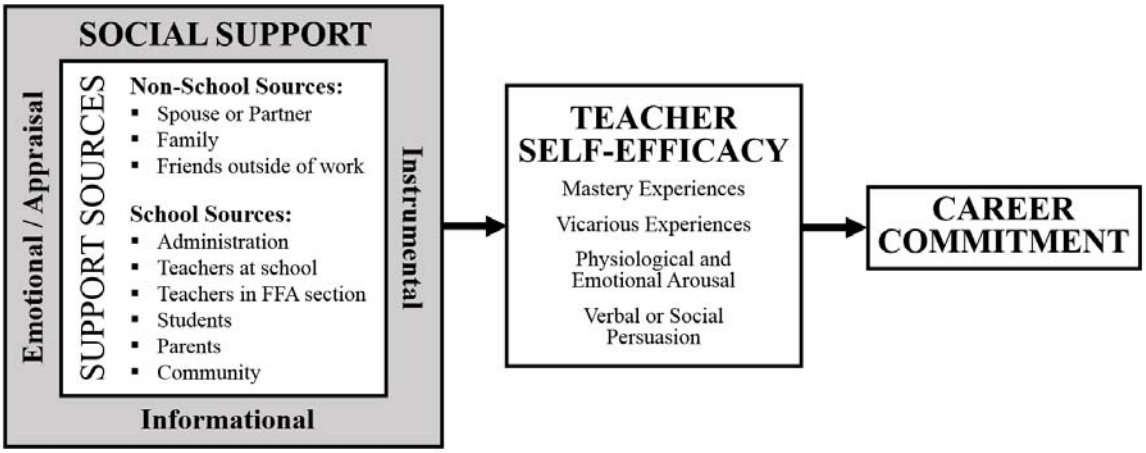

Figure 1. Conceptual framework of constructs and variables associated with social support, teacher self-efficacy, and psychological commitment to a career

Novice teachers need a supportive environment to thrive in challenging conditions and combat stressors of personal and professional life. Researchers have determined clear connections between the perceptions of available social support and self-efficacy, and between self-efficacy and career commitment (Bandura, 2009; Chou, 2015; Collie, Schapka, & Perry, 2012; Darling-Hammond, 2005; DeAngelis et al., 2013; Hancock & Scherff, 2010; Ingersoll, 2012; Jones, Youngs, & Frank, 2013; Knobloch & Whittington, 2003; Struyven & Vanthournout, 2014). In consideration of the high attrition risks for novice teachers and the critical shortage of teachers of agriculture, the need exists to unpack the specific sources and types of support which characterize novice teachers' support network. An enhanced understanding of novice teachers' perceptions of support, in addition to its collective contribution toward teacher self-efficacy, may help sustain and motivate teachers through the challenging early years of their careers and reduce the likelihood of attrition in novice agricultural education teachers (Burke et al., 2015; DeAngelis et al., 2013; Swan et al., 2011).

Purpose and Objectives

This study addresses the American Association for Agricultural Education's (AAAE) National Research Agenda Research Priority 3 as, "Sufficient Scientific and Professional Workforce that Addresses the Challenges of the 21st Century" (Roberts, Harder, & Brashears, 2016). Specifically, this priority poses the research question, "What methods, models, and practices are effective in recruiting agricultural leadership, education, and communication practitioners and supporting their success at all stages of their careers?" (Stripling & Ricketts, 2016, p. 31).

The purpose of this descriptive-relational study was to determine the degree of social support novice agricultural education teachers perceive from various sources and types of social support, along with the influence of perceived support on novice teacher self-efficacy. The following research objectives guided the study.

1. Determine the degree of support novice agricultural education teachers perceive as available from *non-school sources* (e.g., spouse or partner, family, friends) and *school sources* (e.g., administrators, teachers at school, teachers in FFA section or district, students, parents, community) of support.

2. Determine the *types* of social support (e.g., emotional/appraisal, informational, instrumental) which novice agricultural education teachers perceive as available.
3. Describe the perceived level of *teacher self-efficacy* in novice agricultural education teachers.
4. Describe the contribution of perceived support from *non-school sources* and *school sources* towards *teacher self-efficacy* in novice agricultural education teachers.
5. Describe the contribution of the *types* of social support toward *teacher self-efficacy* in novice agricultural education teachers.

