A Comparison of Student Teachers' Perceptions of Important Elements of the Student Teaching Experience Before and After Completing an 11-week Field Experience

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Abstract

Two purposes of this study were to describe selected characteristics of student teachers and their cooperating student teaching centers, and to identify student teachers' perceptions about important elements of the student teaching experience before and after its occurrence. Thirty-six student teachers who completed a 11-week field experience at 33 different cooperating centers during the 2000-2001 academic year provided the responses for this study. The questionnaire items were divided into five "core" areas of the student teaching experience based on a review of literature. Thirty-four elements were identified by cooperating teachers as being "important." Student teachers rated the elements using a Likert-type rating scale ("5" = "High Importance,"… "1" = "No Importance"). The return rate was 100%. Cronbach's coefficient alpha reliability estimates for the five core areas ranged from .72 to .95 for the "pretest" and from .69 to .90 for the "posttest." The overall importance scale of 34 items yielded estimates of .96 and .89, respectively. Students recognized the importance of the "Cooperating Teacher-Student Teacher Relationship" both before and after the field experience component of student teaching. All elements were rated as important by student teachers, suggesting that the student teachers' espoused theory of action was congruent with and led to their theory-in-use.

Introduction/Theoretical Base

Researchers have argued that the student teaching experience plays a significant role in the formation of attitudes and perceptions of preservice teachers regarding their roles and responsibilities as future practitioners. This postulate also includes those individuals who aspire to be agriculture teachers (Briers & Byler, 1979; Byler & Byler, 1984; Schumacher & Johnson, 1990; Schumann, 1969). Further, investigators (Deeds, 1993; Deeds, Arrington, & Flowers, 1988; Garton & Cano, 1994; Martin & Yoder, 1985; Norris, Larke, & Briers, 1990) have opined that for prospective agriculture teachers the cooperating teacher and the cooperating student teaching center are two of the most significant components of the student teaching experience.

DeMoulin (1993) stated that a cooperating teacher should "foster unique teaching concepts and…give support and encouragement to preservice teachers" (p. 160). To this end, Garton and Cano (1994) contended that cooperating teachers should be selected who demonstrated the "desired teaching behaviors expected of [agriculture] student teachers" (p. 213). In support, Martin and Yoder (1985) opined that an agriculture student teacher's "success" during their field experience hinged "on the general supervisory climate in the department and on the educational leadership abilities of the cooperating teacher" (p. 21).

Moreover, Deeds and Barrick (1986) and Byler and Byler (1984) found that the behaviors of agriculture cooperating teachers and programmatic qualities of cooperating centers, to the extent that they demonstrated or exemplified positive attitudes and morale, did positively influence the perceptions of preservice teachers about the agriculture teaching profession. Further, Edwards and Briers (2000) have reported the perceptions of agriculture cooperating teachers about important elements of the student teaching experience. (These were teachers and centers used by the Department of Agricultural Education, Texas A&M University.) The researchers recommended that student teachers should be surveyed using a similar instrument. They asserted that armed with a "'greater' understanding of both groups' perceptions, teacher educators can [could] design and implement preservice learning activities to address any incongruence that might be a limiting factor preventing development of an effective cooperating teacher-student teacher relationship" (p. 567).

In explaining the assumptions that undergird how humans integrate thought and action, i.e., deliberate human behaviors, Argyris and Schön (1989) postulated that an individual's "theoretical" explanation about how he or she would respond (behave) under a given set of conditions is that person's "espoused theory of action" (p. 6) for that particular circumstance. Moreover, "the theory that actually governs his [or her] actions is his [or her] theory-in-use" (p. 6), that is, the unfolding of one's actual behaviors for a given situation (Figure 1). In addition, these researchers stated that "skills are dimensions of the ability to behave effectively in situations of action" (p. 12), and that one's "theory of action has not been learned in the most important sense unless it can be put into practice" (p. 12). For example, these behaviors could include the skills and practices associated with teaching that a preservice teacher would exercise during the student teaching experience.

