RELATIONSHIPS BETWEEN PERSONALITY TYPE AND TEACHING EFFICACY OF STUDENT TEACHERS

T. Grady Roberts, Assistant Professor
Diana L. Mowen, Graduate Assistant
Don W. Edgar, Graduate Assistant
Julie F. Harlin, Assistant Professor
Gary E. Briers, Professor
Texas A&M University

Abstract

The purpose of this study was to determine if relationships exist between teaching efficacy and personality type of student teachers. The population of interest was all agricultural science student teachers at Texas A&M University. The sampling frame included all student teachers during the spring and fall semesters of 2005 (n= 72). Teaching efficacy was measured using the long form of the Teachers' Sense of Efficacy Scale, and the Myers-Briggs Type Indicator® (MBTI®) Form M was used to assess personality type. The typical student teacher was a 22 year old white female who had enrolled in agricultural science courses in high school and who was currently completing an undergraduate degree. Student teachers exhibited "Quite a Bit" of teaching efficacy throughout the student teaching semester. Student teachers were more extroverted (E), sensing (S), feeling (F), and judging (J). The two most commonly observed personality types were ESFJ and ENFP. Personality type of student teachers is negligibly related to teaching efficacy. Efficacy in instructional strategies is negatively related with sensing (S) and efficacy in classroom management is positively related to judging (J).

Introduction

"On a daily basis, teachers confront complex decisions that rely on many different kinds of knowledge and judgment and that can involve high-stakes outcomes for students' futures" (Bransford, Darling-Hammond, & LePage, 2005, p. 1). During student teaching, preservice teachers are faced with many of these same decisions, without the benefit of professional experience to rely on. Do observed successes (and failures) impact their career decisions? In 2001, 20% of newly qualified agricultural science teachers did not want to take a teaching job (Camp, Broyles, & Skelton, 2002). An additional 20% of new graduates wanted to teach but did not take teaching jobs. With 40% of new agricultural science graduates choosing to not take teaching positions and an anticipated growth of 14% in the number of agricultural science programs between 2001 and 2013 (Camp et al.), the need for qualified teachers with a desire to teach is critical. Is there something that can be done at the preservice level to impact this trend?

Theoretical Framework

According to Mitzel's Model as explained by Duncan and Biddle (1974), the study of teaching can be described by the interaction between *Presage* variables (teacher characteristics), *Context* variables (student and environmental variables), *Process* variables (teacher and student interactions), and *Product* variables (outcomes). Conceptually, student teachers assume the role of "student" and cooperating teachers as the "teachers" in the model. Characteristics

of student teachers comprise the *Context* variables segment of the model. From an examination of the literature, two main theories emerged relevant to *Context* variables: self-efficacy (Bandura, 1997) and personality style (Myers, 1993). Figure 1 depicts the conceptual model used to guide this study, which was an adaptation of Mitzel's model (Dunkin & Biddle, 1974).

