AN INVESTIGATION INTO RELATIONSHIPS BETWEEN STUDENT TEACHING AND PUPIL MOTIVATION, AS PERCEIVED BY SUPERVISING TEACHERS, STUDENT TEACHERS, ADMINISTRATORS, AND PUPILS

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ABSTRACT

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By

Lawrence E. Veenstra

Purpose

The study had two principal purposes. One of these was to analyze the relationship between motivation and selected variables in the teaching process. The other purpose was to study the effects of student teaching programs upon pupils, particularly with respect to motivation and the variables in the study hypothesized to be related to motivation.

Procedures

Data were gathered in Michigan from 4,390 student teachers throughout the state, 985 administrators of cooperating schools, 569 supervising teachers of Michigan State University student teachers, and 376 pupils in grades five through twelve in the public schools in Grand Rapids, Michigan. Data from the first three of these groups were collected in a statewide study of the effects of student

teaching programs upon the cooperating schools. Questionnaires asked all groups of respondents to compare, on a five-point scale in most cases, the performance of student teachers with that of the regular teachers with respect to each variable being investigated. Correlational techniques were utilized in the analysis of the data.

Findings

1. Motivation of pupils was perceived to improve significantly during student teaching programs by all four groups of respondents. Breakdown of the data from pupils and supervising teachers by level, however, showed that only at the elementary level was there a perception of significantly improved motivation during student teaching programs; no significant mean change in pupil motivation occurred at the junior or senior high levels.

2. Supervising teachers perceived benefits from student teaching programs in terms of more small group instruction, more individual attention, and introduction of new and different learning materials. They perceived discipline, however, to be somewhat poorer when student teachers were in charge.

3. All variables examined for relationship to motivation, based on pupil perceptions, were found to be correlated positively and significantly with motivation. The correlations obtained between motivation and the other variables in the study, listed in order beginning with the

highest correlation obtained, were as follows:

a. Teacher interest in the pupil as a person (r=.55)
b. Pupil understanding of the material (r=.48)
c. Variety of procedures (r=.45)
d. Knowledge of progress by the learner (r=.44)
e. Teacher competence in the subject matter (r=.42)
f. Individual attention (r=.40)
g. Help outside of class (r=.37)
h. Discipline (r=.37)
i. Relevance (r=.36)
j. Use of praise and encouragement (r=.35)
k. Introduction of new and different learning materials (r=.26)
l. Pupil participation in decision making (r=.32)
m. Small group work (r=.26)
n. Use of audio-visual media (r=.15)

Correlation coefficients were also calculated based on the data from elementary (grades five and six), junior high, and senior high pupils separately. All of the correlations thus obtained were also positive, but a few of these were not of sufficient magnitude to be statistically significant; these were use of audio-visual media at the elementary level, small group work and use of audio-visual media at the junior high level, and pupil participation in decision making and small group work at the senior high level.

4. The pupils in the study perceived improvement (or increase) during student teaching programs in the following variables:

a. Pupil participation in decision making
b. Variety of procedures
c. Motivation
d. Introduction of new and different learning materials
e. Small group work
f. Individual attention
g. Use of praise and encouragement

The pupils perceived the following variables as being poorer (or less frequent) during student teaching programs:

a. Discipline
b. Teacher competence in the subject matter
c. Use of audio-visual media
d. Pupil understanding of the material
e. Knowledge of progress by the learner

The pupils perceived no significant mean change in:

a. Relevance
b. Help outside of class
c. Teacher interest in the pupil as a person

These perceived changes during student teaching programs were also analyzed separately for each level: elementary, junior high and senior high.

5. A significant positive relationship ($r = .45$) was found between supervising teacher perceptions of student teacher preparation and pupil motivational change.

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CHAPTER I

INTRODUCTION

Need for the Study

The problem of how to motivate learners most effectively is one of the most persistent concerns involved in the planning of educational programs. As Wallen and Travers have pointed out in an article on the subject of teaching methods in Handbook of Research on Teaching:

> Motivation energizes action and also gives direction to action. Many who have studied the problems of effective teaching hold that the main function of the teacher is to arrange conditions so that the pupil directs his energy toward worthwhile goals.[1]

The importance of the question of motivation is also shown by the results of a study by R. A. Davis involving over a thousand teachers in the public schools. Davis found that pupil motivation was the major problem reported by both the elementary and secondary teachers in the study.[2] And, as Harold Bernard stated, "the success

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[1] Norman Wallen and Robert Travers, "Analysis and Investigation of Teaching Methods," in Handbook of Research on Teaching, ed. by N. L. Gage (Chicago: Rand McNally, 1963), p. 495.

[2] Robert A. Davis, "The Teaching Problems of 1075 Public School Teachers," Journal of Experimental Education, Vol. 9 (September, 1940), 45.

of a teacher is to a very large extent dependent upon his ability to motivate pupils effectively."[1]

The fundamental problem of understanding human motivation is an extraordinarily difficult and complex one, whether we are focusing upon the motivation of human beings in general, or learners in particular. It is probably in the nature of man that his behavior and his response to attempts to motivate him will never be entirely predictable. And yet, when we focus upon groups rather than upon individuals, research has shown that some very useful generalizations can be arrived at.

Some interesting observations concerning human motivation have been made by Harlow, who has done a great deal of research with primates. Harlow observes that what most dramatically sets man apart from the animals, even more than the art of speech, is the complexity of his motivation.

