

MORALE OF STUDENT TEACHERS IN AGRICULTURAL EDUCATION
AT IOWA STATE UNIVERSITY

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The decision by many agricultural education students whether they will become teachers of vocational agriculture may depend upon the quality of their student teaching experience. More specifically, this decision may be influenced by the quality of student teaching as *perceived* by the student teachers themselves. This perception, when "thought of in terms of the way an individual (student teacher) responds toward the achievement of individual and group goals in a given job situation" is defined as "student teacher morale" (Bentley and Price, 1972, p.2).

According to Miller (1977), teacher morale may be an important variable contributing to successful teaching. This proposed association between *teacher* morale and good teaching suggests a similar relationship between *student teacher* morale and performance. Furthermore, Miller (1978) proposed that morale may affect teacher tenure. The vocational agriculture teacher shortage demands increased recruitment and retention efforts. Similarly, identification of low morale in prospective teachers--during the critical period of student teaching--may allow remedial attention, perhaps affecting the procedures for delivery of student teaching.

Objectives

The primary objectives of this study were to:

1. Compare the morale of student teachers in agricultural education at Iowa State University categorized by the mode of student teacher delivery.
2. Determine the relationships between student teacher morale and student teaching quarter/delivery mode and whether a prospective teacher plans to teach vocational agriculture (or not) at the end of student teaching.

A secondary objective of the study was to examine an alternative method for scoring the Purdue Student-Teacher Opinionnaire (Bentley and Price, 1976).

Procedures

In an effort to enhance the quality of student teaching in agricultural education at Iowa State University, the staff developed two models for the delivery of student teaching. In the first model, the traditional pre-student teaching block methods courses were integrated into student teaching. After a brief (7 day) introduction and orientation to methods of teaching vocational agriculture, student teachers were placed in their centers for student teaching. They returned to campus on Fridays for additional formal instruction in methods; then, they applied concepts and principles during the following days of student teaching. This "integrated" model was used during Fall Quarter, 1977, with 18 student teachers.

During Winter and Spring Quarter (1977-1978), student teachers completed their methods courses prior to student teaching. Fifteen and twelve students, respectively, participated in the student teaching block within this "conventional" model.

Independent Variable

These two models, with the conventional model repeated once, served as the three levels of the independent variable by which student teachers were categorized.

Dependent Variable and Instrumentation

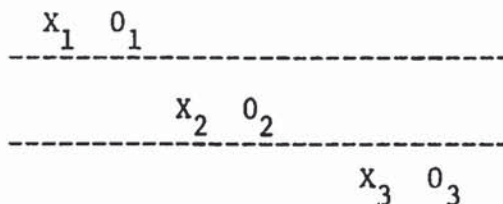
The dependent variable was student teacher morale as measured by the Purdue Student-Teacher Opinionaire, a self-report instrument of 59 items. These items yield nine factor scores:

1. Rapport with supervising teacher
2. Rapport with principal
3. Rapport with university supervisor
4. Teaching as a profession
5. School facilities and services
6. Professional preparation
7. Rapport with students
8. Rapport with other teachers
9. Student teacher load

To the extent that responses are made anonymously and content validity is exhibited, at least adequate validity may be assumed. Reliability of the instrument was determined as an objective of the study, and results are reported in the findings.

Design

To accomplish the first objective, a "patched-up" (Tuckman, 1978, p. 146) design was employed: a separate-sample posttest design. Graphically, the design is:



The design may be explained as follows:

X_1 = "Integrated" Student Teaching Delivery Model

X_2 = "Conventional" Student Teaching Model (winter quarter)

X_3 = "Conventional" Student Teaching Model (spring quarter)

O_1, O_2, O_3 , = Posttests of student teacher morale

The second objective of the study was accomplished through analysis of student teacher morale, student teaching quarter and delivery mode, and whether or not at the conclusion of student teaching, the student teacher planned to teach vocational agriculture.