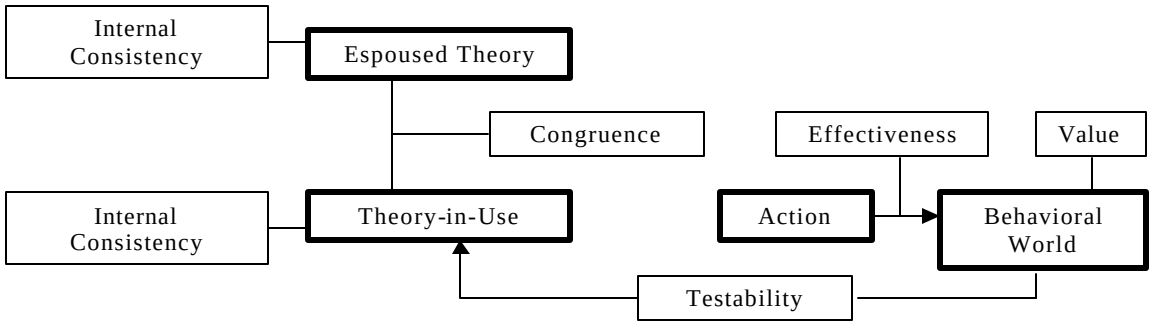

Figure 1. Espoused theory versus theory-in-use (taken from Argyris and Schön, p. 21).

Further, Argyris and Schön hypothesized that each person lives in a behavioral world of his [or her] own—a world made up of his [or her] own behavior in interaction with the behavior of others. Each person's behavioral world is therefore artificial not only in the sense that it consists of artifacts of human convention but in the sense that it is shaped and influenced by one's own action and by one's theories of the behavioral world as they influence action. (p. 17)

Concomitantly, Willis (1991) argued that "perceiving precedes making meaning or acting" (p. 175), and thus as circumstances (experiences) change so too may one's perception of their "behavioral world." Similarly, Kolb's learning cycle posits that experience holds the potential for transforming one's worldview, and therefore frequently dictates the individual's selection of new experiences (Miller, 1999, n.p. #).

Finally, Korthagen and Kessels (1999) contended that student teachers need "knowledge that is situation-specific and related to the context in which they meet a problem or develop a need or concern, knowledge that brings their already existing, subjective perception of personally relevant classroom situations one step further" (p. 7). These researchers also emphasized the importance of "level reduction" (pp. 10 & 12). That is, the role of experience ("concreteness") as it relates to the formation of accurate "Gestalts" or cognitive "schemas" (Figure 2) that are necessary for student teachers to understand, interpret, and synthesize their immediate contexts and related behaviors—their "subjective theories" (p. 12).

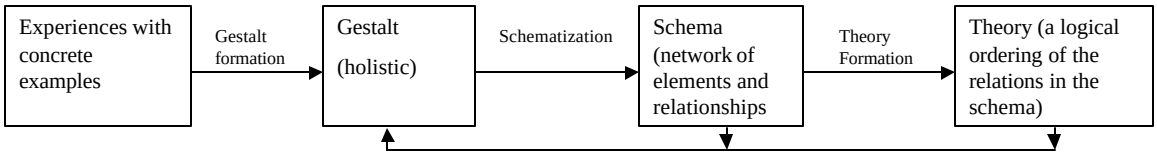

Figure 2. Levels in the process of learning with regard to a certain domain (taken from Korthagen and Kessels, p. 10).

Purposes and Research Questions

Two purposes of this study were to describe selected characteristics of student teachers and their cooperating student teaching centers (schools) and to identify what student teachers perceived to be important elements of the student teaching experience before and after completing an 11-week field experience.

Five specific research questions guided the study: 1) What were selected personal and professional characteristics of student teachers from the Department of Agricultural Education, Texas A&M University, during the 2000-2001 academic year? 2) What were selected characteristics of cooperating student teaching centers used by the Department of Agricultural Education, Texas A&M University, during the 2000-2001 academic year? 3) What did student teachers perceive to be important elements of the student teaching experience before completing an 11-week field experience? 4) What did student teachers perceive to be important elements of the student teaching experience after completing an 11-week field experience? 5) Were student teachers' perceptions of the important elements of the student teaching experience significantly different following completion of an 11-week field experience compared to their perceptions before the field experience?

