

Psychosocial Differences by CTE Discipline and Personality Type in Student Teachers

Tracy Kitchel

University of Missouri

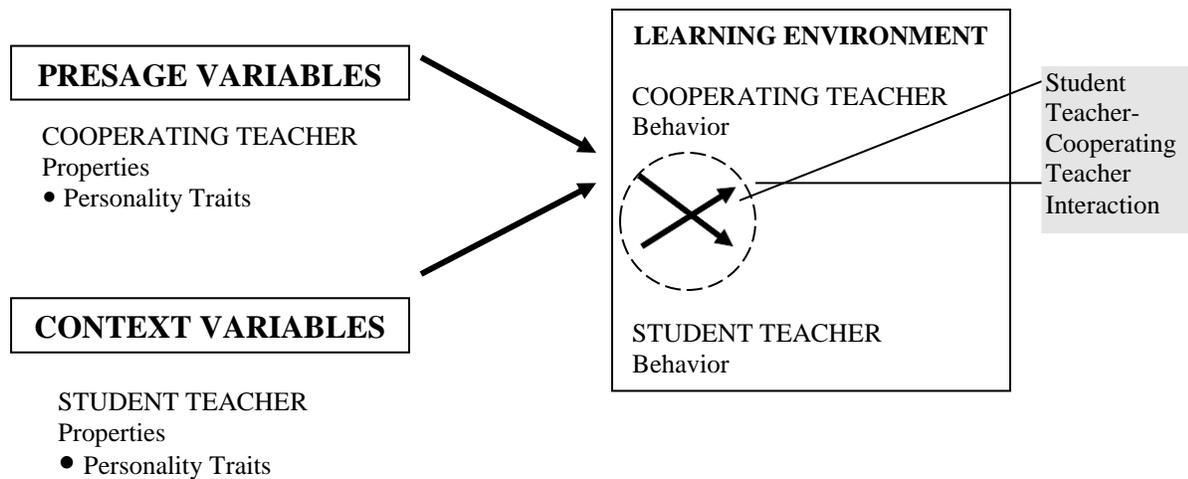
ABSTRACT

The purpose of the study is to describe differences in career and technical education (CTE) student teachers' perceptions of psychosocial support provided by student teachers, as separated by CTE discipline (Agricultural Education and Family and Consumer Sciences Education) and personality type, at a southern state university. The group was more female than male. The most frequent personality types for the sample were ESTP, ENFP, and ESFJ. ESTP was the most frequent personality type for Ag Ed student teachers; ESFJ was the most frequent for FCS Ed. Psychosocial assistance is being provided to student teachers by their cooperating teachers from some extent to a large extent. The acceptance function was reported as the largest extent provided by the sample and by the Ag Ed student teachers; friendship for FCS Ed. Social was reported the lowest function for both groups. The E-I personality type dichotomy experiences the largest difference.

Introduction and Theoretical Framework

The cooperating teacher is important in the student teaching process. Literature in education (Lemma, 1993; Posner, 2000; Roe & Ross, 1994; Schwebel, Schwebel, Schwebel, & Schwebel, 1996; Weamser & Woods, 2003), Agricultural Education (Deeds, Flowers, & Arrington, 1991; Edwards & Briers, 2001; Garton & Cano, 1996; Harlin, Edwards, & Briers, 2002; Norris, Larke, & Briers, 1990; Peiter, Terry, & Cartmell, 2005; Schumacher & Johnson, 1990) and Family and Consumer Sciences (Montgomery, 2000) corroborate this statement. There are studies focusing on the student teacher-cooperating teacher relationship aspect of the overall student teaching experience (Kitchel & Torres, in press; Kitchel & Torres, 2005; Montgomery, 2000). From an efficacy standpoint, Knobloch and Whittington (2002) recommend that student and novice teachers need to feel like they are “part of a team of teachers who are supportive to each other in helping students learn” (p. 337). Given the role of the cooperating teacher in student teaching, that relationship becomes paramount to the development and efficacy of the student teacher as they transition to being an in-service teacher.