Methods/Procedures

This quantitative inquiry employed descriptive and inferential methods to address the contributions of perceived support on teacher self-efficacy in novice agricultural education teachers. The target population was novice teachers of agriculture from Illinois (n = 192) and Indiana (n = 104) with five or fewer years of teaching experience during the 2016-2017 academic year. The population included teachers who (a) completed a university teacher preparation educator licensure program, or (b) who were teaching with an Illinois Educator License with Stipulations (ELS) endorsement or Indiana Proficiency Practitioner license (i.e., provisional or alternative certification). The names and email addresses for novice agricultural education teachers in Illinois were obtained from the Facilitating Coordination for Agricultural Education (FCAE) Program Advisors and the Illinois Association of Vocational Agriculture Teachers (IAVAT) public online directory (IAVAT Directory, 2016). The names for novice agricultural education teachers in Indiana were obtained from faculty at Purdue University. The email addresses for teachers were obtained through the Indiana Association of Agricultural Educators (IAAE) public online directory (IAAE Directory, 2016).

Researchers collected 119 responses from agricultural education teachers with five or fewer years of teaching experience. Teachers' perceptions of support from three non-school sources (e.g., spouse or partner, family, friends) and six school sources (e.g., administrators, teachers at school, teachers in FFA section or district, students, parents, community) of support within three support constructs (e.g., emotional/appraisal, informational, instrumental) were used to predict the contribution of social support on teacher self-efficacy. Following IRB guidelines, consent approval was obtained prior to data collection. The online survey instrument included three sections, in addition to a demographic section that collected relevant personal and work-related characteristics. The three primary sections of the online instrument were the *Social Support Scale* (developed by the researchers); the *Teachers' Sense of Efficacy Scale (short form)* (Tschannen-Moran & Woolfolk Hoy, 2001); and *Career Commitment* (Hancock and Scherff, 2010).

Social Support Scale

Ten survey items were developed by the researchers to determine perceived support from *non-school* sources and *school* sources. The initial draft of the survey instrument included three non-school sources of support and nine school sources of support that encompassed the work and personal life responsibilities experienced by a teacher (Cohen & Wills, 1985; Smith, Corkery, Buckley, & Calvert, 2013; Tschannen-Moran & Woolfolk Hoy, 2002; Tschannen-Moran & Woolfolk Hoy, 2007). Moreover, an agriculture teacher's responsibilities associated with his or her role as an FFA advisor (Terry & Briers, 2010) warrants the assessment of perceived support from a greater variety of non-school (i.e., personal) and school sources of support. For the purpose of this study, the three non-school sources of support were: spouse or partner, family, and friends outside of work. The nine school sources included in the pilot test were: building administrator, district administrator, school board, teachers at the school, teachers in the FFA section or district, students in agriculture classes, students in FFA, parents of students, and community.

Survey items were primarily developed from research findings of Tschannen-Moran and Woolfolk Hoy (2002, 2007) and House (1981), but also influenced by the Medical Outcomes Study: Social Support Survey (MOS-SSS) (Sherbourne & Stewart, 1991), the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988), the Interpersonal Support Evaluation List (ISEL) (Cohen & Hoberman, 1983), and The Social Provisions Scale (SPS) (Russell & Cutruna, 1984). Modifications were made to the survey items to assess perceptions of support within a school climate and within the context of agricultural education. A 9-point response scale was used to determine the degree of perceived support received from various sources and in differing forms (i.e., types) of social support. Anchors for the degree of perceived support were 1 = *never*, 3 = *rarely*, 5 = *sometimes*, 7 = *often*, and 9 = *always*. The use of a 9-point response scale with anchors on alternating points is consistent with Tschannen-Moran and Woolfolk Hoy's (2002, 2007) research on teachers' perceived quality of support (i.e., verbal persuasion) received from administration, colleagues, parents, and community.

A panel of experts, consisting of four faculty from two universities who specialize in agricultural education and agricultural leadership education disciplines, reviewed the instrument for face and content validity. Additionally, the instrument was pilot-tested with novice agriculture education teachers from two states not utilized in this study. The representative sample consisted of teachers with 5 of fewer years of teaching experience. This purposive sample was chosen for the pilot test in an effort to represent a sample of novice teachers from states similar to those teachers from states in the actual research frame. Three emails were sent to selected novice teachers of agriculture during a two-week time span; out of 48 teachers invited to participate, 27 teachers completed the questionnaire, resulting in a pilot test response rate of 56.3%. Additionally, 14 partially completed questionnaires indicated a potential for respondent fatigue.

The pilot test survey instrument which assessed perceived support corresponded to the four social support constructs, identified by House (1981) as emotional support, appraisal support, informational support, and instrumental support. In the pilot test, 3-4 survey items were asked per support category to assess each construct. To reduce the potential for respondent fatigue and consistent with previous research findings, the *emotional* and *appraisal* support constructs were collapsed into one construct identified as *emotional/appraisal* support (Cohen & Hoberman, 1983; House, 1981; House & Wells, 1978). An example question in the emotional/appraisal support construct was, "How often do the following people *show empathy* (i.e., shared understanding) *for your needs*?" An example question in the informational support construct was, "How often do the following people *provide helpful suggestions* related to your profession as an agricultural education teacher?" An example question in the instrumental support construct was, "How often can these people be relied upon to *provide resources* (e.g., money, time, equipment) which help you succeed as an agricultural education teacher?" Participants were not informed of the specific social support construct which corresponded to each survey item. Moreover, survey items for the social support constructs were randomized to reduce respondents' tendency to perceive questions measuring the same construct as redundant.