Methods and Procedures

This was a descriptive study to determine selected characteristics of student teachers and their cooperating centers and to identify student teachers' perceptions of the important elements

of the student teaching experience before and after completing an 11-week field experience. In 1998, the Department of Agricultural Education at Texas A&M University hosted an agriculture cooperating teacher workshop. A portion of the workshop included a focus group exercise to determine cooperating teachers' perceptions of the "important elements" of the student teaching experience. The participants included teachers and schools that had either served as cooperating student teaching centers during the previous three years or were future placement sites. Prior to the workshop, the teachers were divided into five different focus groups of seven members each. Each of the five focus groups represented a "core" component (area) of the student teaching experience as identified by a review of literature (Briers & Edwards, 1998; Claycomb & Petty, 1983; Edwards & Briers, 1998; Larke, Norris, & Briers, 1992; Martin & Yoder, 1985) and by teacher education faculty in the Department of Agricultural Education at Texas A&M University. The five core areas were classroom and laboratory instruction, supervised agricultural experience programs (SAEPs), student leadership development (FFA), school and community relationships, and cooperating teacher-student teacher relationships. The teachers identified 34 elements of the student teaching experience as being "important."

Further, in an effort to "confirm" these findings, the 34 important elements (items) were included in a mail questionnaire sent to the cooperating teachers following the workshop. The instrument was divided into five "core" areas of the student teaching experience and included the 34 "important elements": classroom and laboratory instruction (5 items), supervised agricultural experience programs (SAEPs) (4 items), student leadership development (FFA) (7 items), school and community relationships (9 items), and cooperating teacher-student teacher relationships (9 items). The teachers were asked to "rate" the "level of importance" of the elements (Edwards & Briers, 2000). Cooperating teachers perceived all of the items to be either "much" or "high" in importance" ($\underline{M} \geq 4.00$); the overall mean was 4.54. Cronbach's coefficient alpha reliability estimate for the overall importance scale was .91.

For the purpose of this study, the 34 important elements (items) comprised one part of a questionnaire administered to student teachers to identify their perceptions of "level of importance" of these elements of the student teaching experience, before and after their completion of an 11-week field experience. The student teachers were asked to rate the "level of importance" of the elements using a Likert-type rating scale ("5" = "High Importance," "4" = "Much Importance," "3" = "Some Importance," "2" = "Low Importance," and "1" = "No Importance"). Cronbach's coefficient alpha reliability estimates for the five core areas ranged from .72 to .95 for the "pretest" and from .69 to .90 for the "posttest." The overall importance scale of 34 items yielded estimates of .96 and .89, respectively. The second part of the instrument included 22 questions describing selected personal and professional characteristics of the student teachers, and selected characteristics of their cooperating student teaching centers.

The data were collected at two points during the student teaching semester. First, data were collected at the conclusion of the four-week on-campus portion of student teaching. Data were again collected at the conclusion of the eleven-week off-campus field experience. Responses were recorded on scan sheets, coded for respondent, semester, and pre and posttest. Scan sheets were then optically scanned and analyzed using the Statistical Package for the Social Sciences v. 9.0. Pre and post responses were paired for comparison purposes. Research questions one through four were analyzed descriptively with frequencies, percentages, means,

and standard deviations. Research question five was analyzed using paired sample t-tests using a recurring measure (pre and post test). A 100% response rate was achieved.

Results/Findings

As shown in Table 1, the student teachers who participated in this study were almost evenly split between male (19) and female (17); only three of the 36 respondents were earning

Table 1

Selected Characteristics of Student Teachers (N=36)

Characteristics	Frequency	Percentage
Gender		
Male	19	52.8
Female	17	47.2
Highest Degree After Student Teaching		
Bachelor's	33	91.7
Master's	3	8.3
Plans to Obtain Teacher Certification in Other Areas		
No	13	36.1
Yes, in biology	4	11.1
Yes, in life-earth science	1	2.8
Yes, in composite science	9	25.0
Yes, in fields other than those above	9	25.0
Interested in a Graduate Degree		
Definitely not	0	0.0
Probably not	3	8.3
Unsure	9	25.0
Probably yes	12	33.3
Definitely yes	12	33.3
Years Expected to Teach Agriscience		
I do not plan to teach agriscience	7	19.4
1 to 2 years	2	5.6
3 to 5 years	6	16.7
6 to 10 years	8	22.2
11 or more years	13	36.1
In What Size School Do You Hope to Teach		
779 students or fewer	18	50.0
780 students or more	16	44.5
Other, e.g. magnet or career center	2	5.6
Value of IMS Materials to Preparation		
No Value	0	0.0
Limited Value	10	27.8
Average Value	14	38.9
Much Value	11	30.6
Great Value	1	2.8

