

Selected Supervisory Techniques Used by Principals
and Their Implications to the Success of
Beginning Teachers

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Beginning teachers have unique needs and problems. Adequate supervision is viewed as one of the keys to helping the beginner become a competent and successful teacher. Research indicates that teachers welcome suggestions for instructional improvement from their principals (Harrington, 1961; Lortie, 1975; Schwartz, 1956; Sergioanni, 1977; and Thomas, 1979). However, these studies also indicate that teachers reject supervision which is inspective and autocratic. Recent literature indicates that shared responsibility in the development of supervisory techniques results in improved staff morale and has a bearing on success in teaching (Sergiovanni, 1977; and Tisher, 1979).

Given the current circumstances in which educators find themselves--performance based educational programs, accountability measures, legislative mandates, and teacher survival--it was deemed appropriate to investigate the implications of school principals using selected supervisory techniques in the supervision of beginning teachers of agriculture.

Purpose of Study

The purpose of the study was to determine if using selected supervisory techniques would contribute to the success of beginning teachers of vocational agriculture. In this study success was defined as the extent to which the teachers effectively accomplished their lesson objectives. The perceptions of principals, teachers, and students were used to evaluate the effectiveness of the teaching, supervisory systems, and teaching style. Subsidiary objectives of the study included determination of the effect on student achievement and the working climate when beginning teachers are supervised on the basis of performance and product specifications as compared to process specifications.

Two systems of supervision were compared in this experiment: product specification and process specification. Product specification is defined as a supervisory system based on supervision-by-objectives. Goals and objectives are clearly defined by the teacher and communicated both to the supervisor and the students. Because supervision-by-objectives is student-centered, emphasis is placed on the "product" of the learning situation. Users of the product specification system attempt to determine what the learner can do as a result of the teaching and learning. Process specification is defined as a supervisory system based on management of the teacher and his/

her activities. Standard procedures are prescribed by school principals. Because process specification is teacher-centered, emphasis is placed on what the teacher does or does not do prior to and during the teaching process.

The treatment or independent variable was the system of supervision with two levels: product specification supervisory techniques or process specification supervisory techniques. The dependent variables in the study and their respective instruments of measurement were student perceptions of teaching style and effectiveness (SPOTS--Student Perception of Teacher Style Survey), student achievement (50-question multiple choice test), supervisory behaviors (SBDQ--Supervisory Behavior Description Questionnaire), and supervisor effectiveness (Job Objectives Questionnaire and the Likert Profile of a School Survey).

Procedures

The study was an experimental posttest only control group design. Two randomly selected groups of principals having beginning teachers of agriculture in their school districts participated in workshops on selected supervisory techniques. There was a total population of 40 Pennsylvania schools from which 28 principals were randomly selected. These schools were located throughout Pennsylvania. There were 10 area vocational technical schools and 18 comprehensive high schools. It should be pointed out that one school had two beginning teachers of agriculture; therefore, there were 15 teachers involved in process specification supervision. Additionally, two teachers involved in product specification supervision and two principals involved in process specification supervision did not complete the questionnaires.

The principals in both groups agreed to follow specified supervisory strategies and maintain a log of activities during the fourth quarter of the 1979-80 school year. Close analysis of the log of activities completed by the principals and the teachers indicated very little difference in time spent on supervision in the two groups. Additionally, the logs indicate consistent patterns of behavior as presented in the workshops. The 28 teachers participating in the study received an instructional packet entitled Energy Conservation in the Home and on the Farm (Howell, McCoy, & Miller; 1980). The packet included a teachers' manual and sufficient copies of the student manual for all students. A standardized student achievement test written by the researchers was given at the conclusion of the instructional unit. Students completed a survey concerning their perceptions of the teacher's style of teaching and overall effectiveness. Teachers and administrators in both groups completed a post-experimental evaluation of the respective supervisory systems using the instruments previously described.

Principals using product specification supervision (supervision-by-objectives) followed five steps of the Clinical Supervisory Model proposed by Cogan (1973): pre-observation conference, observation,

analysis, post observation conference, and critique. Principals using process specification supervision followed traditional in-class observation strategies which included an observation of the class, completion of a teacher rating form, and a post-observation conference. Teacher behavior was to be appraised against a standard of performance or set of overt teaching acts assumed to be related to effective teaching performance.

The data for this study consisted of measures from each of the following groups: principals, teachers, and students. An alpha risk of $p < .05$ was chosen and the appropriate t-statistic or analysis of variance was calculated.