From the pilot test results, Cronbach's alpha estimates of internal consistency were calculated for reliability of the (a) ten individual items used to assess the social support constructs; (b) three social support constructs of emotional/appraisal, informational, and instrumental support; and (c) the twelve potential sources of non-school and school support. Reliability estimates from the pilot test reflected "excellent" internal consistency (Cronbach, 1951; Nunnally, 1978) for the *emotional/appraisal* construct ($\alpha = .96$), *informational* construct ($\alpha = .92$), and the *instrumental* construct ($\alpha = .95$). In addition to the social support constructs, Cronbach's alpha reliability estimates were calculated for the three non-school and nine school sources of support. Results from the calculations, in addition to literature findings and a concern of respondent fatigue, prompted

the decision to modify the survey instrument. Cronbach's Alpha reliability estimates for *Building Administrator* (α = .96), *District Administrator* (α = .95), and *School Board* (α = .92) resulted in values exceeding .90. Values higher than .90 imply redundancy or measurement of the same construct (Cronbach, 1951; Nunnally, 1978). Thus, the decision was made to combine the three measures for *Building Administrator*, *District Administrator*, and *School Board* into one item for *Administrator(s)* (α = .95). Furthermore, the two items measuring perceived support from students resulted in values of α = .90 for *Students in your agriculture classes* and α = .89 for *Students in FFA*. However, when reliability estimates were calculated for combined *Student* support, the results produced a more desirable coefficient of α = .94. Thus, the researchers chose to combine the two student measures into one item for *Student* support.

Teachers' Sense of Efficacy Scale

The *Teachers' Sense of Efficacy Scale (short form)*, developed by Tschannen-Moran and Woolfolk Hoy (2001), was used to measure teacher self-efficacy. This survey instrument has been widely described as the superior measurement to assess teacher self-efficacy, regardless of personal or school characteristics (Duffin, French, & Patrick, 2012; Hoy & Spero, 2005; Klassen & Chiu, 2010). The *Teachers' Sense of Efficacy Scale (short form)* includes twelve items which ask participants to evaluate their ability to influence or control factors related to instructional practices, classroom management, and student engagement. Anchors for the 9-point Likert-type scale assessing teacher self-efficacy were 1 = *nothing*, 3 = *very little*, 5 = *some influence*, 7 = *quite a bit*, and 9 = *a great deal*. This commercially available survey instrument has been assessed for validity and reliability. The published reliabilities for the three constructs (e.g., instructional practices, student engagement, and classroom management) of the *Teachers' Sense of Efficacy Scale (short form)* range from .81 to .90.

Career Commitment

A one-item measure was used to assess career commitment. The survey item was modified from a question used by Hancock and Scherff (2010) wherein researchers used a dependent variable to measure attrition risk. A single-item measure was deemed sufficient to measure this variable due to the narrow, unambiguous nature of this psychological construct (Wanous, Reichers, & Hudy, 1997). The prompt used in the survey instrument asked participants to express their level of agreement with the following statement, "Thinking about your *future career plans*, to what extent do you agree or disagree with the following statement: *I plan to continue teaching agriculture in a high school classroom for the next 5 years.*" The single-item question asked participants to choose from one of seven responses. The seven possible options were 1 = *strongly disagree*, 2 = *disagree*, 3 = *somewhat disagree*, 4 = *neither agree nor disagree*, 5 = *somewhat agree,* 6 = *agree*, and 7 = *strongly agree*. A *prefer not to respond* option and text box for comments were also provided.

Data Collection

The questionnaire was administered online via Qualtrics data collection service (www.qualtrics.com) in November 2016. Researchers chose to distribute the questionnaire in November to attempt to capture novice teachers' perceptions of support during the *Disillusionment* phase of teaching (Moir, 1999). Following recommended guidelines from Dillman, Smyth, and Christian (2009) and in an effort to increase response rates, participants received a pre-notification email to inform them of the purpose of the study, an invitation email that included a link to the questionnaire, two follow-up reminders, and a final notification email. Thank you emails were sent

to all participants who completed the questionnaire. Of the 296 invited teachers, 119 usable responses were attained, resulting in a 40.20% response rate.