(table continues)

Characteristics	Frequency	Percentage
Need for New Instructional Materials		
No need	0	0.0
Little need	1	2.8
Some need	14	38.9
Much need	10	27.8
Great need	11	30.6
Value of Distance Technologies		
Not valuable	1	2.8
Limited value	7	19.4
Average value	4	11.1
Valuable	17	47.2
Very valuable	7	19.4
Ability to Integrate Distance Technology		
Not competent	4	11.1
Somewhat competent	4	11.1
Uncertain	13	36.1
Competent	13	36.1
Highly competent	2	5.6

master's degrees while the remainder were earning bachelor's degrees. Over one-third (13) of the student teachers planned to earn certification only in agricultural science. The remainder planned to pursue certification in some other field. Moreover, two-thirds reported an interest in pursuing graduate studies. Four-fifths (80.6%) of the student teachers indicated that they would teach agricultural science for one or more years.

Thirty-five of the 36 student teachers reported "some…," "much…," or "great need" for the development of new instructional materials. Two-thirds of the respondents indicated that distance education technologies were either "valuable" (17) or "very valuable" (7) instructional tools for agricultural education. However, a majority of respondents expressed that they were either "uncertain" about their ability to integrate distance technologies (13) or that they lacked the sufficient competence (8) to do so (Table 1).

When describing their school settings (Table 2), 28 of the 36 respondents reported student teaching in a school of 780 students or larger. (This school size benchmark is a widely recognized point of demarcation between "large" and "small" high schools in Texas.) Three-fourths (27) reported either two or three classrooms comprised their cooperating center facility. With regard to laboratory facilities, a majority had access to agricultural mechanics facilities (35), greenhouses (20), and project centers (22). However, a large majority reported not having access to meats (31), aquaculture (28), or land (27) laboratories.

A majority of respondents indicated that they had access to email (33) and the World Wide Web (34) in their cooperating agricultural department; however, student access to the World Wide Web (17) was less common. Too, eight student teachers did report that there were computer labs for student use located in their center's facility (Table 2).

Table 2

Selected Characteristics of Cooperating Student Teaching Centers (N=36)[a]

Characteristics	Frequency	Percentage
School		
Campus Size		
779 students or fewer	8	22.2
780 students or more	28	77.8
Agriscience Department		
Number of Classrooms		
1	1	2.8
2	15	41.7
3	12	33.3
4 or more	8	22.2
Ag Mech Laboratory		
Yes	35	97.2
No	1	2.8
Greenhouse		
Yes	20	55.6
No	16	44.4
Horticulture Facility (Not a Greenhouse)		
Yes	18	50
No	18	50
Meats Laboratory		
Yes	5	13.9
No	31	86.1
Aquaculture Facility		
Yes	8	22.2
No	28	77.8
Land Laboratory		
Yes	9	25.0
No	27	75.0
Project Center/Feeding Facility		
Yes	22	61.1
No	14	38.9
Email Access at Cooperating Center		
No access	1	2.8
No access in department	2	5.6
Access in department	33	91.7
Access to World Wide Web		
No access	1	2.8
No access in department	1	2.8
Access in department	34	94.4
Student Access to Technology		
No access	2	5.6
Access outside the facility	5	13.9
Access to computers, no www	4	11.1
Access to computers with www	17	47.2
Facility includes a computer lab	8	22.2

[a] Table represents the settings of 36 different student teachers in 33 cooperating centers.