> Motivationally, man is a strange, if not bizarre, creature: he is the only known organism to arise in the morning before he is awake, work all day without resting, continue his activities after the diurnal and even the crepuscular organisms have retired to rest, and then take narcotics to induce an inadequate period of troubled sleep. But lest we decry man's motivational mechanisms, we should point out that without them we would not have the steam engine, the electric light, the automobile, Beethoven's Fifth Symphony, Leonardo da Vinci's Last Supper, gastric ulcers, coronary thrombosis, and clinical

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[1]Harold Bernard, Psychology of Learning and Teaching (New York: McGraw-Hill, 1965), p. 238.

> psychologists. Indeed, we might well regard this aggregate as the human motivational syndrome. . . .
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> Man's motivation is extremely strong and persisting. . . . Man attempts with a haunted zeal to solve problems whose solution has no apparent utility and may even produce personal pain or harm. The problem, even though difficult or impossible of solution, appears to provide its own motivation.[1]

The motivation of human beings, then, is clearly a most difficult subject. How extensively has it been researched? When compared with other significant areas of psychology and education, the extent of research on motivation, particularly as it applies to the educational process, is not very great. Undoubtedly the fact that we cannot observe motivation as such is one of the reasons. The emphasis in recent work on motivation is in the area of basic theoretical formulations, which for the most part are not directly applicable to concrete situations in the classroom. Recent writings indicate that there is a definite need for research on motivation which is directly related to the processes of instruction in the classroom. Melvin Marx, for example, in the article on "Motivation" in the third edition of the Encyclopedia of Educational Research, states that "unfortunately we are handicapped by the relatively small amount of relevant material

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[1]Harry F. Harlow, "Motivation as a Factor in the Acquisition of New Responses," in Current Theory and Research in Motivation: A Symposium, ed. by Judson Brown, et al. (Lincoln: University of Nebraska Press, 1953), pp. 24-25.

available in the educational literature."[1] In the most recent edition of that publication, Weiner[2] points out that in general psychologists have concentrated on basic research on motivation in general rather than on principles directly applicable in teaching. They are attempting "to search for the basic laws of learning and motivation before suggesting specific procedures which might enhance performance in the classroom." Wallen and Travers state that "despite the growing body of knowledge about motivational conditions related to learning, we lack much information vitally needed for the design of teaching methods."[3] Edwards and Scannell point out how important a variable motivation is in classroom learning and that, in spite of the wide recognition of its importance, little is really known of the human motivational structure and the way in which it functions in the learning process.[4] And Shaw, writing in Review of Educational Research, states that while many studies have been done on some aspects of

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[1]Melvin Marx, "Motivation," Encyclopedia of Educational Research (3rd ed.; New York: Macmillan, 1960), p. 895.

[2]Bernard Weiner, "Motivation," Encyclopedia of Educational Research (4th ed.; London: Macmillan, 1969), p. 878.

[3]Wallen and Travers, op. cit., p. 495.

[4]Allen Edwards and Dale Scannell, Educational Psychology: The Teaching-Learning Process (Scranton, Pa.: International Textbook Co., 1968), p. 126.

motivation, including the role of intrinsic factors, studies of the role of the teacher in affecting motivation of the learner "seem to be in very short supply."[1]

It seems very clear, then, that there is a definite need for further research regarding motivation, and particularly so with respect to practical ways in which the classroom teacher can work toward improving pupil motivation. Accordingly, in this study, factors which had been shown by previous research to have some relationship to motivation, as well as other factors either suggested by the literature or simply hypothesized in this study, were analyzed to determine whether or not they are related to motivation, as perceived by the sample populations in this study, and, if there is a relationship, how close the relationship is between motivation and these other factors.

The second major focus of this study was upon the effect of student teaching programs on the schools in which the student teachers are placed. The importance of the student teaching experience for the student teacher himself has been well established, with student teaching being frequently singled out as the most important experience in

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[1]Merville C. Shaw, "Motivation in Human Learning," Review of Educational Research, Vol. 37 (December, 1967), 576.

teacher education.[1] With regard to the effects of student teaching upon the schools, however, there has been less research, although some studies have been done. In view of the movement in recent decades away from the campus laboratory school to off-campus public and non-public elementary and secondary schools for the student teaching experience, it has become of great importance to gain a good understanding and assessment of the effects of student teaching upon the pupils and the schools involved.

Purpose

This study has two principal purposes. One of these is to increase our understanding of motivation and related factors. From this better understanding it is hoped that recommendations may be made for the improvement of pupil motivation in the schools. Fruitful avenues for further research may also emerge from the knowledge gained.

The second principal purpose is increased understanding of the effects of student teaching programs upon the schools. Do student teaching programs have a generally positive or a generally negative effect upon the schools? Do student teaching programs tend to make significant

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[1] James B. Conant, The Education of American Teachers (New York: McGraw Hill Book Co., 1963), p. 142. See also Elizabeth Hunter and Edmund Amidon, "Direct Experience in Teacher Education: Innovation and Experimentation," Journal of Teacher Education, Vol. 17 (Fall, 1966), 282.

contributions toward pupil motivation or toward any of a number of specific variables being investigated with regard to relationship to motivation? Are there weaknesses with regard to student teaching programs, with respect to any of these factors, which might suggest possible changes in teacher education programs at the college level or better orientation of student teachers at the level of the local school or school system in which they work? It is hoped that the findings of this study may be useful by helping to answer some of these questions.

Results and findings with respect to both of the purposes stated above may be helpful to those who plan teacher training programs, to those who are preparing to become teachers, and also to experienced educators in the profession.

Hypotheses

The following hypotheses were tested in the study:

Hypothesis 1: Motivation of the pupils, as perceived by student teachers, supervising teachers, administrators, and pupils will not change significantly when a student teacher is placed in a classroom.