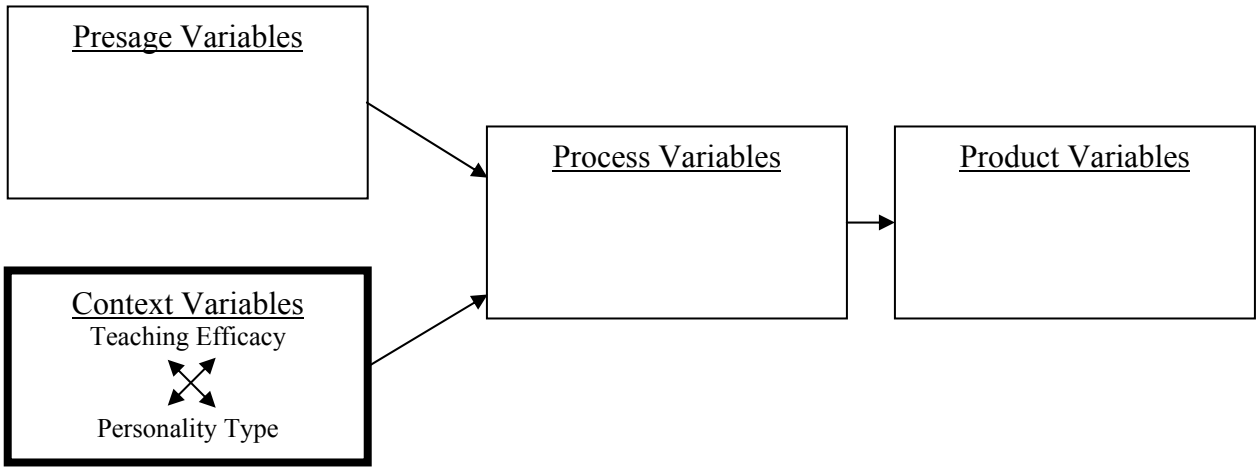

Figure 1. The relationship between teaching efficacy and personality type of student teachers.

A person's beliefs about their abilities to be successful in given situations define self-efficacy (Bandura, 1997). This study concentrated on teaching efficacy, which is a more specific segment of self-efficacy. Teaching efficacy is a measure of a teacher's perception of his or her ability to generate student learning (Tschannen-Moran & Woolfolk Hoy, 2001). Teachers who believe strongly in their teaching efficacy were more likely to foster self-efficacy in their students through development of challenging and engaging learning environments. Teachers with low teaching efficacy were more likely to foster learning environments that undermined students' self-efficacy and resulted in lower student achievement (Bandura).

According to Knobloch and Whittington (2003), teaching efficacy is also tied to career commitment. They found that teachers who experienced no decrease in their sense of teaching efficacy during the first ten-weeks of the school year were also teachers with high career commitment. Research on student teachers revealed a fluctuation of teaching efficacy over the course of an 11-week student teaching experience with a slight gain from beginning to end (Roberts, Harlin, & Ricketts, 2006). Knobloch (2006) found similar changes in teaching efficacy in student teachers in Ohio and Illinois.

Personality type of teachers is another area of research. To better understand how personal qualities in these areas may impact a teacher's effectiveness, it is necessary to look at the personality theory of Carl Jung (1971) and its advancement by Isabel Myers (1993). The Myers-Briggs Type Indicator® (MBTI®) was developed from this theory and can be used to classify participants into one of 16 personality types. Personalities are defined by four measures; energy, perception, judgment, and outside world (Quenk, 2000). Each measure is then divided into two opposing functions or attitudes. The two functions of energy are extroversion and introversion. The opposing functions of perception are sensing and intuition. Thinking and feeling are the opposing attitudes of judgment, and the two attitudes toward the outside world are judging and perceiving (Quenk).

A study by Cano and Garton (1994) used the Myers-Briggs Type Indicator® (MBTI®) to look at personality types of

preservice teachers. A majority of participants were extroverted, sensing, thinking, and judging (ESTJ) personality types. This finding supported earlier work by Cano, Garton, and Raven (1992) who also reported extroversion (E), sensing (S), thinking (T), and judging (J) as the most prevalent personality types. While this research explained the dominant personality type of a group of preservice teachers, it also led to questions about what this explains about preservice teachers. A recommendation was made that teachers be provided with materials to assess their students' personality types (Cano and Garton). They suggested that this assessment would provide teachers with a better idea of students' learning styles and aid in tailoring lessons to suit students' needs. The question remains whether preservice teachers' personality types impact their decision to enter or remain in the teaching profession.

No previous research could be found on the relationship between personality type and teaching efficacy of student teachers. However, Roberts, Harlin, and Briers (in press) looked at the relationship in question among cooperating teachers. They reported a relationship between personality type and teaching efficacy of cooperating teachers. Cooperating teachers exhibited "Quite a Bit" of teaching efficacy; their most prevalent personality types were ISTJ (26.8%), ESTJ (12.2%), ENFJ (12.2%), and ESFJ (12.2%). Their results indicated that extroversion was positively related to efficacy in student engagement (r = .49), efficacy in instructional strategies (r = .52), efficacy in classroom management (r = .54), and overall teaching efficacy (r = .58).