The 34 "important elements" of the student teaching experience were rated by student teachers on level of importance ("5" = "High Importance"…"1" = "No Importance") via a questionnaire (Table 3). The overall pretest and posttest means were 4.47 and 4.39, respectively, or approaching midway between "much" and "high importance." In the pretest, the two highest rated elements were "A cooperating teacher who is willing to be a mentor" and "A cooperating teacher who communicates clear expectations" (4.77), followed by "A discipline management plan used in a structured environment" (4.75). Lowest rated elements in the pretest included

Table 3

Student Teachers' Perceptions of the Important Elements of the Student Teaching Experience Before and After Completing an 11-week Field Experience (N=36)

Elements[a]	PreTest		PostTest	
	M[b]	SD	M[b]	SD
Classroom and Laboratory Instruction				
Daily (systematic) classroom and/or laboratory instruction	4.56	.65	4.39	.73
A discipline management plan used in a structured environment	4.75	.50	4.44	.50
Current technology used in instruction	4.08	.91	4.17	1.00
Creative teaching methods as a basis for daily instruction, e.g., use of multimedia and varied teaching techniques	4.39	.84	4.22	.93
A well-rounded program emphasizing instruction, SAEs, and youth leadership activities	4.69	.58	4.78	.49
Composite Mean[c]	4.49	.47	4.40	.52
Supervised Agricultural Experience Programs				
All students meeting state SAEP requirements, with accurate record books	4.40	.65	3.89	1.08
Diversity within the students' SAEPs	4.06	.79	3.89	.98
Project supervision and an explanation of this commitment to the student teacher	4.47	.56	4.00	1.04
Student participation in advanced awards and degrees on district, area, state and national levels	4.31	.67	4.22	.96
Composite Mean[c]	4.31	.49	3.98	.85
Student Leadership Development (FFA activities)				
Strong classroom instruction in leadership development	4.36	.80	4.44	.61
These activities as essentials for a balanced program	4.31	.62	4.39	.62
A history of successful participation	4.00	1.01	4.14	.90
Cooperating teachers who are familiar with current rules for participation in events (e.g., CDEs and LDEs)	4.50	.74	4.53	.84
Cooperating teachers who delegate the training of at least one team to the student teacher	4.36	.72	4.36	.76
Resources available to train a competitive team	4.44	.61	4.58	.65
Opportunities for the student teacher to judge or monitor a district or area Leadership Development Event (LDE)	4.17	1.03	4.25	.81
Composite Mean[c]	4.13	.58	4.39	.51

(table continues)

Elements[a]	PreTest		PostTest	
School and Community Relationships				
Recognized integrity of the cooperating teacher and program	4.54	.70	4.66	.59
Departmental support organization(s) (e.g., advisory committees, booster clubs, and Alumni)	4.34	.76	4.54	.56
A cooperating teacher who supports other school activities (e.g., sports banquets)	4.47	.70	4.25	.77
A cooperating teacher who supports activities in the community (e.g., service organizations)	4.47	.70	4.36	.64
A spirit of professional cooperation among fellow teachers	4.57	.56	4.54	.61
Use of local media	4.09	1.01	4.14	.69
School administrators who are involved in program activities	4.49	.78	4.57	.61
Community service projects	4.43	.61	4.26	.70
Availability of facilities (e.g., computer lab, shops, horticultural lab, school farm)	4.57	.66	4.49	.74
Composite Mean[c]	4.44	.56	4.43	.48
Cooperating Teacher-Student Teacher Relationships				
A cooperating teacher who is willing to be a mentor	4.77	.43	4.67	.76
A student teacher who is willing to be mentored by the cooperating teacher	4.69	.53	4.72	.66
A cooperating teacher who has a positive attitude	4.74	.61	4.69	.62
A cooperating teacher who is a "good" role model	4.69	.58	4.56	.84
A cooperating teacher who communicates clear expectations to the student teacher (e.g., role in the classroom and calendar of events)	4.77	.43	4.64	.64
A cooperating teacher who provides frequent evaluations and feedback to the student teacher	4.69	.53	4.50	.81
Discipline policies that are in place and enforced	4.69	.53	4.48	.94
"Reinforcement" techniques in teaching (e.g., pace, reteaching, retesting, and accommodation of various learning styles)	4.63	.60	4.42	.97
Assistance in job placement	4.40	.85	4.33	.96
Composite Mean[c]	4.67	.46	4.56	.60
Overall Mean	4.47	.41	4.39	.39

[a]Important elements were determined by cooperating teacher focus groups and reflect the "language" of those groups. [b]5 = High Importance…1 = No Importance. [c]Composite mean of elements for that core area.