Hypothesis 2: There will be no relationship between changes in motivation and changes in these aspects of classroom procedure and management, as perceived by supervising teachers:

a. Small group instruction
b. Individual attention
c. Introduction of new and different materials
d. Discipline.

Hypothesis 3: There will be no relationship between motivational change as perceived by supervising teachers and the kind of setting in which student teaching occurs:
  a. Subject area involved
  b. Type of student teacher placement (e.g., with one supervising teacher, more than one, etc.)
  c. Size of community.

Hypothesis 4: There will be no relationship between pupil perception of motivational change and pupil perception of change in the following variables:
  a. How well the pupil understands the material
  b. Use of praise and encouragement
  c. Pupil participation in decision making
  d. Use of audio-visual media
  e. Awareness by the pupil of how well he is progressing
  f. Relevancy of classroom activities to the world outside the classroom
  g. Interest shown in the pupil as a person
  h. Teacher competency in the subject matter
  i. Variety of methods and procedures
  j. Individual help outside of class time
  k. Small group instruction
  l. Individual attention
  m. Introduction of new and different materials
  n. Discipline.

Hypothesis 5: There will be no relationship between changes in pupil motivation, as perceived by supervising teachers, and how well prepared the supervising teachers perceived the student teachers to be.

Definition of Terms

Motivation is used in its specific educational meaning of stimulating or arousing interest in a learning activity. The term motivation in its broader sense refers to the entire complex of psychological forces within a person which energizes

and underlies behavior. In that sense motivation is something which the learner brings with him to the learning situation. It is not in that sense, however, that the term motivation is used in this study, but rather in its more common meaning in current literature in education, i.e., as it has been defined in the first sentence in this paragraph.

Student teacher refers to the prospective teacher, most often a college senior, who is placed in an elementary or secondary school and assumes partial, and ordinarily increasing, responsibility for the learning experiences of some of the pupils in that school.

Supervising teacher refers to the regular teacher of the school under whose direction and supervision the student teacher works.

Administrator refers to the building principal or other official in the school or school system specifically responsible for student teaching.

Pupil refers to the elementary or secondary student, or learner. The term "student" is generally avoided in this study since in some cases there could be confusion as to whether it referred to student teachers or pupils.

Level refers usually to the three most common divisions in the educational sequence prior to the college years, i.e., elementary, junior high, and senior high. The term elementary refers to grades kindergarten through six, junior high refers to grades seven through nine, and senior

high refers to grades ten through twelve. The term secondary refers to junior high and senior high combined, or grades seven through twelve. It might be noted here that when elementary pupil perceptions are dealt with, this refers to perceptions based upon experiences with student teachers in grades five and six only, for reasons given in the next section.

Impact study refers to the Michigan "Student Teaching Impact Study."[1] For description see "Instrumentation" section of Chapter III.

Limitations

1. The data for student teacher, supervising teacher, and administrator perceptions are from the Michigan "Student Teaching Impact Study" (explained in Chapter III). The author did not take part in the planning or development of the instrumentation used in that study.

2. The supervising teacher group consisted entirely of supervising teachers of student teachers from one institution, Michigan State University. Although they were all associated with this one institution, Michigan State University presently has the largest teacher education program in the nation, in terms of numbers of certified graduates annually.

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[1] The Impact of Student Teaching Programs Upon the Cooperating Public Schools in Michigan (Lansing: Michigan Council of State College Presidents, 1970).

3. Pupil responses were based on pupils in schools selected as being typical schools in average socio-economic areas. No schools in unusually high or unusually low socio-economic areas were used. All pupils involved in the study were in the Grand Rapids Public Schools.

4. Elementary pupil responses were based only on fifth and sixth grade experiences with student teachers, as the pilot study indicated that many pupils below fifth grade had difficulty in understanding and responding to the questions utilized in the study.

Organization of the Study

In Chapter I, the need for the study, its purpose, hypotheses, definitions of terms, and limitations have been presented. Chapter II contains a survey of literature pertinent to this study, with regard to both motivation and effects of student teaching programs upon the schools. In Chapter III the methodology is detailed, including instrumentation, sample populations employed, and methods of collecting and analyzing the data. Chapter IV is a presentation and analysis of the data. Chapter V includes a summary of the study, a statement of conclusions, a list of implications, and suggestions for further research.

CHAPTER II

SURVEY OF PERTINENT LITERATURE

Since the subject of this study involves relationships between student teaching programs and pupil motivation, the literature falls quite naturally into two classifications, works dealing with pupil motivation, and those dealing with effects of student teaching programs upon pupils. The literature on motivation of pupils is surveyed first, followed by a summary of works dealing with the general effects of student teaching programs upon pupils.

Literature Dealing with Motivation

Although there is a very extensive body of literature on the general subject of human motivation, comparatively little has been done on academic motivation, i.e., principles of motivation which are directly applicable to school learning. And of the studies which do deal with academic motivation, the greatest share are concerned with intrinsic, or personality, factors, such as the self-concept of the learner. Since the present study attempts to relate motivation to methods and procedures in education

which, at least to a considerable degree, are able to be controlled directly by the teacher, this review of literature will also concentrate on studies which have related such controllable factors to motivation.

General works on educational psychology tend to include sections which deal with the subject of pupil motivation, and a few of these kinds of works will be examined first. Cronbach,[1] for example, suggests the following as a summary of principles of good classroom motivation:

> Every activity should lead to goals that the pupils are aware of and will want to attain.
> Goals should be within the pupils reach, and should seem attainable to them.
> The pupils should be able to judge whether or not they are attaining their goals and how they are falling short.
> Classroom activities should lead to satisfactions that pupils will also seek outside the classroom so that the learned actions will be used in non-school situations.