This study represents a partial replication of a study conducted by Kitchel and Torres (in press). In that study, Dunkin and Biddle's (1974; as cited in Cruickshank, 1990) model was applied to the context of student teaching (Figure 1). It was argued that the cooperating teacher would benefit the role of teacher and the student teacher would benefit the role of pupil or student. According to the model, the teacher (cooperating teacher) possesses presage variables that influence his or her behavior in the learning environment. The pupil or student (student teacher) possesses context variables that similarly influence his or her behavior within the learning environment. The learning environment (the cooperating site) then becomes the context in which the student teacher and cooperating teacher interact.



*Figure 1. Components and variables of interest in the current study
Personality Type Theory Utilized to Describe Presage and Context Variables*

Jung’s (1971) psychological type theory was used as the theoretical framework to describe a potential set of presage of context variables. The most widely applied interpretation and operationalization of this theory is the Myers-Briggs Type Indicator (MBTI®). Jung’s theory, as interpreted by Myers, McCaulley, Quenk and Hammer (2003) “is that much seemingly random variation in behavior is actually quite orderly and consistent, being due to basic differences in the way individuals prefer to use their judgment and perception” (p. 3).

The theory operates under the assumption that personality is comprised of four sets of dichotomies: *extraversion-introversion* (E-I), *sensing-intuition* (S-N), *thinking-feeling* (T-F) and *judging-perceiving* (J-P). Each person’s type preference exists somewhere between all four sets of these dichotomies. According to Myers, et al. (2003), the E-I dichotomy focuses on orientations of energy, where extraverts tend to focus on the “outer world of people and objects” (p. 6), introverts tend to focus on the “inner world of experience and ideas.” (p. 6). For the S-N dichotomy, the differences lie in processing and perception. Individuals who prefer the more sensing end of the dichotomy prefer to perceive with their senses, where more intuitive individuals tend to perceive patterns and interrelationships. The T-F dichotomy is defined by how situations are judged. Thinking individuals tend to use logic and objectivity where feeling individuals tend to use social values and harmony to guide them. Finally, the J-P dichotomy is defined by a person’s attitude toward the outer world. Judging individuals approach the outer world with structure and closure, where perceiving individuals approach the outer world with spontaneity and openness.

Studies related to teaching reveals that, as an occupational trend, teaching and/or education are prominently ISFJ, INFJ, ENFP, ESFP, ESFJ, and ENFJ (Myers, et al., 2003). The common thread in these types is the feeling end of the T-F dichotomy. Kitchel and Torres (in press) found Agricultural Education student teachers and cooperating teachers to be more sensing, thinking and judging. This finding was consistent with Kitchel and Cano (2001) in a study examining nine years of Agricultural Education major at The Ohio State University. Similar studies could not be located for Family and Consumer Sciences Education or Career and Technical Education teachers or pre-service teachers.

The MBTI[®] has also been utilized to describe phenomena related to teaching and learning. Fairhurst and Fairhurst (1995) describe the different types in the context of teaching and learning in their book *Effective Teaching, Effective Learning*. Within the text is the psychological type theory applied to students, teachers and learning. Myers, et al. (2003) similarly synthesized research to describe learning preferences by the different dichotomies. Related, Nardi (2001) used personality type as a lens for understanding the educational concept of multiple intelligences. The MBTI[®] has also been used in the contexts of work satisfaction (Myers, et al., 2003), occupational trends (Hammer, 1993), team building (Hirsh, 1992), higher education (Provost & Anchors, 1987), and relationships (Myers & Myers, 1995). As Kitchel and Torres (in press) posit, the extensiveness of the MBTI[®] gives support to its potential predictive use as a means of understand student teacher and cooperating teacher interaction.