To address non-response error, the researchers used two methods recommended by Linder, Murphy, and Briers (2001). No statistically significant differences were found between early and late respondents for 12 of the 14 items assessed in the survey instrument using the Comparison of Early to Late Respondents method. To address concerns for the two remaining items (*future career plans* and *non-school sources of support*), the researcher used the "Days to Respond" as a Regression Variable method. After analyzing the results from the regression, the researcher determined the *non-school sources of support* variable to be a valid measurement, generalizable to the target population. The *future career plans* variable was not directly related to the research objectives of this study; therefore, the researcher chose to proceed with data analysis, but exercised some degree of caution when evaluating implications of the *future career plans* variable.

Data Analysis

Data were analyzed using means, standard deviations, and range for objectives 1-2. Means, standard deviations, and reliabilities were calculated for objective 3. For objectives 4-5, hierarchical forced entry multiple linear regression was used to predict the contribution of perceived support from various *sources* and *types* of support on novice teacher self-efficacy. Researchers reported unstandardized beta, standard error beta, standardized beta coefficient, significance level, adjusted R^2, F value, change in F value, degrees of freedom, and change in R^2.

Findings/Results

The majority of teachers (n = 119) were female (68.9%) with three or fewer years of teaching experience (79.0%) who completed a traditional teacher licensure program (69.7%). Most of the teachers were from Illinois (74.8%), while the remaining 25.2% were from Indiana. The respondents represented the age and experience level of the population of agricultural education teachers in the two states. The majority of respondents (63.9%) selected *strongly agree* or *agree* when prompted to respond to a statement regarding future plans to teach (i.e., career commitment) in the next five years.

The first research objective was to determine the degree of support novice teachers of agriculture perceived as available from three *non-school sources* and six *school sources* of support. As shown in Table 1, novice teachers perceived the greatest degree of non-school support from *family* (M = 6.69, SD = 1.40), while the greatest degree of school support was from *teachers in their FFA section or district* (M = 5.94, SD = 1.66). Conversely, the least degree of support within the two constructs of non-school and school support was perceived from *spouse or partner* (M = 4.97, SD = 1.58) and *parents of students* (M = 4.86, SD = 1.54), respectively. It should be noted that teachers who indicated they were not in a relationship with a spouse or partner were coded as 0 = *N/A*. When evaluating results for the overall mean of the three non-school sources of support and the six school sources of support, teachers perceived more support from non-school sources (M = 5.83, SD = 1.55) as compared to school sources (M = 5.39, SD = 1.24) of support. However, both fell within the parameters of being supported *sometimes*.

Table 1

Respondents' Perceived Levels of Support from Non-School and School Sources (n = 119)

Sources of Support	*M*	*SD*	Range
Non-School Sources of Support			
Spouse or partner [a]	4.97	1.58	0-9
Family	6.69	1.40	1-9
Friends outside of work	5.84	1.54	1-9
School Sources of Support			
Administrator(s)	5.65	1.90	1-9
Teachers at your school	5.45	1.68	1-9
Teachers in your FFA section/district	5.94	1.66	1-9
Students	5.22	1.39	1-9
Parents of your students	4.86	1.54	1-9
Community where you teach	5.24	1.55	1-9
Non-School Sources of Support	5.83	1.55	0-9
School Sources of Support	5.39	1.24	1-9

Note. [a] Respondents who selected *N/A* for the *spouse or partner* variable were coded 0 = *N/A*. Measured on a scale from 1 (never) to 9 (always) (Tschannen-Moran & Woolfolk Hoy, 2002; Tschannen-Moran & Woolfolk Hoy, 2007).

With research objective two, researchers sought to determine the *types* of support teachers perceived as available. Ten items were used in the survey instrument to evaluate teachers' perceptions of support within three separate constructs. Four survey items were used for the *emotional/appraisal* support construct, three survey items were used for the *informational* support construct, and three items were used for the *instrumental* support construct. As shown in Table 2, novice agricultural education teachers perceived each construct of support as *sometimes* available. While the *emotional/appraisal* support ($M = 5.84$, $SD = 1.22$) was perceived as the most available type of social support, respondents' ratings for *informational* support ($M = 5.60$, $SD = 1.16$) and *instrumental* support ($M = 5.61$, $SD = 1.19$) had similar mean results. Respondents' perceptions of each construct fell within the parameter of *sometimes* available.

Table 2

Respondents' Perceived Levels of Varying Types of Support (n = 119)

Types of Support	*M*	*SD*	Range
Emotional / Appraisal Support	5.84	1.22	0-9
Informational Support	5.60	1.16	0-9
Instrumental Support	5.61	1.19	0-9

Note. Measured on a scale from 1 (never) to 9 (always) (Tschannen-Moran & Woolfolk Hoy, 2002; Tschannen-Moran & Woolfolk Hoy, 2007).