If extroversion is a common personality trait of teachers with high teaching efficacy and teachers with high teaching efficacy show greater commitment to teaching, there are great implications for working with student teachers. If a link can be proven between personality types and teaching efficacy for student teachers, steps may be taken by teacher educators to improve the chances that a student teacher will enter and remain in the teaching profession. However, research could not be found that examined the relationship between personality type and teaching efficacy of student teachers. This inquiry sought to fill that void.

Purpose and Objectives

The purpose of this study was to determine if relationships exist between teaching efficacy and personality type of student teachers. Three objectives guided this inquiry.

1. Describe the teaching efficacy of student teachers.
2. Describe the personality types of student teachers.
3. Examine relationships between teaching efficacy and personality type of student teachers.

Methodology

A correlational design was used to achieve the purpose of this study. The population of interest was all agricultural science student teachers at Texas A&M University. The sampling frame included all student teachers during the spring and fall semesters of 2005 (n = 72). Data were collected from 68 (94%) participants of the sample. Data were analyzed using SPSS, and appropriate statistics were presented. Although not randomly drawn, the researchers believe the sample to be representative of all student teachers at Texas A&M University. Readers are encouraged to examine the findings and make their own judgments about generalizing to other groups of agricultural science student teachers (Oliver & Hinkle, 1982).

Teaching efficacy was measured using the long form of the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001), which uses 24 summated rating scale items to measure teaching efficacy in student engagement, (8 items), instructional strategies (8 items), classroom management (8 items), and overall teaching efficacy (all 24 items). Reliability coefficients for each construct were reported as .90, .81, .86, and .86, respectively. Content validity was

established via a panel of experts in the field of teacher efficacy and three distinct studies (Tschannen-Moran & Woolfolk Hoy). Construct validity was established through instrument compilation with the use of other existing measures of teacher efficacy (Kerlinger, 1986; Tschannen-Moran & Woolfolk Hoy).

This study utilized the Myers-Briggs Type Indicator® (MBTI®) Form M to assess personality types of the respondents. Form M contains 93 items to assess personality. MBTI® Form M allows the respondents two choices for each of the 93 items. The responses from the sample were hand scored by the researchers. Reliabilities for each construct (E-I, S-N, T-F, and J-P), as measured by Cronbach's Alpha, were reported as .91, .92, .91, and .92, respectively. Construct validity has been established through comparisons with other psychological tests.

Data were collected face-to-face by the researchers. The 15-week student teaching semester at Texas A&M University consists of a four-week on-campus "block" and an 11-week field experience. The Teachers' Sense of Efficacy Scale instrument was administered four times by the researchers: 1) the first day of the block; 2) the end of the fourth week of the block; 3) the middle of the 11-week field experience; and 4) the last day of the semester. The MBTI® instrument was administered during the fourth week of the block.

Results

Complete data were collected from 68 student teachers (94%). Fifty (73.5%) of the participants were female. Sixty-six (97%) classified themselves as white and two (3%) as Hispanic. Ages ranged from 21 to 29, with an average of 22 (SD = 1.28). Most (n = 55, 81%) participants were undergraduate students. The remaining participants were either post-baccalaureate or graduate students. An overwhelming majority (n = 57, 84%) had taken agricultural science courses in high school.

Objective One: Describe the teaching efficacy of student teachers.

As described in the methods section of this article, teaching efficacy of student teachers was examined at four different points during the student teaching semester. As depicted in Table 1, student teachers exhibited "Quite a Bit" of efficacy in student engagement, instructional strategies, classroom management, and overall teaching efficacy throughout the student teaching semester. The lowest level of efficacy (M = 6.69, SD = .94) was observed for student engagement during the middle of the 11-week field experience. Student teachers were most efficacious in instructional strategies at the end of the 11-week field experience (M = 7.62, SD = .76). In general, teaching efficacy levels increased during the four week "block," decreased to their lowest levels in the middle of the 11-week field experience, and then increased to their highest levels at the end of the 11-week field experience.