Psychosocial Theory Utilized to Describe the Learning Environment

Kram's (1985) work in mentoring was utilized in putting a theoretical underpinning to the learning environment or the context in which the student teacher and cooperating teacher interacts. Part of the overall mentoring theory suggests that there are psychosocial functions that assist mentors in the psychological development of their protégé. According to Hall (1986), these psychosocial functions "enhance a sense of competence, clarity of identity, and effectiveness in a professional role" (p. 162).

The functions Kram (1985) identified are: *acceptance, friendship, role model, and counseling*. A mentor (or applied in this study's context – cooperating teacher) who applies acceptance attempts to induct the protégé (student teacher) into the profession. A mentor applying the friendship function attempts to build a relationship as a friend; developing someone the protégé can trust. The role model function is applied when the mentor purposefully exhibits behaviors of an ideal professional. The counseling function is applied when the mentor listens and attempts to assist the protégé with problems. Greiman (2002), through a review a literature, added the *social* function. A mentor demonstrates this function by interacting with the protégé outside of the working context.

Montgomery (2000) states that "prior to the student teaching semester, both the student teacher and cooperating teacher should examine alternative relationship models which support professional development" (p. 13). Perhaps a common theory could be Kram's psychosocial theory. As stated previously, Kitchel and Torres (in press) found that that Agricultural Education student teachers were receiving psychosocial assistance from their cooperating teachers. Also, it

was found that personality type was not very influential of the extent cooperating teachers provided student teachers and that the findings were similar for both cooperating teachers and student teachers. Again, similar findings could not be located for either Family and Consumer Sciences Educators or for Career and Technical Educators.

There are several differences in the current study and the original Kitchel and Torres (in press) study. First of all, the sample differs. As Kitchel and Torres recommend, their study should be replicated at different universities. Secondly, the Form G of the MBTI[®] was utilized whereas that form is now phased out by Form M. It raises the question that given these changes in the study, would differences exist between in psychosocial support by personality type? Lastly, the context consisted solely of Agricultural Education student teachers. Would other Career and Technical Education disciplines differ in these perceptions as well?

Purpose and Objectives

The purpose of the study is to describe differences in career and technical education (CTE) student teachers' perceptions of psychosocial support provided by student teachers, as separated by CTE discipline and personality type, at a southern state university. To achieve this purpose, the following objectives were developed:

1. Describe characteristics (personality type profile by discipline, gender, CTE discipline) of the group.
2. Describe differences in psychosocial support by CTE discipline (Agricultural Education and Family and Consumer Sciences).
3. Describe differences in psychosocial support by personality type.

Procedures

The population for the study was Agricultural Education and Family and Consumer Sciences Education student teachers at a southern state university. The sample ($n = 19$) was a time and place sample representing student teachers in the 2005-2006 school year. Given the small sample size, this study was selected to be more exploratory in nature and therefore is descriptive-survey in design versus relational.

Two data collection instruments were utilized. The Myers-Briggs Type Indicator (MBTI[®]) was utilized to measure personality type. The Mentoring Relationship Questionnaire (MRQ) was utilized to measure psychosocial assistance. The characteristics of gender and discipline were obtained from student teaching rosters.

Psychological type was operationalized by the MBTI[®] personality type instrument. Form M of the instrument was utilized. Part I consisted of 26 items asking preference to how one would behave. Part II consisted of 47 items asking one to select which one of two words is the most appealing. Part III consists of another 20 items similar to Part I. This form is a product of several previous forms preceding Form M and was constructed utilizing the item response theory. Much time was dedicated toward its validity and reliability as a personality type instrument.

Psychosocial assistance was measured by the MRQ developed originally by Greiman (2002) for beginning teachers and mentors, and later adapted for student teachers and cooperating teachers by Kitchel and Torres (in press). The instrument consisted of 15 items (three items per function) relating to the extent to student teacher perceived the cooperating teacher provided psychosocial assistance. A 7-point Likert-type scale was utilized with: 1 = not at all, 3 = some extent, 5 = large extent, and 7 = very large extent. A panel of experts reviewed the MRQ for face and content validity. A pilot test was conducted with alphas ranging from .93 to .99 for the parts of the MRQ, which were in the parameters established by Nunally (1967).