Bernard,[2] basing his recommendations on need theory, including that of Maslow, as well as on research findings, suggests a number of motivational techniques. These include use of praise and recognition according to the needs of the individual, attainable goals which are clear to the learners and toward which they will be able

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[1]Lee J. Cronback, Educational Psychology (2nd ed.; New York: Harcourt, Brace and World, 1963), pp. 525-526.

[2]Harold W. Bernard, Psychology of Learning and Teaching (New York: McGraw Hill Book Co., 1965), pp. 252-260.

to see their progress, novelty within the context of the routine and familiar (in order to satisfy both their self-actualization and security needs), and evaluation of pupil progress which is based on the pupil's ability and background, rather than interpersonal comparisons alone (in accordance with each child's need for belongingness and esteem), so that each child will be able to experience success at his own ability level.

In Learning Theories for Teachers, Bigge[1] stresses the importance of intrinsic motivation, as compared with external reward. By intrinsic motivation, he means the situation in which the material learned provides its own reward. He does concede, however, that it is also frequently necessary to utilize extrinsic kinds of motivation. Ausubel[2] states also that the trend in recent thinking with regard to motivation and classroom learning is toward emphasis on intrinsic motives such as curiosity, exploration, striving for competence, and need for stimulation. The most important kind of motivation for classroom learning, at least potentially, he says, is cognitive drive, or the desire for knowledge as an end in itself. The best form of motivation, accordingly, often is to

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[1]Morris L. Bigge, Learning Theories for Teachers (New York: Harper and Row, 1964), pp. 290-291.

[2]David P. Ausubel, "Motivation and Classroom Learning," Education, Vol. 86 (April, 1966), 479-483.

forget about motivation and to concentrate on teaching the learner something; then, having experienced success in learning material, he will be motivated to learn still more. Ausubel also states that the fundamentally very strong human drive for knowledge for its own sake has been complicated and weakened in our culture by the association of such extraneous factors as career advancement and ego enhancement with academic success.

Bruner also emphasizes the role of intrinsic factors in the motivation of learning. He defines an intrinsic motive as "one that does not depend upon reward that lies outside the activity it impels."[1] He sees a basic "will to learn" as one of the most fundamental and distinctive characteristics of human beings. Such natural forces as curiosity and desire for competence underly this will to learn.[2] Instead of utilizing these natural forces, however, the necessarily somewhat artificial atmosphere of the classroom often tends to restrain and stifle them with standardized programs, set curricula, and confinement of students in pre-determined courses and activities. The child's natural desire to learn can be strengthened, however, by an experience of success in mastering a topic in depth, as this experience in gaining competency provides

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[1]Jerome S. Bruner, Toward a Theory of Instruction (New York: W. W. Norton and Co., 1966), p. 113.

[2]Ibid., pp. 114-117.

satisfaction to the learner. With regard to process, Bruner wishes to encourage discussion, as in the give-and-take of a seminar, as being more motivating than having one expert at the front of the classroom relaying information to passive learners.[1]

Bruner also states in another work that a variety of approaches is important in motivating learners. Many excellent approaches to teaching can make interesting subjects dull if used exclusively. Some of the methods of teaching which can add variety and interest to the program include audio-visual devices, laboratory experiments, use of charts and models, dramatizations, and programmed teaching devices which can provide immediate feedback.[2]

Riessman,[3] a psychiatrist, states that different pupils have different learning styles, with the principal types being (1) a visual approach, (2) an auditory orientation, and (3) a style of learning through practical, physical activity. He feels that many learning difficulties which have been considered as "emotional blocks" or lack of motivation are simply due to failure to recognize individual differences in styles of learning.

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[1] Ibid., pp. 120-127.

[2] Jerome S. Bruner, The Process of Education (New York: Vintage Books, 1960), pp. 81-88.

[3] Frank Riessman, "Styles of Learning," National Education Association Journal, Vol. 55 (March, 1966), 15-17.

While not all material can be practically converted to all learning styles, attention to these differences in pupils may help to overcome some learning difficulties. Test taking is given as an example of an activity which can affect different children in very different ways. Whereas taking tests may stimulate some pupils to master a good deal of material in order to do well on them, they may cause other pupils to experience too much anxiety and disorganization, making them unable to work effectively.

De Roche,[1] in an article summing up a variety of motivational techniques, suggests capitalizing on curiosity and natural interests, setting immediate goals rather than relying on very long-term goals which may not seem relevant to the pupil, setting goals which are realistic enough so that all students can experience some success and avoid the frustration which results when goals are unattainable, using tests in ways which will be motivational as well as evaluative (e.g., writing encouraging comments on test papers), making the pupil aware of his own progress, and utilizing both competition and cooperation. He also states that no single technique will be successful in motivating every student.

What are some of the specific findings of research studies with regard to pupil motivation? The works which

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[1]Edward F. De Roche, "Motivation: An Instructional Technique," Clearing House, Vol. 41 (March, 1967), 403-406.

will be referred to in the rest of this section on the literature dealing with motivation are specific research studies focused on a particular hypothesis or problem. One of the earlier studies sometimes referred to as a "classic" in later writings is a study of the effects of praise and reproof by Hurlock.[1] A total of 106 fourth and sixth graders doing arithmetic problems were given three different treatments. One group was praised before the rest of the class both for improvement and for superiority to the rest of the class at the time test papers were returned; they were also encouraged to try to do still better and to avoid careless mistakes in their work. A second group was regularly reproved for poor work, carelessness, and lack of improvement. A third group was simply ignored, receiving neither praise nor reproof. The group which was consistently praised showed the greatest improvement during a series of tests; the group which was consistently reproved showed considerably less improvement; and the group which was ignored showed the least improvement. In a related study, Thompson and Hunnicut[2] attempted to

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[1]Elizabeth B. Hurlock, "An Evaluation of Certain Incentives used in School Work," Journal of Educational Psychology, Vol. 16 (March, 1925), 145-159.