"Diversity within students' SAEPs" (4.06) and "A history of successful participation" (4.00). In the posttest, the highest rated elements included "A well-rounded program emphasizing instruction, SAEs, and youth leadership activities" (4.78) and "A student teacher who is willing to be mentored by the cooperating teacher" (4.72). Lowest rated elements included "All students meeting state SAEP requirements with accurate recordbooks" and "Diversity within students' SAEPs" (3.89).

The elements were grouped conceptually into five "core" areas, and a "composite" mean was computed for each area. The highest rated core area both pre and posttest was "Cooperating Teacher-Student Teacher Relationships" (4.67 and 4.56, respectively). Ranked core areas for the pretest resulted in "Classroom and Laboratory Instruction" (4.49) ranked second, "School and

Community Relationships" (4.44) ranked third, and "Supervised Agricultural Experience" along with "Student Leadership Development" tied for fourth and fifth (4.31). The posttest resulted in similar findings with "School and Community Relationships" (4.43) ranked second, "Classroom and Laboratory Instruction" (4.40) ranked third, "Student Leadership Development" (4.39) ranked fourth, and "Supervised Agricultural Experience Programs" (3.98) ranked fifth.

Conclusions, Implications, and Recommendations

Student teachers were almost equally divided by gender, and more than half were interested in either beginning or advancing in graduate study. Most planned to teach agriscience after completing their student teaching experience. Though student teachers considered distance education technologies valuable, they were uncertain of their ability to integrate these technologies into instruction. Cooperating student teaching centers used by the Department of Agricultural Education at Texas A&M University were predominantly large, with high schools having more than 780 students and agriscience departments having more than two classrooms that were well-equipped with Internet and email access.

Student teachers recognized the importance of the cooperating teacher-student teacher relationship both before and after the field experience component of student teaching. Other researchers have supported this conclusion (Martin & Yoder, 1985). Though all elements were rated as important by student teachers, negative change was seen for the importance of "Supervised Agricultural Experience Programs" and "Classroom and Laboratory Instruction."

The perceptions of student teachers about the important elements of the student teaching experience, although while remaining important, declined in all core areas following completion of their 11-week field experience. This may mean that after experiencing the "the real-time conditions" of teaching and having had opportunities to create and test various "ad hoc theories" (e.g., methods of instruction), the "espoused theories" held by student teachers changed and thus their perceptions have now moved more closely to a realistic and "tested" theory of practice or action (Argyris & Schön, 1989). Further, these changes in perception may have been produced by the "level reduction" or coalescence of "subjective" and "objective" theories described by Korthagen and Kessels (1999). Accordingly, if these are valid suppositions and the constructs on which student teachers' perceptions were assessed are supported by the literature as well as the perceptions of other key actors (i.e., cooperating teachers), then this may be further evidence that supports the need for the "concrete" experiences afforded by student teaching, ones that assist novice teachers in "formalizing" their professional behaviors.

Recommendations for practice and future research follow: 1) Responses of student teachers should be compared to those of cooperating teachers to examine where differences in their perceptions occur. These differences could serve as additional research foci. Further, with a "greater" understanding of both groups' perceptions, teacher educators could design and implement preservice learning activities to address any incongruence that might be a limiting factor preventing development of an effective cooperating teacher-student teacher relationship (Martin & Yoder, 1985). 2) Because the items for the survey were generated primarily during focus groups of cooperating teachers, student teachers should be assessed using qualitative techniques to determine if they identify additional items of importance. 3) Further, because all

items on this instrument were rated as "important" (high or much importance) by student teachers, one should examine current practices in student teaching to determine if there are aspects that may be unimportant to the experience or issues that could be addressed in alternative settings such as through early field-based experience. 4) Other researchers (Dyer & Osborne, 1995) found that agriculture teachers were ambivalent with respect to the role of SAEs in agricultural education. In this study, after participating in a field experience and being exposed to related behaviors of their cooperating teachers, student teachers' perceptions about important elements of SAEs declined (Table 3). Moreover, perhaps most troubling was the negative change that occurred regarding the element of "diversity" as it pertained to SAEs. This downward "adjustment" in perception, about a "fundamental" component of agricultural education, warrants additional study.

References

Argyris, C., & Schön, D.A. (1989). Theory in practice: Increasing professional effectiveness. San Francisco, CA: Jossey-Bass Inc.