Data were collected from the student teachers during their final seminar, after the completion of the student teaching experience. Because data were collected by the researchers personally, the response rate was 100% ($n = 19$). Agricultural Education student teachers were in the field with their cooperating teacher for a 16-week period. Family and Consumer Sciences student teachers were also in the field for 16-weeks, but split their experiences into two 8-week experiences: one with a high school and one with a middle school. Family and Consumer Sciences student teachers completed one MRQ on their cooperating teacher with whom they had the best experience.

Data were analyzed based upon the objectives and the variable's level of measurement. For objective 1, data were analyzed by percents and frequencies. For objective 2, means scores and standard deviations were calculated by the two disciplines (Agricultural Education and Family and Consumer Sciences Education). Objective 3 was similarly analyzed by mean scores and standard deviations, but data were differentiated by the four MBTI[®] dichotomies.

Findings

Objective one described the personal characteristics of student teachers. Personal characteristics include MBTI[®] personality type, gender, and CTE discipline (Table 1). The most frequent personality types for the sample were ESTP, ENFP, and ESFJ with a frequency of 3 (15.79%) for each type. ESTP was the most frequent personality type by Agricultural Education (Ag Ed) student teachers ($n = 3$; 42.86%). For Family and Consumer Sciences (FCS Ed) Education student teachers, the most frequently reported personality type was ESFJ ($n = 3$; 25.00%). ISFP and ESTJ each had the least frequently reported personality type for the total group ($n = 1$; 5.26%), except for ISTP, ENTJ, ENTP, INTJ, INTP, INFJ, and INFP which were not reported at all. Ag Ed student teachers did not contain the ISFJ, ESFP, ESTJ, ESFJ, ISTP, ENTJ, ENTP, INTJ, INTP, INFJ, and INFP types. Similarly, the FCS Ed student teachers did not contain the ISFP, ESTP, ISTP, ENTJ, ENTP, INTJ, INTP, INFJ, and INFP types.

Gender was examined with females reported as most frequent ($n = 14$; 73.68%). Males were more frequent for agricultural education ($n = 5$; 71.23%), whereas females were reported for FCS education ($n = 12$, 100.00%). CTE discipline was also analyzed with 7 agricultural education students (36.84%) and 12 family and consumer sciences education students (63.16%).

Table 1
Personal Characteristics of Student Teachers

	Ag Ed	FCS Ed	Total
Characteristic	($n = 7$)	($n = 12$)	($n = 19$)

	Frequency	%	Frequency	%	Frequency	%
MBTI Type						
ISTJ	1	14.29	1	8.33	2	10.53
ISFJ	0	0.00	2	16.27	2	10.53
ISFP	1	14.29	0	0.00	1	5.26
ESTP	3	42.86	0	0.00	3	15.79
ESFP	0	0.00	2	16.27	2	10.53
ENFP	1	14.29	2	16.27	3	15.79
ESTJ	0	0.00	1	8.33	1	5.26
ESFJ	0	0.00	3	25.00	3	15.79
ENFJ	1	14.29	1	8.33	2	10.53
ISTP	0	0.00	0	0.00	0	0.00
ENTJ	0	0.00	0	0.00	0	0.00
ENTP	0	0.00	0	0.00	0	0.00
INTJ	0	0.00	0	0.00	0	0.00
INTP	0	0.00	0	0.00	0	0.00
INFJ	0	0.00	0	0.00	0	0.00
INFP	0	0.00	0	0.00	0	0.00
Total	7	100.00	12	100.00	19	100.00
Gender						
Male	5	71.43	0	0.00	5	33.33
Female	2	28.57	12	100.00	14	73.68
Total	7	100.00	12	100.00	19	100.00

The psychosocial assistance cooperating teachers provided student teachers were analyzed (Table 2). The acceptance function was reported as the largest extent provided by the sample ($M = 6.25$), and by the Ag Ed student teachers ($M = 6.14$). FCS Ed student teachers reported the psychosocial function of friendship as being provided to the largest extent ($M = 6.39$). Social was reported the lowest psychosocial assistance function provided from their cooperating teacher by Ag Ed student teachers ($M = 4.43$), FCS Ed student teachers ($M = 3.64$) and the sample ($M = 3.93$). With this function of social, the standard deviation indicates greater variances of respondents than the other psychosocial functions ($SD = 2.04$).