[2]George G. Thompson and Clarence W. Hunnicut, "The Effect of Repeated Praise or Blame on the Work Achievement of 'Introverts' and 'Extroverts,'" Journal of Educational Psychology, Vol. 35 (May, 1944), 257-266.

determine whether or not there were differential effects of praise and blame upon fifth graders of two different personality types--introverts and extroverts. They found that over a period of time praise was more effective than blame in increasing the work output of introverts, but blame was more effective than praise with extroverts.

An interesting study was done by Witty[1] based on 12,000 letters written by pupils from grades two through twelve on the topic, "The Teacher Who Has Helped Me Most." Although these letters, which were written in response to a suggestion on a nationally broadcast radio quiz program, were perhaps not on the precise subject of motivation, it does seem of interest to include the findings here since this is one of comparatively few studies which utilized open-end responses in attempting to describe effective teaching as perceived by pupils. It was found that twelve traits of the teachers perceived as having been most helpful were most often mentioned in the letters. These, beginning with those most frequently mentioned, were (1) cooperative, democratic attitude, (2) kindliness and consideration for the individual, (3) patience, (4) wide interests, (5) pleasing manner and appearance, (6) fairness and impartiality, (7) sense of humor, (8) good disposition and consistent behavior, (9) interest in pupils' problems,

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[1]Paul Witty, "An Analysis of the Personality Traits of the Effective Teacher," Journal of Educational Research, Vol. 40 (May, 1947), 662-671.

(10) flexibility, (11) use of recognition and praise, and (12) unusual proficiency in teaching a particular subject.

A comparison of the effectiveness of two different teaching approaches, directive and structured versus non-directive and unstructured, upon differing personality types was done by Smith.[1] The subjects were college students in a non-credit reading improvement course, and increase in reading efficiency was used as the criterion. Students who were classified as anxious and permeable (i.e., flexible) were found to make more progress with directive methods. However, for the students classified as anxious and impermeable (i.e., inflexible or rigid) no significant difference in progress was found between those taught with the directive approach and those taught with the non-directive approach.

Another study involving two different teaching methods with college students was done by McKeachie.[2] The subjects were students in the general psychology course at the University of Michigan. One method of instruction was highly group-centered, with the students being given the power to make decisions regarding assignments and class activities. During discussions students were encouraged

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[1]Donald E. P. Smith, et al., "Reading Improvement as a Function of Student Personality and Teaching Method," Journal of Educational Psychology, Vol. 47 (January, 1956), 47-59.

[2]Wilbert J. McKeachie, "Students, Groups, and Teaching Methods," American Psychologist, Vol. 13 (October, 1958), 580-584.

to make comments to each other rather than to the instructor. The other method was traditionally instructor-centered, with the decisions which had been made freely by the group in the first type of situation being imposed by the instructor in the second (control) type of class. Final examination scores showed no significant differences in achievement between the two types of classes. However, in one part of the experiment in which two clinical psychologists appraised participation in discussion after the showing of the film "Feeling of Rejection," students in the group-centered class were judged to show greater insight and to be less defensive and frightened than those in the instructor-centered class.

The effect which teacher comments written on test papers had upon pupil motivation was examined in an experiment by Page.[1] Over 2,000 students in grades seven through twelve in 74 classrooms were involved. When test papers were returned, one group of students received, in addition to the usual grade, a specified comment for each letter grade. A grade of "B", for example, was always accompanied by the standard comment, "Good work, keep at it," while a "D" would be accompanied by the comment, "Let's bring this up." A second group of students in each

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[1]Ellis B. Page, "Teacher Comments and Student Performance: A Seventy-Four Classroom Experiment in School Motivation," Journal of Educational Psychology, Vol. 49 (August, 1958), 173-181.

class received "free comments," i.e., anything which the teacher felt it would be appropriate to write. A third group received no comments. Scores on the next test taken by these pupils in the same classes were then compared with scores on the earlier test. It was found that the students who had received free comments obtained the highest scores, those who had received standardized comments scored next highest, and those students who had received no comments scored lowest.

The effect of discovery learning upon motivation was investigated by Kersh.[1] A group of 90 high school students were taught two new rules of addition (by programmed instruction). One-third of these students were later given individual assistance in discovering the explanation for the rules. Another third were taught the explanation of the rules by programmed procedure, and the remainder of the students were given no further instruction at all. Motivation, as measured by practicing of the rules between the initial learning period and the test period (determined by questionnaire) was highest with the discovery-learning group.

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[1]Bert Y. Kersh, "The Motivating Effect of Learning By Directed Discovery," Journal of Educational Psychology, Vol. 53 (April, 1962), 65-71.

An experiment by Wallen[1] was designed to determine whether the motivational power of an incentive is related to the source of the incentive. Approximately 500 third and sixth graders were involved in the experiment. Incentives, in the form of colored stars or humorous drawings depicting satisfaction, dissatisfaction, or an in-between condition, were used. The standards for award of the incentives were issued by the teacher for one group, determined by each individual for himself in a second group, and determined by group consensus for the third group. No significant differences were found between groups, and it was concluded that group-issued incentives are no more motivating than those issued by the teacher or by the individual to himself.