Table 1
Teaching Efficacy of Student Teachers

	Round 1		Round 2		Round 3		Round 4	
Construct	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Student Engagement	6.87	.73	7.10	.81	6.69	.94	7.38	.76
Instructional Strategies	6.85	.77	7.24	.77	7.14	.84	7.62	.76
Classroom Management	7.15	.94	7.33	.78	7.02	1.04	7.58	.80
Overall Teaching Efficacy	6.95	.70	7.23	.72	6.95	.82	7.52	.69

Note. Scale: 1 = Nothing, 3 = Very Little, 5 = Some Influence, 7 = Quite A Bit, 9 = A Great Deal

Objective Two: Describe the personality types of student teachers.

The MBTI® yields scores on each of the eight type possibilities, which in turn are used to categorize participants as E-I, S-N, T-F, and J-P. As represented in Table 2, student teachers predominantly exhibited extroversion (67.6%), sensing (66.2%), and feeling (64.7%). On the final scale, student teachers were more evenly split between judging (54.4%) and perceiving (45.6%).

Table 2
Myers-Briggs Type Preferences of Student Teachers

			Preference[a]	
Scale (Possible Range)	*M*	*SD*	*f*	%
Extroversion-Introversion (0 to 21)				
Extroversion (E)	12.93	5.96	46	67.6
Introversion (I)	8.10	5.96	22	32.4
Sensing-Intuition (0 to 26)				
Sensing (S)	15.85	5.68	45	66.2
Intuition (N)	10.15	5.68	23	33.8
Thinking-Feeling (0 to 24)				
Thinking (T)	9.47	5.97	24	35.3
Feeling (F)	14.53	5.97	44	64.7
Judging-Perceiving (0 to 22)				
Judging (J)	12.41	5.11	37	54.4
Perceiving (P)	9.59	5.11	31	45.6

[a]Preference determined by participant's highest score in each scale

Using participants' preferences on each scale (E-I, S-N, T-F, and J-P) yields a distinct personality type. Table 3 displays the personality types of student teachers. More than two-thirds (n = 48, 70.7%) of the student teachers were of six personality types. The two most prevalent personality types were ENFP and ESFJ, exhibited by 11 student teachers each (16.2% each). The next most common types were ISTJ, ESTJ, and ISFP, each present in seven student teachers (10.3% each). Six student teachers (8.8%) were classified as ESFP. No student teachers were labeled as INFJ.

Table 3
Personality Type of Student Teachers

Type	*f*	%	Type	*f*	%
ENFP	11	16.2	ISFJ	3	4.4
ESFJ	11	16.2	ENTJ	2	2.9
ISTJ	7	10.3	INTJ	2	2.9
ESTJ	7	10.3	INFP	1	1.5
ISFP	7	10.3	ENTP	1	1.5
ESFP	6	8.8	INTP	1	1.5
ENFJ	5	7.4	ISTP	1	1.5
ESTP	3	4.4	INFJ	0	0

Objective Three: Describe the relationship between teaching efficacy and personality type of student teachers.

Pearson product moment correlations were used to determine the relationship between teaching efficacy and personality type. Given the direct, inverse nature of scores in the four scales of the MBTI® (E and I; S and N; T and F; & J and P), only extroversion (E), sensing (S), thinking (T), and judging (J) were used in the analysis. Teaching efficacy in student engagement, instructional strategies, classroom management, and overall teaching efficacy for all four rounds of data collection were included in the analysis. Results of the correlation analysis are depicted in Table 4. Observed relationships were between r = .26 and r = -.25, indicating low and negligible relationships (Davis, 1971).