Table 2

Mean Scores of Psychosocial Assistance Cooperating Teachers Provided to Student Teachers by Discipline (Ag Ed or FCS Ed)

Function	Ag Ed (n = 7)		FCS Ed (n = 12)		Total (n = 19)	
	Mean	SD	Mean	SD	Mean	SD
Acceptance	6.14	.57	6.31	.57	6.25	.70
Counseling	6.05	.59	6.00	.83	6.02	.73
Friendship	6.00	.67	6.39	.91	6.25	.83
Role Model	5.71	.59	6.22	.99	6.04	.99
Social	4.43	1.65	3.64	2.25	3.93	2.04

Note. 1 = not at all, 3 = some extent, 5 = large extent, and 7 = very large extent

Objective three described differences in psychosocial support by personality type. The personality type dichotomies of E-I and S-N were analyzed by psychosocial support in Table 3, with differences of psychosocial support with T-F and J-P personality types described in Table 4.

Table 3

Mean Scores of Psychosocial Assistance Cooperating Teachers Provided to Student Teachers for the E-I Dichotomy and the S-N Dichotomy

Function	Extravert (n = 14)		Introvert (n = 5)		Sensing (n = 14)		Intuition (n = 5)	
	M	SD	M	SD	M	SD	M	SD
Acceptance	6.01	.73	6.67	.41	6.33	.70	6.00	.71
Counseling	5.85	.70	6.47	.69	6.05	.78	5.93	.64
Friendship	6.14	.86	6.53	.71	6.21	.89	6.33	.71
Role Model	5.79	1.03	6.73	.43	6.05	1.07	6.00	.85
Social	3.50	2.03	5.13	1.71	4.26	1.83	3.00	2.53

Note. 1 = not at all, 3 = some extent, 5 = large extent, and 7 = very large extent

Table 4

Mean Scores of Psychosocial Assistance Cooperating Teachers Provided to Student Teachers for the T-F Dichotomy and the J-P Dichotomy

Function	Thinking (n = 6)		Feeling (n = 13)		Judging (n = 10)		Perceiving (n = 9)	
	M	SD	M	SD	M	SD	M	SD
Acceptance	6.00	1.11	6.36	.58	6.33	.77	6.15	.65

Counseling	6.22	.62	5.92	.78	6.13	.77	5.89	.71
Friendship	5.94	.95	6.38	.77	6.30	.95	6.19	.73
Role Model	5.78	1.28	6.13	.87	6.13	1.06	5.93	.97
Social	4.78	1.39	3.54	2.22	3.87	2.23	4.00	1.94

Note. 1 = not at all, 3 = some extent, 5 = large extent, and 7 = very large extent

Student teachers who were more extraverted described their cooperating teacher providing the friendship function as being provided to the largest extent ($M = 6.14$). However, student teachers who were introverted identified the psychosocial function of role model as being provided to the largest extent ($M = 6.73$). More sensing student teacher described the psychosocial function of acceptance as being provided to the largest extent ($M = 6.33$), whereas student teachers who were more intuitive viewed the friendship psychosocial function as being provided to the largest extent ($M = 6.33$). The psychosocial function of social was described as the lowest extent by student teachers with extravert ($M = 3.50$), introvert ($M = 5.13$), sensing ($M = 4.26$), and intuition ($M = 3.00$) personality types. In each personality type, the greatest variance displayed was in the social psychosocial function for extravert ($SD = 2.03$), introvert ($SD = 1.71$), sensing ($SD = 1.83$), and intuition ($SD = 2.53$).