The third objective was to describe the perceived level of *teacher self-efficacy* in novice agricultural education teachers. Consistent with reporting methods used by Tschaennan-Moran and Woolfolk Hoy (2001), the authors reported mean, standard deviation, and reliability (α) for the three constructs of teacher self-efficacy, in addition to a score for the overall teacher self-efficacy. As shown in Table 3, novice agricultural education teachers indicated the greatest degree of teacher self-efficacy in the area of *instructional practices* ($M = 6.84$, $SD = 1.12$), while the least degree of teacher self-efficacy was in the area of *student engagement* ($M = 6.13$, $SD = 1.10$). Overall, the mean result for teacher self-efficacy ($M = 6.57$, $SD = 0.96$) indicated teachers perceived *quite a bit* of control in their efficacious beliefs for managing a classroom, engaging students, and using instructional practices.

Table 3

Respondents' Perceived Levels of Teacher Self-Efficacy (n = 119)

Construct	*M*	*SD*	Alpha (α)
Classroom management	6.75	1.17	.88
Student engagement	6.13	1.10	.82
Instructional practices	6.84	1.12	.86
Overall teacher self-efficacy	6.57	0.96	.91

Note. Measured on a scale from 1 (nothing) to 9 (a great deal) (Tschannen-Moran & Woolfolk Hoy, 2001).

The fourth objective was used to describe the contribution of perceived support from *non-school sources* and *school sources* toward *teacher self-efficacy* in novice agricultural education teachers. The outcome variable for the regression was the *overall mean of teacher self-efficacy*. Researchers chose to use the hierarchical forced entry method for multiple linear regression due to (a) the unknown predictive power of the covariates for *sources* of support used in this study, and (b) to uncover the predictive power of the covariates for demographic characteristics and career commitment. In an effort to enhance the predictive power of the regression models while also recognizing the potential influence of other variables outside the administrative controls of the study, researchers entered the covariates from least to most administratively controllable. As a result, Step 1 of the regression included the total years of teaching experience. The subsequent regression steps included three independent (i.e., predictor) variables for non-school sources of support (e.g., spouse or partner, family, friends) (Step 2), and the six independent variables for school sources of support

(e.g., administrators, teachers at school, teachers in FFA section or district, students, parents, community) (Step 3).

Given the sample size of 119, post-hoc statistical power was calculated for the regression. Social science conventions accept 80% observed power for significance for the addition of a set of independent variables in the overall hierarchical model. Using the effect size of .27 with a probability level of $p < .05$, the observed power for the post-hoc statistical analysis for the addition of the school sources of support covariates resulted in a statistical power that exceeded 0.99. This result indicates less than a 1% chance of a Type II error. Thus, researchers proceeded with analysis with the understanding that the regression may not have the statistical power to draw conclusions, but the sample ($n = 119$) was sufficient for exploratory investigation (Pearson, 2010).

As shown in Table 4, Model 3 of the regression was significant, $F = 5.90(6,108, p < .05)$. When controlling for all other variables, respondents' *total years of teaching* contributed 4.0% (*adjusted* $R^2 = .04$) of the variance for teacher self-efficacy, while *school sources* of support contributed 27.1% (*adjusted* $R^2 = .27$) of the variance for teacher self-efficacy. The researchers determined differences in perceived support from *school sources* explained a significant ($p < .05$) proportion of variance in teacher self-efficacy in novice agricultural education teachers. Furthermore, individual assessment of Model 3 revealed four statistically significant ($p < .05$) covariates for teacher self-efficacy: *total years of teaching* ($p = .00$), perceived support from *family* (p = .05), *students* ($p = .00$) and *community* ($p = .01$). Furthermore, novice teachers' perception of support from *students* ($\beta = 0.45$) was nearly twice as predictive as *total years of teaching* ($\beta = 0.27$). Additionally, perceived support from *community* ($\beta = 0.34$) was more predictive of teacher self-efficacy than *total years of teaching*. Of notable interest is the negative impact of perceived support from *family* on teacher self-efficacy. As such, the positive contribution of *total years of teaching* ($\beta = 0.27$) toward teachers' self-efficacy beliefs was nearly equal to the negative contribution of perceived support from *family* ($\beta = -0.26$).