Table 4
Correlations Between Personality Type Scores and Teaching Efficacy Scores of Student Teachers

		Personality Type Scale			
Teaching Efficacy	Round	Extroversion	Sensing	Thinking	Judging
Student Engagement	1	-.01	-.12	-.23	-.09
	2	.12	-.15	-.19	-.12
	3	.15	-.13	.02	.16
	4	.15	-.14	-.23	.09
Instructional Strategies	1	.01	-.07	-.09	-.02
	2	.08	-.16	-.17	-.16
	3	.20	-.17	.03	.08
	4	.04	-.25*	-.15	.09
Classroom Management	1	.17	.10	.02	.02
	2	.07	.03	-.13	-.16
	3	.15	-.02	.05	.26*
	4	.15	-.04	-.12	.20
Overall Teaching Efficacy	1	.08	-.03	-.11	-.03
	2	.10	-.10	-.18	-.16
	3	.19	-.11	.04	.20
	4	.13	-.16	-.18	.15

* $p < .05$

Only two of the observed correlations were statistically significant. Sensing (S) had a negligible negative relationship with efficacy in instructional strategies at the end of the 11-week field experience (r = -.25), which is depicted in Figure 2. Judging (J) had a negligible positive relationship with efficacy in classroom management in the middle of the 11-week field experience (r = .26) (Figure 3).

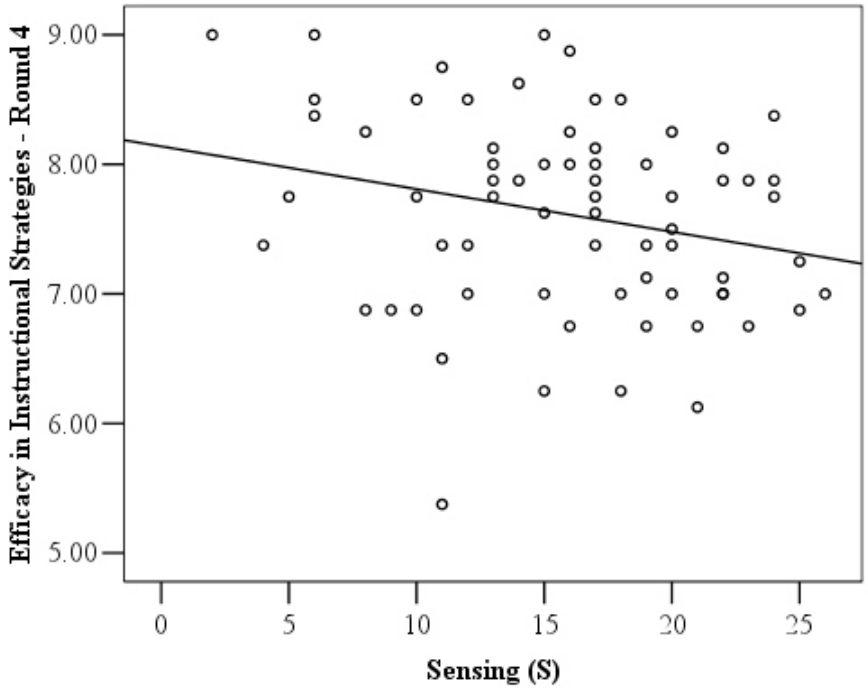

Figure 2. The relationship between sensing (S) and efficacy in instructional strategies at the end of the 11-week field experience (r = -.25).