Student teachers who were more thinking described the psychosocial function of counseling as provided by their cooperating teacher to the largest extent ($M = 6.22$). However, feeling student teachers described the psychosocial function of friendship as being provided to the largest extent ($M = 6.38$). The more judging student teachers described the psychosocial function of acceptance as being provided to the largest extent ($M = 6.13$), whereas student teachers who were more perceiving viewed the friendship psychosocial function to the largest extent ($M = 6.19$). The psychosocial function of social was described as the lowest extent by student teachers with thinking ($M = 4.78$), feeling ($M = 3.54$), judging ($M = 3.87$), and perceiving ($M = 4.00$) personality types. Within the social psychosocial function, the greatest variance was in the thinking ($SD = 1.39$), feeling ($SD = 2.22$), judging ($SD = 2.23$), and perceiving ($SD = 1.94$) personality types.

The E-I dichotomy experiences the largest difference between the two opposite types of extraversion and introversion. When calculating the mean score of the differences between the opposites across the five function, the E-I dichotomy had a mean score of .85. This was followed by T-F ($M_{diff} = .54$), S-N ($M_{diff} = .38$), and J-P ($M_{diff} = .17$). The E-I dichotomy was the only dichotomy with the higher mean scores aligned with one of the opposites. For the E-I scale, all psychosocial function mean scores were higher for introverts than extraverts.

Conclusions, Implications and Recommendations

CTE student teachers mostly possessed the MBTI[®] personality types ESTP, ENFP, and ESFJ. Agricultural Education (Ag Ed) student teachers were ESTP, whereas Family and Consumer Sciences Education (FCS Ed) student teachers were ESFJ, ISFJ, ESFP, and ENFP. Ag Ed student teachers were male, FCS Ed student teachers were female, and overall, CTE student teachers were female. The implications are that there are some variances in personality

type and gender across disciplines. FCS Ed student teachers were more feeling, whereas Ag Ed student teachers are more thinking. The findings of the FCS Ed student teachers are aligned with the feeling preference by teachers and educators in general (Myers, et al., 2003). The findings of the Ag Ed students are consistent with Kitchel and Cano (2001) who posit that the preference toward thinking is due to the agricultural context. Therefore, it is recommended that teacher educators and cooperating teachers be aware of the discipline differences and adjust teaching and mentoring to match the personality type of the student teacher.

Both Ag Ed and FCS Ed student teachers perceive they are receiving psychosocial assistance from their cooperating teachers. This is consistent with the findings of Kitchel and Torres (in press). Acceptance was perceived to be the psychosocial assistance provided by cooperating teachers to their student teachers for the CTE group as a whole and for Ag Ed. FCS Ed cooperating teachers were perceived to have provided the psychosocial function of friendship to the student teachers.

Social was the lowest psychosocial assistance function provided from their cooperating teacher by Ag Ed student teachers, FCS Ed student teachers, and the sample. With this social function, greater variances of respondents than the other psychosocial functions exist. Again, this is consistent with Kitchel and Torres (in press) who suggest that this function either be fully expected of cooperating teachers or dropped due to the amount of time a student teacher is expected to be with their cooperating teacher. However, taking into account the variance, and now consistency of findings in three Ag Ed institutions and now in a different discipline, perhaps it would be wise to take into account the different social needs of each student teachers separately.

Student teachers who were more extraverted described their cooperating teacher as having provided friendship function the most, however, student teachers who were introverted identified their cooperating teacher as having provided the role model function the most. More sensing student teachers described acceptance as the psychosocial function being provided the most, whereas student teachers who were more intuitive viewed the friendship psychosocial function being provided the most. Counseling was perceived to have been provided to the largest extent by thinking student teachers; for feeling student teachers it was the friendship function. Judging student teachers viewed the acceptance function to have been provided to the largest extent; for perceiving student teacher it was the friendship function.