Van de Riet[2] conducted a study in which he assessed the effects of praise and reproof on children classified as "severely underachieving." The subjects were 45 underachieving and 45 matched non-underachieving (normal) pupils in grades four through six. It was found that praise resulted in slower learning when used with the

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[1]Carl Wallen, "Teacher, Individual and Group Issued Incentives and Pupil Performance: A Nineteen Classroom Experiment in Motivation," Journal of Educational Research, Vol. 57 (April, 1964), 413-416.

[2]Hani Van de Riet, "Effects of Praise and Reproof on Paired-Associate Learning in Educationally Retarded Children," Journal of Educational Psychology, Vol. 55 (June, 1964), 139-143.

underachievers, but in faster learning when used with the non-underachievers. Reproof, on the other hand, resulted in faster learning when used with the underachievers, but in slower learning for the non-underachievers.

A study of motivation conducted by Frymier[1] utilized an open-end questionnaire. About 1050 pupils in elementary, junior high and senior high schools were asked to complete the sentence, "I try to do good work in school when . . ." After the responses were tabulated, it was found that about 26 percent of them were related to the teacher, about 38 percent to the student himself (such as how he felt at the time), and the other 36 percent to various external factors. Five kinds of responses made up about half of the total number. These were responses involving interest in the subject matter, liking the teacher and the subject, grades and other forms of recognition, the student's physical and emotional status, and the physical factors in the classroom situation (light, temperature, distractions, etc.). Frymier concludes:

> Since youngsters are motivated by a whole host of factors, and since no single factor seems to be especially important to a sizable segment of any group, teachers should be urged to select and devise a variety of instructional techniques in their efforts both to tap and create students' motivations to do good work in school. . . . The

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[1]Jack R. Frymier, "A Study of Students' Motivation to do Good Work in School," Journal of Educational Research, Vol. 57 (January, 1964), 239-244.

> most effective teacher will be that one who is most able to "fit" his instructional techniques to each child's unique needs.[1]

Another attempt to study motivation by obtaining direct responses from pupils with regard to their perceptions was carried out by Patton and De Sena.[2] A group of 155 eleventh grade students were asked to select one teacher who, in the course of their school career, they felt had motivated them. Motivation was explained for the students in several ways, including "that which caused them to . . . learn more than they originally thought they would."[3] They were then asked to list, in order of preference, the qualities which they felt this motivating teacher possessed. The qualities most often mentioned, in order of frequency, were (1) sense of humor, (2) talking on pupils' level, (3) variety, (4) knowledge of the subject, (5) making pupils work, (6) friendly, (7) being interested in the individual, (8) respect for pupils' intelligence, (9) giving help at any time, (10) understanding the pupils, (11) making the course interesting, (12) having good discipline, (13) being a fair grader, and (14) being not overly strict.

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[1] Ibid., p. 242.

[2] Robert A. Patton and Paul A. De Sena, "Identification Through Student Opinion of Motivating and Nonmotivating Qualities of Teachers," Journal of Teacher Education, Vol. 17 (Spring, 1966), 41-45.

[3] Ibid., pp. 41-42.

White and Dekle[1] attempted to determine whether highly motivated and less motivated children perceived teachers differently. Their subjects were 158 children in fifth, sixth, and seventh grade. Pupils high and low in motivation (also referred to as overachieving and underachieving, respectively) were identified by comparisons of performance on the California Test of Mental Maturity and the California Achievement Test. All pupils in the study were asked to rate their teachers, using the Pupil Observation Survey, developed by Veldman and Peck.[2] Twelve teachers, all female, were thus rated. Of the six classifications of teacher behavior included in that instrument, only one was perceived differently by pupils high and low in motivation, the factor called "Warm, affable, deferring." The highly motivated pupils tended more toward perceiving the teachers as being warm and affable, while the pupils low in motivation tended to perceive the same teachers as being toward the other end of the scale, that is, of being more cold, unfriendly, and unconcerned.

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[1]William F. White and Ocie T. Dekle, "Effect of Teacher's Motivational Cues on Achievement Level in Elementary Grades," Psychological Reports, Vol. 18 (April, 1966), 351-356.

[2]Donald J. Veldman and Robert F. Peck, "Student Teacher Characteristics from the Pupils' Viewpoint," Journal of Educational Psychology, Vol. 54 (1963), 346-355.

Another study of the effects of praise and reproof on motivation was done by Anderson, White, and Wash,[1] with 52 female university students as the subjects. They found that praise was more effective than reproof in improving performance. This was true for the total group, and also for both the high-achieving and low-achieving groups separately. The results for the low-achievers were contrary to their hypothesis regarding that subgroup. This hypothesis had been based on Van de Riet's study, referred to earlier, in which it had been found that praise actually reduced the performance of underachievers. The explanation appears to lie in the fact that Van de Riet studied severely underachieving elementary pupils, whereas this study utilized a college student population, where it seems probable that few, if any, of the subjects would have been as severely underachieving as those used in the Van de Riet study.

Two recent experiments have been concerned with differential effects of motivational procedures upon middle-class and lower-class children. Rosenhan,[2] basing his

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[1]Harry E. Anderson, William F. White, and James A.Wash, "Generalized Effects of Praise and Reproof," Journal of Educational Psychology, Vol. 57 (June, 1966), 169-173.