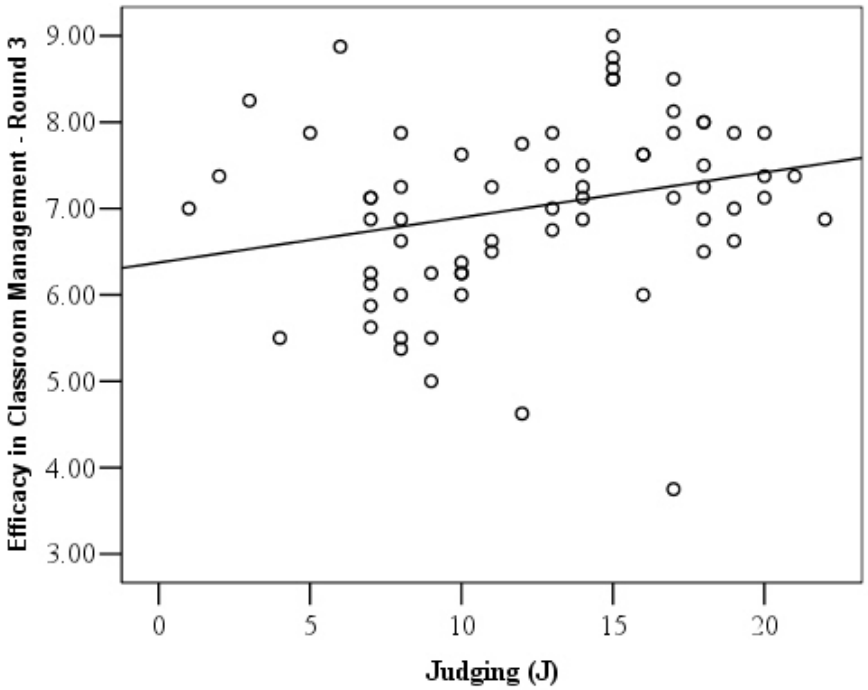

Figure 3. The relationship between judging (J) and efficacy in classroom management in the middle of the 11-week field experience (r = .26).

Conclusions

Based on the findings of this inquiry, several conclusions were made. The typical student teacher was a 22-year-old white female, completing an undergraduate degree, who had been enrolled in agricultural science courses in high school. This was consistent with what Roberts, Harlin, and Ricketts (2006) found but differed with Camp et al. (2002), who reported that, nationally, 57% of student teachers were male.

Student teachers exhibited "Quite a Bit" of teaching efficacy throughout the student teaching semester. Teaching efficacy increased during the four-week "block," slightly decreased by the middle of the 11-week field experience, and then increased to its highest level at the end of the field experience. This conclusion is consistent with the conclusions drawn by Knobloch (2006) and Roberts, Harlin, and Ricketts (2006).

Student teachers were more extroverted (E), sensing (S), feeling (F), and judging (J). The two most commonly observed personality types were ESFJ and ENFP. This was similar to the findings of Cano and Garton (1994), who found a majority of student teachers they examined to be ESTJ. This conclusion also stands in contrast to Roberts, Harlin, and Briers (in press) who found cooperating teachers to be predominantly ISTJ. Only 17% of the cooperating teachers in that study were ESFJ or ENFP.

Personality type of student teachers is negligibly related to teaching efficacy. Efficacy in instructional strategies is negatively related with sensing (S) and efficacy in classroom management is positively related to judging (J). This stands in stark contrast to Roberts, Harlin, and Briers (in press), who found that teaching efficacy of cooperating teachers was substantially related with extroversion (E).

Implications and Recommendations

Although not a direct objective of this study, the demographic findings are interesting. Student teachers at Texas A&M University continue to be predominantly female, which contradicts national data and demographics of inservice agricultural science teachers in Texas (Camp et al., 2002). What attracts females to this preservice program? How is this program different than other preservice programs? This phenomenon is worthy of further investigation, particularly for those states and programs that desire an increase in female agricultural science teachers.

Although student teachers exhibited "Quite a Bit" of teaching efficacy, they were least efficacious during the middle of the 11-week field experience. It is recommended that strategies be developed and implemented to help increase teaching efficacy of student teachers during this time period of their field experience. Additionally, it is recommended that further research be conducted to see if a similar trend occurs with student teachers at other universities.

The observed personality types of student teachers were considerably different than the personality types of cooperating teachers reported by Roberts, Harlin, and Briers (in press). Does it make a difference if student teachers and cooperating teachers are matched by personality type? Kitchel (2005) found that personality type did not influence interaction between student teachers and cooperating teachers. However, is the teaching efficacy of the student teachers impacted? Is the student teacher's decision to enter the profession influenced? Both are worthy questions and should be investigated with further research.