Table 4

Forced Entry Multiple Linear Regression of Respondents' Teacher Self-efficacy using Selected Demographic Characteristics and Perceptions of Support from School and Non-school Sources (n = 119)

	Model 1				Model 2				Model 3			
	B	*SE B*	*β*	*p**	*B*	*SE B*	*β*	*p**	*B*	*SE B*	*β*	*p**
(Constant)	6.25	.16		.00	5.68	.44		.00	4.74	.47		.00
Total years teaching	.12	.05	.22	.02	.15	.05	.28	.00	.14	.05	.27	.00
Spouse or partner					-.01	.03	-.02	.81	-.02	.03	-.07	.42
Family					-.13	.10	-.19	.19	-.18	.09	-.26	.05
Friends outside work					.24	.09	.38	.01	.13	.08	.21	.12
Administrator(s)									.10	.06	.19	.09
Teachers at school									-.07	.07	-.13	.31
Teachers in FFA									-.04	.05	-.08	.42
Students									.31	.09	.45	.00
Parents of students									-.13	.10	-.21	.17
Community									.21	.08	.34	.01
Adjusted R^2		0.04				0.08				0.27		
F		5.89 (1,117)				2.84 (3,114)				5.90 (6,108)		
ΔR^2		0.04				0.08				0.27		
ΔF		5.89				2.84				5.90		

Note. The dependent variable for the models is the mean score of overall teacher self-efficacy. Independent variables for non-school sources of support were spouse or partner, family, and friends outside of work. Independent variables for school sources of support included administrator(s), teachers at school, teachers in FFA section or district, students, parents of students, and community.
*$p < .05$

For objective five, researchers sought to describe the contribution of the *types* of social support (e.g., emotional/appraisal, informational, and instrumental) toward *teacher self-efficacy* in novice agricultural education teachers. Researchers identified the outcome variable as the *overall mean of teacher self-efficacy* for the regression. The overall model, which included the three social support constructs, was significant, $F = 6.26(3,114, p < .05)$, explaining 15.4% (*adjusted* $R^2 = .15$) of the variance in teacher self-efficacy. However, the three individual social support constructs (e.g., *emotional/appraisal*, *informational*, and *instrumental* support) were not statistically significant ($p < .05$) predictors of novice teacher self-efficacy.

As shown in Table 5, Model 2 of the regression was significant, $F = 6.26(3,114, p < .05)$, explaining 15.4% of the variance in teacher self-efficacy; however, the only statistically significant ($p < .05$) covariate in Model 2 was *total years of teaching* ($p = .00$). The three social support constructs of *emotional/appraisal* support, *informational* support, and *instrumental* support were not statistically significant ($p < .05$) predictors of novice teacher self-efficacy.

Table 5

Hierarchical Forced Entry Multiple Linear Regression of Respondents' Teacher Self-Efficacy using Selected Demographic Characteristics and Perceptions of Various Types Social Support (n = 119)

	Model 1				Model 2			
	B	*SE B*	*β*	*p**	*B*	*SE B*	*β*	*p**
(Constant)	6.25	.16		.00	4.35	.48		.00
Total years teaching	.12	.05	.22	.02	.15	.05	.29	.00
Emotional/Appraisal					.18	.12	.23	.14
Informational					.18	.12	.21	.15
Instrumental					-.05	.13	-.06	.73
Adjusted R^2		0.04				0.15		
F		5.89 (1,117)				6.26 (3,114)		
ΔR^2		0.05				0.14		
ΔF		5.89				6.26		

Note. The dependent variable for Model 1 and Model 2 is the mean for overall teacher self-efficacy. Independent variables for the types of social support included emotional/appraisal support, informational support, and instrumental support. *$p < .05$

Discussion and Recommendations

The purpose of the descriptive-relational study was to determine the degree of social support novice agricultural education teachers experience from various sources and types of social support, in addition to the influence of perceived support on novice teacher self-efficacy. Respondents were teachers of agriculture with five or fewer years of experience during the 2016-2017 academic year. Although this study included a representative sample of novice agricultural education teachers from Illinois and Indiana, the results and implications should not be generalized beyond the teachers in the geographic locations represented in this research. Caution should be used with interpreting the results due to the small sample and limited response rate (40.2%).

The intent of research objective one was to determine the degree of support novice agricultural education teachers perceived as available from non-school sources of support (e.g., spouse or partner, family, friends) and school sources of support (e.g., administrators, teachers at school, teachers in FFA section or district, students, parents, community). Based on the results, novice teachers of agriculture perceived more support from non-school (i.e., personal) sources of support than school sources of support. This finding is consistent with literature that confirms the psychological perception of support is often expressed in personal relationships that include feelings of companionship, value, love and belonging (Chou, 2015; Cobb, 1976), and are influenced by type, quality, and frequency of social interactions (Brouwers, Evers, & Tomic, 2001; DeAngelis et al., 2013). As such, novice teachers perceived the greatest degree of support from personal relationships with a spouse or partner, family, or friends.