[2]David L. Rosenhan, "Effects of Social Class and Race on Responsiveness to Approval and Disapproval," Journal of Personality and Social Psychology, Vol. 4 (1966), 253-259.

work on an interaction theory of social class behavior, hypothesized that lower-class children, as compared to those from the middle-class, might be more uncomfortable and alienated in the middle-class environment of the school. If this were true, he further hypothesized, then lower-class children, relative to middle-class children, should find praise more facilitating to performance and disapproval more disruptive and hindering to the progress. In his experiment, in which he used 72 first grade boys as the subjects, the hypothesis was substantiated. The performance of lower-class children improved more than that of middle-class children after being praised, and lower-class boys performed more poorly than middle-class boys when subjected to disapproval. Rucinski[1] compared two kinds of motivating procedures, praise and knowledge of results, when used with middle- and lower-class fifth graders. The exercise involved was simply crossing out as many "7's" as possible in a short time from long lists of numbers. He found that lower-class children did not do better under the praise condition than under the knowledge-of-results condition. This was contrary to what he had hypothesized. However, middle-class boys, as

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[1]Philip R. Rucinski, "The Motivating Effect of Two Reinforcers Upon Lower- and Middle-Class Fifth Grade Children," Journal of Educational Research, Vol. 61 (April, 1968), 368-371.

predicted, increased their scores more under the knowledge of results condition than they did when they were praised.

Bennie[1] studied the effects of praise and qualified praise upon both level of aspiration and performance of 68 first graders classified as disadvantaged. The subject area utilized was spelling. He found that both praise and qualified praise had a significant effect in raising the level of aspiration of these disadvantaged children. Improvement in performance, as measured by the number of words spelled correctly, was slight, however, and not sufficient to be statistically significant.

Another recent study of the effect of teaching methods upon pupil motivation was done by Lutenbacher,[2] who investigated the effects of team teaching programs upon the motivation, attitude and achievement of 600 eighth and ninth grade pupils in Social Studies and English classes. Motivational change was measured by the Motivation Analysis Test. Control groups were each taught by one teacher in the conventional classroom situation. He found that, although the differences were not statistically

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[1]Donald E. Bennie, "The Use of Praise and Qualified Praise in Teaching Disadvantaged Children" (unpublished Ed.D. dissertation, Indiana University, 1969).

[2]David A. Lutenbacher, "An Investigation of the Effect of Team Teaching Upon Achievement, Motivation and Attitude" (unpublished Ed.D. dissertation, University of Southern Mississippi, 1969).

significant, the students who experienced the team teaching procedures scored at least as well as those taught in the conventional manner.

Literature Dealing with Effects of Student Teaching Programs on the Pupils

One of the purposes of the present study is to increase our knowledge of factors related to motivation in the classroom, and, accordingly, pertinent studies which deal with motivation in school learning situations have been examined. Since the other purpose of the study is to extend our knowledge of the effects of student teaching programs upon the pupils and schools involved, previous literature regarding that subject will be reviewed also.

One of the studies in which pupils were asked for their reactions regarding student teaching programs was done by Sharpe,[1] who administered questionnaires to pupils in secondary schools who had had student teachers from Indiana State University. Of 260 pupils who responded to a questionnaire item asking for a general reaction to student teachers they had had, 150 gave favorable responses, 78 indicated qualified approval, and 32 indicated general disapproval. Some of the favorable responses included

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[1]Donald M. Sharpe, "The Pupils Look at the Program," Thirtieth Yearbook of the Association for Student Teaching (Lock Haven, Pa.: The Association, 1951), pp. 104-121.

comments about new approaches and new ideas, more time for individual help, and a tendency of student teachers to make classes more lively and interesting. Of the comparatively small group of 32 pupils who gave generally disapproving responses, the most common kinds of comments were that the pupils did not learn as much, that their student teachers made classes less interesting, and that discipline was poorer. Another group of 165 pupils in off-campus schools, using a different form of the questionnaire, rated student teachers as "Outstanding," "Satisfactory," or "Needs Improvement" with respect to a number of categories. With respect to the statement "Made the class interesting," 67 checked "Outstanding," 78 "Satisfactory," and only 18 "Needs Improvement." With regard to how well the student teacher "knew the subject he taught," 76 checked "Outstanding," 82 "Satisfactory," and only 6 "Needs Improvement." With respect to keeping the class in order, 31 rated the student teachers "Outstanding," 120 "Satisfactory," and 12 "Needs Improvement." In another section of this questionnaire, these pupils were asked to respond on a "yes" or "no" basis to the question "Would you like to have a student teacher in one of your classes another year?" This was followed by the question "Why?" Of the 145 pupils who responded on this item, 120 checked "yes" and only 25 responded "no." Over a third of those who responded positively gave reasons relating to making

classes more interesting or enjoyable. Many also stated that there was more individual help or attention. Of the much smaller group which responded negatively to this question, about half gave reasons relating to not learning or progressing as well as they had with the regular teacher.

Daniel and Compton[1] administered a questionnaire regarding pupil reactions toward student teachers to 2,090 pupils in public high schools and 114 pupils in a campus laboratory school. All of the pupils had been taught by student teachers from Southwest Missouri State College, which had initiated its off-campus student teaching program only a year before the study was done. They found that 75 percent of both groups of pupils reported that they liked having student teachers in some of their classes. They also found that pupils in the off-campus public schools had significantly more positive attitudes toward student teachers than did the pupils in the on-campus laboratory school.