This implies that different types perceived the functions differently. However, most differences in the function mean scores, between the opposites of the dichotomies, were not large except for the differences between extraversion and introversion in the E-I dichotomy. This was also the only dichotomy where one end of the opposite, introversion, had higher mean scores than the other end, extraversion. According to Myers, et al. (2003), the E-I dichotomy focuses on orientations of energy, where extraverts tend to focus on the “outer world of people and objects” (p. 6), introverts tend to focus on the “inner world of experience and ideas.” (p. 6). Why would introverts perceive that their cooperating teacher provided psychosocial assistance more than extraverts, if it is in the nature of an introvert to focus on the internal versus the external? Perhaps one reason may be that extraverts, who attend to the outer world, expected more from the cooperating teacher. Teacher educators and cooperating teachers are recommended to pay

attention to these differences in their student teachers. Cooperating teachers may have to pay attention more to their extraverted student teachers than their introverted student teachers.

The social psychosocial function was viewed to have been provided to the least extent by student teachers by extravert, introvert, sensing, intuition, thinking, feeling, judging, and perceiving student teachers. This implies that no matter the personality type lens that student teachers perceived this function to be provided to the least extent. Again, it is recommended to expect this function from cooperating teachers, drop the function as an expectation or utilize this function on a case-by-case basis.

Recommendations for Further Study

Data should be collected from the Family and Consumer Sciences student teachers regarding both cooperating teachers. In this study, student teachers were asked to complete the MRQ regarding their cooperating teacher with whom they had the best experience. This may provide insight as to differences in school level or reveal patterns of satisfaction or dissatisfaction regarding psychosocial assistance.

This study should be replicated at the same institution to increase the sample size. Once the sample size increases, other statistical tools may be in order to analyze the data. For this study, caution was taken due to the lower sample size. It is also recommended to conduct a qualitative study to uncover potential reasons behind the E-I differences. An in depth qualitative study may provide more depth behind the extraverts and introverts perception.

This study should continue to be replicated at the other institutions to determine if differences exist. Although there was a smaller sample size in the current study versus the Kitchel and Torres (in press) study, there is some evidence to suggest that personality type differences exist. Other institutions may deliver similar or refuting results.

Benefits and barriers to the student teacher-cooperating teacher relationship should also be studied. Differences exist between the two disciplines and among personality types. The positives and negatives to the relationship might also differ. These benefits and barriers may provide teacher educators concrete knowledge that can assist them in adjusting their student teaching experience in favor of strengthening the student teacher-cooperating teacher interaction.

REFERENCES

- Cruickshank, D. R. (1990). *Research that informs teachers and teacher educators*. Bloomington, IN: Phi Delta Kappa Educational Foundation.
- Deeds, J. P., Flowers, J., & Arrington, L. R. (1991). Cooperating teacher attitudes and opinions regarding agricultural education student teaching expectations and policies. *Journal of Agricultural Education*, 32(2), 2-9.
- Edwards, M. C., & Briers, G. E. (2001). Cooperating teachers' perceptions of important elements of the student teaching experience: A focus group approach with quantitative follow-up. *Journal of Agricultural Education*, 42(3), 30-41.