Data Sources

All student teachers ($N = 45$) in agricultural education at Iowa State University during the 1977-1978 school year served as subjects in the research and supplied data. The student teachers completed the Purdue Student-Teacher Opinionnaire (PS-TO) on the day immediately succeeding their last day as student teachers. They also indicated whether or not they planned to teach vocational agriculture.

Data Analysis

The Purdue Student-Teacher Opinionnaire employs a four-point scale--agree, probably agree, probably disagree, and disagree. Since all 59 items on the scale are positive ("agree" is a "good" response), the scoring system assigns values of 4, 3, 2, and 1, respectively, to the four response categories. Warren, Klomglan, and Sabri (1969) discuss the problems of an interval scale with few possible values and the assumption of equal intervals between values. Instead, they recommend the "certainty method" for developing empirical measures

in the social sciences. So, a secondary objective of this study was to examine the certainty method for responding to and scoring the PS-T0.

Students responded to the 59 items on the PS-T0 on a scale of "1" (strongly disagree) to "11" (strongly agree), and the values were then transformed to a "0" to "16" certainty scale as follows:

Response values	1	2	3	4	5	6	7	8	9	10	11
Transformed values	0	3	5	6	7	8	9	10	11	13	16

This method of scoring "spreads out" the ends of the original scale. It assumes that there is a greater difference between a respondent who rates an item "1" and a respondent who rates an item "2" than there is between two respondents, one who rated an item "5" and the other who assigned an item "6".

Factor scores were produced by summing the transformed values for each student teacher's responses to the PS-T0 items comprising that factor. To achieve "uniform" scores, each factor score is expressed as a percentage of the highest possible score for that factor. (Example: Professional Preparation consists of 6 items. So, the highest possible score would be 96 (6 items times 16 = 96).) Dividing by .96 gives a 100 percent score. Cronbach coefficient alpha correlations were employed to estimate the reliability of each factor.

One-way analysis of variance was used to compare the morale of student teachers grouped according to student teaching model. Chi-square analysis was employed to test the relationship of student teaching quarter or delivery mode and job plans. Finally, correlation coefficients were calculated to assess the relationship between student teacher morale and plans to teach vocational agriculture (or not).

Results

The data from the PS-T0 were first checked for reliability according to the nine factor scores. The reliability estimates were compared with those reported by Bentley and Price (1972), as shown in Table 1. Six of the nine correlation coefficients resulting from the certainty method of scoring (group 2 in Table 1) were higher than those shown by Bentley and Price. This, alone, indicated that the certainty method of scoring (1 to 11 response scale and 0 to 16 transformed scale) may be a worthwhile means of altering the PS-T0 to increase factor reliability. The smaller sample size in this study (N = 45 as compared to N = 179) illustrates further its usefulness (smaller sample size tends to reduce reliability). On

Table 1

COMPARISON OF FACTOR RELIABILITY ESTIMATES

PS-TO Factor	Cronbach Coefficient Alpha Correlations	
	Group 1 ^a	Group 2 ^b
Rapport with supervising teacher	.84	.90
Rapport with principal	.93	.90
Rapport with university supervisor	.82	.81
Teaching as a profession	.72	.89
School facilities and services	.76	.78
Professional preparation	.76	.73
Rapport with students	.79	.85
Rapport with other teachers	.78	.89
Student teacher load	.69	.71

^aThese coefficients were reported in an addendum to the PS-TO by Bentley and Price (1972). The values were computed on N = 179 student teachers.

^bThese coefficients were computed on N = 45 student teachers in the Agricultural Education Department at Iowa State University, 1977-1978 school year.

the other hand, though, variability of the data from the 45 student teachers in agricultural education may have been less than that used in the base group (N = 179). Decreased variability, which would improve reliability, may account for some of the reliability improvement shown in this study. Further examination of the certainty method for scoring the PS-T0, nevertheless, seems warranted.

To compare the morale of student teachers based on their student teaching delivery mode, data in Table 2 are presented. The overall means for the total sample of 45 student teachers are shown in the first column of figures, and the PS-T0 factors are listed in rank order according to the highest mean rating. Student teachers scored highest on "rapport with supervising teacher." This suggests that the student teachers developed good relationships with their supervising teachers and, optimistically, that the supervising teachers were helping student teachers learn to teach. The lowest mean score was given to "teaching as a profession;" the overall mean of 52 indicated that the student teachers neither agreed nor disagreed with statements concerning teaching as a profession. All other mean scores fell in the "slightly agree" to "agree" range--60 percent to 74 percent.