Whereas novice teachers felt the greatest degree of support from non-school sources, their perceptions of support from friends outside of work and a spouse or partner were only perceived as sometimes available. Researchers postulate this impression of support from friends outside of work may be a consequence of geographic isolation for novice teachers who start their career in a new community (Buchanan et al., 2013; House, 2001). This finding reinforces the urgency for novice teachers of agriculture to quickly acclimate in the community where they are teaching and acquire personal, supportive relationships to combat the negative consequences of isolation. Additionally, novice teachers in this study indicated the least degree of support from a spouse or partner. With nearly half of the respondents (46.2%) indicating they were divorced, never married, or preferred not to respond, the low mean for this non-school source of support accurately reflects the absence of support from a spouse or partner in this sample. Further research is needed to compare perceptions of available support between teachers currently in a relationship with a spouse or partner to teachers not in a relationship. Additionally, research is necessary to determine if perceptions of support are different for novice male teachers versus novice female teachers.

Novice teachers in this study perceived the greatest degree of school support from teachers in their FFA section or district. Novice teachers' perceptions of support from teachers in their FFA section or district may be attributed to (a) the appropriateness of a match between the support needed and the type of support provided; (b) the influence of mutual respect and social comparison on perceived support; or (c) the value of type, quality, and frequency of social interactions on perceptions of available support (Beard et al., 2010; Brouwers et al., 2001; Collie et al., 2012; Cornu, 2013; Darling-Hammond, 2005; Deangelis et al., 2013; Heaney & Israel, 2008; Kitchel et al., 2012; Nurullah, 2012; Wong, 2015). With respect to these essential characteristics of support, it is justifiable that novice teachers might perceive the greatest degree of support from teachers in their FFA section or district. Additionally, the results implied novice teachers' perceived a greater degree of support from other agricultural education teachers rather than teachers and administrators in their school. Due to the nature of many agricultural education programs, teachers of agriculture may be expressing consequences of physical and professional isolation (Buchanan et al., 2013). The physical location of agricultural education classrooms is often separated from other classrooms, sometimes in a completely different building. Based on this premise, novice teachers may have infrequent interactions with administrators and colleagues, thus decreasing the degree of perceived support from these sources. To address the concern of isolation, administrators and other teachers in the school should actively seek opportunities to engage with novice teachers in a non-judgmental, supportive context.

Research objective two was used to clarify the types of social support which novice agricultural education teachers perceived as available. Researchers confirm that emotional and appraisal support is primarily acquired through intimate, personal relationships; conversely, informational and instrumental support are most frequently expressed through professional

relationships (Heaney & Israel, 2008; House, 1981). Consistent with literature, novice teachers in this study perceived the greatest degree of support in the emotional/appraisal construct. However, similar mean and standard deviation results among the three social support constructs suggests novice teachers were either challenged to discern the specific type of social support they perceived as available from the non-school and school sources of support, or the types of support were too similar to differentiate. Further research is needed with a larger sample of teachers to delineate novice teachers' perceptions of the individual social support constructs.

The purpose of research objective three was to describe the perceived level of teacher self-efficacy in novice agricultural education teachers. Novice agricultural education teachers in this study indicated the greatest level of teacher self-efficacy in the area of instructional practices, followed by classroom management and student engagement, respectively. On average, novice teachers in this study believed they had quite a bit of influence to bring about desired outcomes of student engagement and learning, regardless of how difficult or unmotivated the student may be (Tschannen-Moran & Woolfolk Hoy, 2001).

Literature confirms low teacher self-efficacy is a primary reason teachers choose to leave the profession (Brown et al., 2014; McKim & Velez, 2015; Swam et al., 2011; Tschannen-Moran & Woolfolk-Hoy, 2001), and low perceptions of teacher self-efficacy negatively impact student achievement (Hancock & Scherff, 2010; Kelly & Northrop, 2015; Sorenson & McKim, 2014; Struyven & Vanthournout, 2014). Whereas the most influential source of teacher self-efficacy is mastery experiences, (Bandura, 1977), the *effectiveness* of a mastery experience and one's determination of a successful performance is influenced by verbal or social persuasion (Bandura, 1986). Unfortunately novice teachers, who are in the most critical and formative stages of their development, have limited mastery experiences to draw upon (Tschannen-Moran & Woolfolk Hoy, 2007). As a result, researchers recommend that administrators structure formalized mentoring and induction programs that provide novice teachers opportunities to acquire mastery experiences that include timely and constructive feedback (i.e., social or verbal persuasion). These opportunities, combined with vicarious experiences with experienced teachers, may stimulate physiological and emotional arousal, thus enhancing teacher self-efficacy.

The intent of research objective four was to describe the contribution of perceived support from non-school sources and school sources toward teacher self-efficacy in novice agricultural education teachers. It was concluded the cumulative effects of non-school sources of support were not statistically significant predictors of teacher self-efficacy. However, novice teachers' perceptions of available support from school sources contributed a significant and unique proportion of the variance in teacher self-efficacy for novice teachers of agriculture. Specifically, novice agricultural education teachers' perceptions of support from school sources – predominantly students and community – explained 27.1% of the variance in teacher self-efficacy. Thus, the results from this study imply the support novice agricultural education teachers perceive from students and community are the most significant predictors of teacher self-efficacy.