Briers, G.E., & Byler, B. L. (1979). Morale of student teachers in agricultural education at Iowa State University. The Journal of the American Association of Teacher Educators in Agriculture, 20(3), 41-51.

Briers, G. E., & Edwards, M. C. (1998). Assessing inservice needs of entry-phase agriculture teachers in Texas. Proceedings of the Seventeenth Annual Western Agricultural Education Research Meeting, XVII, 127-138.

Byler, B. L., & Byler, L. F. (1984). Analysis of student teacher morale before and after student teaching. The Journal of the American Association of Teacher Educators in Agriculture, 25(3), 22-28.

Claycomb, D. M., & Petty, G. C. (1983). A three year longitudinal study of the perceived needs for assistance as ranked by vocational agriculture instructors. The Journal of the American Association of Teacher Educators in Agriculture, 24(4), 28-33.

Deeds, J. P. (1993). A national study of student teaching requirements in agricultural education. Proceedings of the National Agricultural Education Research Meeting, 20, 219-225.

Deeds, J. P., Arrington, L. R., & Flowers, J. L. (1988). Cooperating teacher attitudes regarding cooperating teachers and student teaching experience expectations in vocational agriculture in three states. Proceedings of the Thirty-Seventh Annual Southern Region Research Conference in Agricultural Education, Group 2, Paper 2.

Deeds, J. P., & Barrick, R. K. (1986). Relationships between attitudes of pre-service agricultural education majors and variables related to early field-based experience. The Journal of the American Association of Teacher Educators in Agriculture, 27(3), 2-7.

DeMoulin, D. F. (1993). Efficacy and educational effectiveness. In J. R. Hoyle & D. M. Estes (Eds.), NCPEA: In a new voice (pp. 155-167). Lancaster, PA: Technomic Publishing Company, Inc.

Dyer, J.E., & Osborne, E.W. (1995). Participation in supervised agricultural experience programs: A synthesis of research. Journal of Agricultural Education, 36(1), 6-14.

Edwards, M. C., & Briers, G. E. (1998). Assessing the inservice needs of entry-phase agriculture teachers in Texas: A discrepancy model versus direct assessment. Proceedings of the 25th National Agricultural Education Research Meeting, 25, 322-332.

Edwards, M. C., & Briers, G. E. (2000). Cooperating teachers' perceptions of important elements of the student teaching experience: A focus group approach with quantitative follow-up. Retrieved from Proceedings of the 27th Annual National Agricultural Education Research Conference (National Agricultural Education Research Conference, CD-ROM, Winter 2000 release)

Garton, B. L., & Cano, J. (1994). The influence of the cooperating teacher on the student teacher's use of the problem-solving approach to teaching. Proceedings of the 21st Annual National Agricultural Education Research Meeting, 21, 209-214.

Korthagen, F. A. J., & Kessels, J. P. A. (1999). Linking theory and practice: Changing the pedagogy of teacher education. Educational Researcher, 28(4), 4-17.

Larke Jr., A., Norris, R. J., & Briers, G. E. (1992). A three-year national study of teacher educator, supervising teacher, and student teacher perceptions concerning the selection of student teaching centers and supervising (cooperating) teachers in agriculture. Proceedings of the National Agricultural Education Research Meeting, 19, 204-210.

Martin, R. A., & Yoder, E. P. (1985). Clinical teaching analysis: A procedure for supervising teachers. The Journal of the American Association of Teacher Educators in Agriculture, 26(4), 16-21, 33.

Miller, L.E. (1999). Revisiting experiential learning: Basis for study tours/study abroad programs. 1999 Conference Proceedings 15th Annual Conference 21, 22, 23, 24 March, 1999 Port of Spain, Trinidad 25, 26 March, 1999 Tobago, Association for International Agricultural and Extension Education, Session G, Paper 1.

Norris, R. J., Larke, Jr., A., & 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.

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.

Schumann, H. B. (1969, January). The cooperating teacher's role in student teaching. The Agricultural Education Magazine, 41(7), 156.

Willis, G. (1991). Phenomenological inquiry: Life-world perceptions. In E. C. Short (Ed.), Forms of Curriculum Inquiry (pp.173-186). Albany, NY: State University of New York Press.