Only one statistically significant difference among group means was found for the different student teaching quarters or delivery modes. Those student teachers who completed student teaching in the conventional mode (methods followed by student teaching, both Winter and Spring Quarters) agreed significantly more ($p < .01$) with statements about professional preparation. So, student teachers who completed their methods courses before student teaching felt better prepared professionally, even at the end of student teaching, than those who completed methods courses and student teaching in an integrated model.

The relationships of student teaching quarter/model and job plans are shown in Tables 3 and 4. The chi-square statistic failed to detect a significant relationship between student teaching quarter and job plans. However, the relationship between student teaching delivery mode (Winter and Spring Quarters combined) and job plans was statistically significant at the .10 level. A considerably higher percentage of student teachers in the "conventional" group planned to teach (17 to 27) than in the "integrated" group (6 of 18). One may conclude that the conventional model for student teaching was preferable to an integrated model.

Data in Table 5 present the relationships between PS-T0 factors and job plans. Six of the nine correlation coefficients were positive; three of these six were highly significant coefficients ($p < .01$). This means that student teachers who planned to teach vocational agriculture tended to have a higher morale (agree more, score higher).

Table 2

MEANS, STANDARD DEVIATIONS, RANKS, AND ANALYSIS OF VARIANCE
FOR PURDUE STUDENT-TEACHER OPINIONAIRE FACTORS

PS-TO factor ^a	Total		(1) Fall Quarter		(2) Winter Quarter		(3) Spring Quarter		F-ratio	
	Mean	S.D.	Rank	Mean	Rank	Mean	Rank	Mean		S.D.
				S.D.	S.D.	S.D.	S.D.	S.D.		
Rapport with super- vising teacher	74.17 15.72		1	73.35 15.97	1	79.27 12.44	3	69.01 18.20	1.49	
Rapport with other teachers	72.06 14.34		2	71.47 14.54	3	71.87 16.56	2	73.18 12.02	.05	
Rapport with univer- sity supervisor	69.92 13.08		3	69.79 15.16	6	66.67 12.66	1	74.18 9.56	1.10	
School facilities and services	68.44 13.26		4	67.78 13.53	4	69.83 13.24	4	67.71 13.92	.12	
Rapport with students	68.33 12.20		5	66.80 8.15	2	74.01 9.30	6	63.54 17.60	2.93	
Student-teacher load	64.36 14.67		7	62.64 15.08	8	63.83 14.81	5	67.60 14.62	.42	
Rapport with prin- cipal	62.29 16.88		6	64.63 15.28	7	64.43 18.60	8	56.12 16.80	1.10	
Professional prep- aration	59.63 12.78		9	51.39 11.35	5	68.82 10.34	7	60.50 9.51	11.20* 2,3>1 ^b	
Teaching as a pro- fession	52.18 19.63		8	51.88 17.85	9	54.23 17.15	9	50.07 25.77	.15	

^aFactors are listed in rank order according to mean ratings for the total sample.

^bGroup means differed significantly at .10 level using Scheffe' procedure.

*Significant difference at .01 level

Table 3

STUDENT TEACHING QUARTER BY JOB PLANS

Plans About Teaching Vo-Ag	Quarter						Total	
	Fall		Winter		Spring		N	%
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Yes	6	13.3	10	22.2	7	15.6	23	51.1
No	12	26.7	5	11.1	5	11.1	22	48.9
Total	18	40.0	15	33.3	12	26.7	45	100.0

Chi-square = 3.98

Table 4

STUDENT TEACHING BLOCK DELIVERY MODE BY JOB PLANS

Plans About Teaching Vo-Ag	Delivery Mode				Total	
	Integrated		Conventional		N	%
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Yes	6	13.3	17	37.8	23	51.1
No	12	26.7	10	22.2	22	48.9
Total	18	40.0	27	60.0	45	100.0