Although the psychological construct of support is complex, researchers confirm the characteristics of support are demonstrated within the context of relationships, which contributes to an individual's physiological, psychological, and emotional well-being. A relationship is "an association between two interacting partners," wherein trust, loyalty, and mutual commitment are developed over time (Cropanzano & Mitchell, 2005, p. 883). Moreover, quality relationships demonstrate reciprocity, are founded in mutual trust and respect, and are characterized by frequent interactions which result in emotional familiarity and mutually beneficial outcomes (Heaney & Israel, 2008). As novice teachers strive to develop relationships with students and community whom they can rely on to provide social support, the psychological state of trust grows from within

the dynamics of a quality relationship. Trust involves (a) the reciprocity to care for and demonstrate consideration of another person; (b) feelings of mutual obligation, honesty, and vulnerability; and (c) an expectation that the emotional investment expressed within the relationship will result in positive intentions or behaviors (Cropanzano & Mitchell, 2005; Dirks & Ferrin, 2002; Evans & Revelle, 2008; Rotter, 1971). Support and trust are the foundations of a quality relationship; over time, positive day-to-day exchanges with students and community can deepen the level of trust and support in relationships, lead to interpersonal attachment, and help affirm novice teachers' beliefs that others support and trust their abilities as a teacher. As such, further research is needed to explore the relationship between perceptions of support and trust from school sources of support (e.g., principal, colleagues, students, parents).

Research objective five was used to determine the contribution of the types of social support on novice teacher self-efficacy. Although individual types of social support were not significant, the statistical significance of the overall model affirms the need for support. This finding is consistent with literature that substantiates the overall benefits of psychological support to cope with professional and personal life stressors (Cohen, 2004; DeAngelis et al., 2013; Fantilli & McDougall, 2009; Nurullah, 2012), and mitigate the psychological challenges of reality shock, culture shock, and isolation (Caspersen & Raaen, 2013; Heaney & Israel, 2008; Langley et al., 2014). To further enhance the impact of support, the most beneficial support is provided within the context of a relationship founded on mutual trust and respect (Brouwers et al., 2001; Cohen, 2004; DeAngelis et al., 2013; Lakey & Cohen, 2000; Nurullah, 2012; Uchino, 2009). In an effort to improve teacher retention, novice teachers must feel valued and supported to reduce attrition (Burke et al., 2015; Hancock & Scherff, 2010).

Findings and conclusions drawn from this research provide opportunities for school administrators and teacher educators to integrate best practices in mentoring and induction programs. In an effort to increase student achievement, improve job satisfaction, and enhance career commitment for novice teachers, school administrators should devote more time and resources to the development of teacher self-efficacy. Successful mentoring or induction programs should allocate designated times for novice teachers to collaborate with mentors about instructional strategies, reflect on experiences, and observe teachers in their classroom environment (i.e., vicarious experiences) (Kram & Ragins, 2007; National Commission on Teaching and America's Future, Carroll, 2005). The cumulative effects of mastery and vicarious experiences, supported with verbal or social persuasion, will nurture physiological and emotional stimulation; thus, potentially enhancing efficacious beliefs.

Teacher educators and agricultural educational professionals should consider offering courses, professional development, or mentoring opportunities with experienced educators to share the benefits of psychological support and its subsequent impacts on teacher self-efficacy. Improved awareness of specific ways in which school and non-school sources can convey support will help novice agricultural education teachers minimize the challenges of the profession, feel efficacious in their role as an educator and FFA advisor, and promote longevity as a career educator. Awareness of the psychological construct of support and its impact will be most effective at increasing teacher self-efficacy, improving career commitment, and reducing attrition when novice teachers of agriculture develop the awareness to recognize support, the emotional capacity to feel worthy of support, and demonstrate a willingness to seek out and accept support when offered.

Limited research has been completed in education on ways to access and utilize social support to enhance teacher self-efficacy, whereby potentially reducing attrition. Future directions for investigation include qualitative and quantitative research to evaluate perceptions of social support among five groups of agricultural education teachers: (a) pre-service teachers; (b) novice

teachers who are currently teaching; (c) mid-career teachers; (d) teachers who left the profession; and (e) veteran teachers who have remained in the profession. Researchers should explore differences among each group of educators relative to their years of teaching experience, stage of teacher development (Fuller, 1969), relationship with a spouse or partner, and gender. In an effort to enhance teacher self-efficacy and potentially reduce teacher attrition, it is essential for teacher educators, school administrators, and agricultural education professionals to determine specific practices to enhance novice teachers' perception of available support.

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