- Fairhurst, A. M., & Fairhurst, L. L. (1995). *Effective teaching, effective learning*. Palo Alto, CA: Davies-Black Publishing.
- Garton, B. L., & Cano, J. (1996). The relationship between cooperating teachers' and student teachers' use of the problem-solving approach to teaching. *Journal of Agricultural Education*, 37(1), 48-55.
- Greiman, B. C. (2002). *Providing professional and psychosocial assistance for beginning agriculture teachers: The perceptions of formal mentors and novice teachers*. Unpublished doctoral dissertation, University of Missouri-Columbia.
- Hall, D. T. (Ed.). (1986). *Mentoring in the workplace*. San Francisco: Jossey-Bass, Inc.
- Hammer, A. L. (1993). *Introduction to type and careers*. Palo Alto, CA: Consulting Psychologists Press, Inc.
- Harlin, J. F., Edwards, M. C., & Briers, G. E. (2002). A comparison of student teachers' perceptions of important elements of the student teaching experience before and after an 11-week field experience. *Journal of Agricultural Education*, 43(3), 72-83.
- Hirsch, S. K. (1992). *MBTI team building program*. Palo Alto, CA: Consulting Psychologists Press, Inc.
- Jung, C. G. (1971). *Psychological types*. Princeton, NJ: Princeton University Press.
- Kitchel, T., & Cano, J. (2001). The relationship between learning style and personality type of students majoring and minoring in agricultural education at The Ohio State University. *Proceedings of the 55th Central States Agricultural Education Research Conference*. St. Louis, MO. 142-153.
- Kitchel, T., & Torres, R. M. (in press). The influence of personality type on the extent cooperating teachers provide psychosocial assistance to student teachers. *Journal of Agricultural Education*.
- Kitchel, T., & Torres, R. M. (2005). Similarity, satisfaction and personality type as factors in matching student teachers with cooperating teachers. *Proceedings of the 2006 National Agricultural Education Research Conference*. Charlotte, NC.
- Knobloch, N. A., & Whittington, M. S. (2002). Novice teachers' perceptions of support, teacher preparation quality, and student teaching experience related to teacher efficacy. *Journal of Vocational Education Research*, 27(3), 331-341.
- Kram, K. E. (1985). *Mentoring at work*. Boston: Scott, Foresman and Company.
- Lemma, P. (1993). The cooperating teacher as supervisor: A case study. *Journal of Curriculum and Supervision* 8, 329-342.

- Montgomery, B. (2000). The student and cooperating teacher relationship [Electronic version]. *Journal of Family and Consumer Sciences Education*, 18(2), 7-15.
- Myers, I. B., McCaulley, M. H., Quenk, N. L., & Hammer, A. L. (2003). Manual: A guide to the development and use of the Myers-Briggs Type Indicator – third edition. Palo Alto, CA: Consulting Psychologists Press, Inc.
- Myers, I. B., & Myers, P. B. (1995). *Gifts differing*. Palo Alto, CA: Davies-Black Publishing.
- Nardi, D. (2001). *Multiple intelligences and personality type*. Huntington Beach, CA: Telos Publications.
- Norris, R. J., Larke, A. Jr., & Briers, G. E. (1990). Selection of student teaching centers and cooperating teachers in agriculture and expectations of teacher educators regarding these components of a teacher education program: A national study. *Journal of Agricultural Education*, 31(1), 58-63.
- Nunnally, J. C. (1967). *Psychometric theory*. New York: McGraw Hill.
- Peiter, R. L., Terry, R. Jr., & Cartmell II, D. D. (2005). Mentoring first year agricultural educators: Examining a state-mandated induction program. *Journal of Agricultural Education*, 52(1), 11-19.
- Posner, G. J. (2000). *Field experience: A guide to reflective teaching*. New York: Addison Wesley Longman.
- Provost, J. A., & Anchors, S. (1987). *Applications of the Myers-Briggs Type Indicator in higher education*. Palo Alto, CA: Davies-Black Publishing.
- Roe, B. D., & Ross, E. P. (1994). *Student teaching and field experience handbook*. New York: Macmillan Publishing Company.
- Schumacher, L. G., & Johnson, D. M. (1990). Time series analysis of agricultural education student teachers' perceptions of agricultural mechanics lab management competencies. *Journal of Agricultural Education*, 31(4), 2-8.
- Schwebel, A.I, Schwebel, B. L., Schwebel, C.R., & Schwebel, M. (1996). *The student teacher's handbook*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Weasmer, J., & Woods, A. M. (2003). The role of the host teacher in the student teaching experience [Electronic version]. *The Clearing House*, 76, 174-177.