Findings

It was hypothesized that teachers being supervised through a system of product specification would have greater effectiveness (success) in teaching than teachers supervised through a system of process specification as perceived by students on the Student Perception of Teacher Style Survey.

Table 1 indicates that different supervisory systems used by school administrators and beginning teachers in this study resulted in a significant difference in student ratings of teachers regarding teacher style. Additionally, using schools as a blocking variable, 2-way analysis of variance was used to determine F-values for each of the 16 items of the SPOTS Survey.

Table 1

Composite Means and Standard Deviations of Ratings by Students on the Student Perception of Teacher Style Survey (SPOTS) in Product and Process Specification Supervisory Systems

Group	<u>N</u>	<u>X̄</u>	<u>S.D.</u>	<u>D.F.</u>	<u>t</u>
Product specification	219	89.37	21.52	218	2.76*
Process specification	166	83.63	18.22	165	
Totals	385	86.50	19.87	383	

* $p = < .004$

Table 2 indicates that F -values for three of the 16 items on the SPOTS survey resulted in significant differences between the two groups. From these data it can be concluded that the different supervisory systems resulted in significant differences in student ratings of teachers in the areas of making learning fun, use of a variety of teaching strategies, and choice of work groups. In addition, one other subscale--teacher has varied interests and is interested in student opinions--approaches significance ($p < .07$) and appears to be consistent with the other three subscales.

Table 2

Subscale Mean Ratings by Students on the Student Perception of Teacher Style Survey (SPOTS) in Product and Process Specification Supervisory Systems

Subscale item	Product $\frac{n=13}{\bar{X}}$	Process $\frac{n=12}{\bar{X}}$	F
Learning is fun	5.41	4.52	4.49**
Variety of teaching strategies	5.56	4.60	4.30**
Choice of work group	6.92	6.02	4.11*
Totals	5.96	5.04	

* $p < .04$ ** $p < .05$

It is interesting to note that the mean scores for all other items of the SPOTS instrument were higher for the product specification group than the mean scores of the process specification group, but not significantly higher. These items include the following: teacher directiveness, student freedom, disagreement, teacher goes by the book, teacher first name basis, time spent on details, group work, listening, teacher as friend, starting class, homework, and frequency of group work.

Secondly, it was hypothesized that students would score higher on an achievement test when teachers and principals evaluate teacher performance using a system of product specification than in a system of process specification.

Using the groups as the unit of measurement, there were no significant statistical differences in student achievement test scores between the two groups of students in this experiment (Product Mean = 25.90; Process Mean = 24.61). The standardized student achievement test showed a Kuder-Richardson-20 reliability value of .837.

Thirdly, it was hypothesized that supervisor effectiveness scores and behavior ratings as perceived by beginning teachers on the Likert Profile of a School Survey, the Job Objectives Questionnaire, and the Supervisor Behavior Description Questionnaire would be higher for the product specification supervisory system than for the process specification supervisory system.

As a whole, there were no significant statistical differences between the two groups of teachers on the three instruments. However, the various subscales (which are combinations of items for which reliability values have been established) of the Likert Profile of a School Survey and the Job Objectives Questionnaire did indicate significant differences between the two groups of teachers as to their perceptions of the supervisory systems as indicated in Tables 3 and 4, respectively.

Table 3

Decision Making Procedures Subscale Ratings of Principals by Beginning Teachers on the Likert Profile of a School Survey in Product and Process Specification Supervisory Systems

Group	<u>N</u>	<u>\bar{X}</u>	<u>S.D.</u>	<u>D.F.</u>	
Product specification	12	15.75	4.90	11	2.
Process specification	15	11.93	3.81	14	

* $p = < .03$

Table 3 indicates that beginning teachers involved in product specification supervision rated their principals higher than those beginning teachers involved in process specification supervision in the subscale area of decision making procedures on the Likert Profile of a School Survey.

Subscales of the Likert Profile of a School Survey which showed no statistically significant difference between the two groups of teachers include the following: goal commitment, team cooperation, principal receptivity to teacher ideas, principals' goal emphasis, work facilitation by principal, competence of principal, teacher openness, teacher support of principal, and other teachers.