Only negligible relationships were observed between personality type and teaching efficacy, which implies that regardless of personality type, student teachers can be efficacious about teaching. Accordingly, no changes in current practices can be recommended to teacher educators at Texas A&M University related to personality type of student teachers. It is, however, recommended that this research be replicated with other populations of student teachers to determine if similar results occur.

References

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.

Bransford, J., Darling-Hammond, L., & LePage, P. (2005). Introduction. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 1-39). San Francisco: Jossey-Bass.

Camp, W. G., Broyles, T., & Skelton, N. S. (2002). *A national study of the supply and demand for teachers of agricultural education in 1999-2001.* Blacksburg, VA: Virginia Polytechnic Institute and State University.

Cano, J., & Garton, B. L. (1994). The learning styles of agriculture preservice teachers as assessed by the MBTI. *Journal of Agricultural Education, 35*(1), 8-12.

Cano, J., Garton, B. L., & Raven, M. R. (1992). Learning styles, teaching styles, and personality styles of preservice teachers of agricultural education. *Journal of Agricultural Education, 33*(1), 46-60.

Davis, J. A. (1971). *Elementary survey analysis.* Englewood Cliffs, NJ: Prentice Hall.

Duncan, M. J., & Biddle, B. J. (1974). *The study of teaching.* Washington, D.C.: University Press of America.

Jung, C. (1971). *Psychological types*. Princeton, NJ: Bollingen.

Kerlinger, F. N. (1986). *Foundations of behavioral research.* New York: Holt, Rhinehart, & Winston.

Kitchel, T. (2005). *Personality type as a predictor of interaction between student teachers and cooperating teachers.* Unpublished doctoral dissertation, University of Missouri-Columbia.

Knobloch, N. A. (2006). Exploring relationships of teachers' sense of efficacy in two student teaching programs. *Journal of Agricultural Education, 47*(2), 36-47.

Knobloch, N. A., & Whittington, M. S. (2003). Differences in teacher efficacy related to career commitment of novice teachers. *Journal of Career and Technical Education, 20*(1), 87-98.

Myers, I. B. (1993). *Introduction to type*. Palo Alto, CA: Consulting Psychologists Press.

Oliver, J. D., & Hinkle, D. E. (1982). Occupational education research: Selecting statistical procedures. *Journal of Studies in Technical Careers, 4*(3), 199-208.

Quenk, N. L. (2000). *Essentials of Myers-Briggs Type Indicator assessment.* New York: John Wiley & Sons.

Roberts, T. G., Harlin, J. F., & Briers, G. E. (in press). The relationship between teaching efficacy and personality type of cooperating teachers. *Journal of Agricultural Education.*

Roberts, T. G., Harlin, J. F. & Ricketts, J. C. (2006). A longitudinal examination of teaching efficacy of agricultural science student teachers. *Journal of Agricultural Education, 47*(3), 81-92.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.

T. GRADY ROBERTS is an Assistant Professor in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University, MS 2116, 104A Scoates Hall, College Station, TX 77843-2116. E-mail: groberts@tamu.edu.

DIANA L. MOWEN is a Graduate Assistant in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University, MS 2116, 228C Scoates Hall, College Station, TX 77843-2116. E-mail: dmowen@aged.tamu.edu.

DON W. EDGAR is a Graduate Assistant in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University, MS 2116, 112 Scoates Hall, College Station, TX 77843-2116. E-mail: degdar@aged.tamu.edu.

JULIE F. HARLIN is an Assistant Professor in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University, MS 2116, 104B Scoates Hall, College Station, TX 77843-2116. E-mail: j-harlin@tamu.edu.

GARY E. BRIERS is a Professor in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University, MS 2116, 105A Scoates Hall, College Station, TX 77843-2116. E-mail: g-briers@tamu.edu.