Chi-square = 3.79^a

^aSignificant at the .10 level

Table 5

CORRELATION COEFFICIENTS FOR PS-TO FACTORS WITH JOB PLANS

PS-TO Factor	Teach vo-ag? ^a
Rapport with supervising teacher	.2202
Rapport with principal	.0169
Rapport with university supervisor	.0885
Teaching as a profession	.4310 ^{**}
School services and facilities	-.1033
Professional preparation	.4339 ^{**}
Rapport with students	.4788 ^{**}
Rapport with other teachers	-.0264
Student teacher load	-.2997 [*]

^aIn coding, those student teachers who planned to teach were assigned a value of "1"; those not planning to teach were given a value of "0". So, a positive correlation coefficient would mean that those planning to teach tended to score higher on the factor; conversely, a negative correlation coefficient indicates that those not planning to teach scored higher.

* Significant at .05 level

** Significant at .01 level

The three highly significant positive correlation coefficients--rapport with students, professional preparation, and teaching as a profession--seem to confirm the plans of student teachers to teach. That is, these three factors appear to be projective as opposed to rapport with university supervisor, rapport with supervising teacher, and student teacher load. These three factors may be reflective; in other words, they look back on the student teaching experience rather than forward into the future. Of the three negative correlation coefficients, only one student teacher load was statistically significant ($p < .05$). This indicates that student teachers who did not plan to teach viewed their student teacher load more favorably. Perhaps, student teachers not planning to teach simply did not work as hard!

Conclusions and Recommendations

Based on the findings of this study, the conclusions and recommendations are summarized:

1. The certainty method of scoring the Purdue Student-Teacher Opinionnaire seems to improve reliability of the nine factor scores. Additional study of the PS-TO should be conducted using the certainty method. Inter-factor correlations and factor analytic results should be examined to assess more fully the value of the certainty method in improving scale reliability and unidimensionality. Furthermore, the certainty method should be scrutinized in additional research on variables in the affective domain.
2. The quarter in which agricultural education students completed student teaching had little effect on their morale. However, the mode for delivery of student teaching influenced greatly the opinions student teachers have of their professional preparation. Those student teachers who completed methods courses before student teaching (conventional model) responded much more favorably to items concerning their professional preparation than did student teachers whose methods courses and student teaching were integrated. This suggests that the conventional mode of student teaching block delivery may be preferable over an integrated mode of delivery. Apparently, student teachers prefer to learn the principles and concepts of methods followed by their application during student teaching rather than an integration of principles, concepts, and their application.
3. Student teaching quarter was not statistically related to whether or not a student planned to teach vocational agriculture. The findings did show a relationship between delivery model and job plans: A higher percentage of student teachers in the conventional model planned to teach than those in the integrated model. The cause and effect relationship was not tested. Only random assignment

of student teachers to delivery models would allow the researcher to test this relationship. Student teachers self-selected the quarter in which they would student teach and, therefore, the mode in which they completed student teaching.

4. Student teacher morale was positively correlated with plans to teach vocational agriculture. That is, those student teachers who planned to teach vocational agriculture tended to respond positively to statements assessing their morale. This was most evident in "projective" factors--those factors that measured teaching as a profession, professional preparation, and rapport with students. One significant negative correlation--student teacher load--indicated that those not planning to teach tended to respond more favorably. Again, no cause and effect relationship can be concluded. An unanswered question is: Does student teacher morale cause student teachers to decide to teach, or do plans to teach (or not to teach) cause student teacher morale? A carefully designed study in which job plans and student teacher morale were closely monitored should be conducted to determine the real cause and effect relationship.

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Major differences of performance between students in the six schools studied did not exist. Since the schools were selected at random from the 234 vocational agriculture programs in Missouri, an implication is made that the findings of this study would be typical of all vocational agriculture programs in Missouri. Based on this implication, a recommendation is made that vocational agriculture instructors in every program should be concerned with and employ methods of controlling the noise intensities in the agricultural mechanics laboratory.

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