Table 4

Subscale Ratings of Principals by Beginning Teachers on the Job Objectives Questionnaire in Product and Process Specification Supervisory Systems

	Product n=12		Process n=15		t
	\bar{X}	S.D.	\bar{X}	S.D.	
Emphasis on objectives	5.33	1.30	4.00	2.10	2.02*
Challenge	1.83 ^a	0.58	2.73	1.43 ^a	-2.21***
Reward	3.58	1.78	2.13	1.12 ^a	2.57****
Knowledge of results	3.50 ^a	1.62	4.60	1.05	-2.12**
Control over resources	5.66	1.07	4.53	1.68	2.02*

* $p < 0.05$ ** $p < 0.04$ *** $p < 0.03$ **** $p < .01$

^aReverse scoring

d.f. = 25

Additionally, Table 4 indicates that beginning teachers involved in product specification supervision rated their principals significantly different in five areas of supervision (emphasis on objectives, challenge, intrinsic rewards, knowledge of results, and control over resources) than did beginning teachers in the process specification supervisory system on the Job Objectives Questionnaire. Because of reverse scoring on some items of this instrument, a lower mean score indicates a higher positive action by principals.

Subscales of the Job Objectives Questionnaire which showed no statistically significant differences between the two groups of teachers include the following: clarity of objectives, participation, objectives as impediments, commitment toward objectives, material rewards, extrinsic rewards, and personal punishment.

There were no significant statistical differences between the two group of teachers on the Supervisor Behavior Description Questionnaire as a whole or on the subscales. The subscales are as follows: initiating structure, consideration, positive reward behavior, and punitive reward behavior.

Lastly, it was hypothesized that supervisor effectiveness scores obtained by self-rating on the Likert Profile of a School Survey, Job Objectives Questionnaire, and the Supervisor Behavior Description Questionnaire would be higher for the product specification supervisory system than the process specification supervisory system. There were no significant statistical differences between the two groups of principals as rated on the three instruments.

Discussion and Conclusions

Significant differences in perceptions of students concerning teacher style, teacher perceptions of supervisory techniques, and supervisory effectiveness (Subscales of Likert Profile, and JOQ) suggest that product specification supervision (supervision-by-objectives) merits further investigation and implementation.

Although the null form of only one hypothesis was rejected, one should be careful in concluding that product specification supervision should not be used. It was possible that the one-day workshop on supervisory techniques the principals were to use was not sufficient to fully assimilate the procedure that was to be followed. Habits and traditions regarding modes of operation are not easily changed regardless of the commitment to a researcher's goal, and even if changed, the residual effects on the teacher may not have had sufficient time during the experiment to evaporate.

It can be concluded that a beginning teacher working in a system of product specification supervision can have a positive influence on students regarding the climate and style of operation in the learning situation. Teachers who use a variety of teaching strategies, allow students to work in student selected groups, and try to make learning interesting and fun will be perceived as being more effective by their students. Additionally, it can be concluded that beginning teachers working in a supervision-by-objectives system perceive their principals to be effective in the following areas of supervision: decision making procedures, emphasis on objectives, challenge, control over resources, knowledge of results, and intrinsic rewards. Teachers involved in product specification supervision perceive that they have the support they need in achieving their objectives, they are interested in achieving their objectives, they are recognized for the achievement of their objectives, achievement of objectives is important to them, and their objectives can be easily coordinated in their schools. Finally, it can be concluded that the supervisory system used by principals/supervisors and teachers can have an influence on the perceived success of beginning teachers of vocational agriculture.

Summary

Research in problems of appraising and improving teacher performance has served to indicate shortcomings in previously used methods of evaluation and supervision and to suggest new and more effective approaches. The question is not whether supervision and evaluation should be done, but how can it be done most effectively?

Based on the findings of this study, vocational agriculture teachers, supervisors, administrators, and teacher educators should consider using more effective supervisory strategies and conduct further research in the area of supervision.

References

- Cogan, M. (1973). *Clinical supervision*. New York, NY: Houghton-Mills.
- Harrington, W. E. (1961). First year teachers and supervision. *Ohio School Journal*. XXXIX, 32-33.
- Howell, D. L., McCoy, J., & Miller, S. (1980). *Energy conservation in the home and on the farm*. Dept. of Agricultural Education, The Pennsylvania State University.
- Lortie, D. C. (1975). *School teacher: A sociological study*. Chicago, IL: University of Chicago Press.
- Schwartz, E. T. (1956). *A study of beginning teachers--Problems encountered and services sought*. Unpublished doctoral dissertation, The Pennsylvania State University.
- Sergiovanni, T. J. (1977). *Handbook for effective department leadership*. Boston, MA: Allyn and Bacon, Inc.
- Tisher, R. P. (1979). *Teacher induction: An aspect of the education and professional development of teachers*. Paper presented at the National Conference Exploring Issues in Teacher Education: Questions for Future Research, Research and Development, Center for Teacher Education, University of Texas, Austin, TX.
- Thomas, M. D. (1979). *Performance evaluation of education personnel*. Bloomington, IN: Phi Delta Kappa, Education Foundation.