A study of administrator and supervising teacher opinions regarding the effect of the presence of student teachers upon school programs was carried out by Del Popolo

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[1]K. Fred Daniel and Ronald Compton, "Reactions to Student Teachers," School and Community, Vol. 51 (November, 1964), 23.

and Hillson[1] in areas of Pennsylvania and New York. It was determined that 80 percent of the supervising teachers questioned felt that the quality of classroom programs was improved due to the presence of the student teachers. Eighty-seven percent of them stated that more teaching time was available because of assistance with group work by student teachers, and 83 percent indicated that student teachers had contributed to the welfare of the pupils. It was also the consensus of the administrators involved in the study that having student teachers working in the building was beneficial and enriching to the total school program.

A study was done by Fulp[2] in which he attempted to determine the effect of student teaching upon pupil achievement. The achievement of nine experiemntal groups, which were being taught by student teachers, was compared with the achievement of nine control groups, taught by the regular staff. A total of 508 high school pupils, in nine different subject areas, were involved in the experiment. His study found no significant difference between the achievement of the groups which had been instructed by the

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[1]Joseph A. Del Popolo and Maurie Hillson, "Student Teaching and the Role of the Public Schools," New York State Education, Vol. 51 (March, 1964), 14-16.

[2]Kenneth E. Fulp, "What Is the Effect of Student Teaching on the Achievement of Pupils?" Bulletin No. 22 of the Association for Student Teaching (Cedar Falls, Iowa: The Association, 1964), pp. 161-162.

student teachers and that of the groups which had been instructed by the regular staff.

One of the benefits to pupils that can result from the presence of student teachers in the school is pointed out by Tanruther,[1] Chairman of the Association for Student Teaching's Commission on Inservice Education of the Supervising Teacher. In an article in the Forty-fifth Yearbook of the association, he states that, among other benefits to the cooperating school, a supervising teacher and student teacher working together often bring a new degree of enthusiasm to the process of education which can be of significant benefit to the pupils with whom they are working.

A study of pupil reactions to student teachers carried out by Drake and Kraft[2] utilized 365 pupils in 13 different school districts in Illinois. In response to a series of statements regarding student teachers, the pupils could check one of four different alternatives. They could strongly agree, mostly agree, mostly disagree, or strongly disagree with the statements. In the tabulations, the two kinds of agreement were combined, as were

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[1]Edgar M. Tanruther, "Facilitating Inservice Education," Forty-fifth Yearbook of the Association for Student Teaching (Cedar Falls, Iowa: The Association, 1966), p. 74.

[2]Thelbert L. Drake and Leonard E. Kraft, "How Do Students Feel about Student Teachers?" Illinois Education, Vol. 55 (November, 1966), 106-107.

also the two different intensities of disagreement. A total of 91 percent agreed with the statement, "Generally student teachers' instruction is good." By the same percentage, the pupils agreed that they looked forward to having a student teacher. It was felt by 88 percent of these pupils that student teachers explained material well, and by 83 percent that having a student teacher had been "beneficial" to them. The lowest percentages of agreement with the statements came with respect to two statements involving personal concern for and rapport with the pupils. Only 62 percent of the pupils expressed agreement with the statement, "Student teachers seem concerned about me as an individual person," and only 56 percent agreed with the final statement, "I feel free to discuss with student teachers personal problems that affect my schoolwork."

Greene[1] and others in the Department of Student Teaching at Northern Illinois University asked college students who had recently completed student teaching what benefits they felt student teaching programs had brought to the pupils, to supervising teachers, and to the school and community. A free response questionnaire used for this purpose was returned by 476 former student teachers. Both

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[1]Gwynn Greene, et al., "Student Teaching: Do the Participating Schools Benefit?" Illinois Education, Vol. 55 (November, 1966), 107-109.

elementary and secondary levels were included. Responses from a total of 76 percent of them indicated that, in their opinion, they had benefited the pupils by introducing viewpoints, methods, procedures, or materials that were different from those which had been employed by the regular teacher. The other very frequent kind of response, given by a total of 73 percent of the group, was that the presence of two adults working in the classroom resulted in more individual attention to pupils than would otherwise have been possible. Since they were only asked about benefits which accrued from their presence and activities, there was no opportunity for the respondents to indicate any adverse results or problems which might have come about as a result of student teaching.

Rich[1] questioned supervising teachers and administrators in Davenport, Iowa, and surrounding communities, as to their reactions to the student teaching program being conducted in the schools of that area by Western Illinois University. The responses most often given by the supervising teachers were very similar to those received by Greene from the student teachers in his study. The two responses most frequently given in Rich's free-response questionnaire were that student teachers

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[1]Victor J. Rich, "The Evolving Student Teaching Program at Western Illinois University and an Assessment of the Quad-Cities Resident Student Teaching Center" (unpublished Ed.D. dissertation, Michigan State University, 1967), pp. 80-84.

introduced helpful new ideas, methods, and techniques, and that the pupils profited from more individual attention. The administrators of participating schools also reported that the presence of student teachers tended to improve the morale and professional spirit of the staff and make them more open to suggestions and new ideas. While responses in the study were overwhelmingly positive, a few of the respondents did mention problems which resulted from student teaching, including a slower pace in teaching when the student teachers were working.

The effect of student teaching upon pupil achievement was studied by Rutherford.[1] In his study 185 pupils who had student teachers made up the experimental group, and another 199 pupils made up the control group. All of the pupils in this study were fourth graders. Of a large number of variables which Rutherford analysed for their effect upon pupil achievement scores, he found that pupil intelligence was the only one which significantly affected pupil achievement. Student teaching was found to have no significant effect upon pupil achievement. Thus the fourth graders in this experiment, like the high school students studied by Fulp in the research referred to earlier, were

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[1]John A. Rutherford, "The Effect of Student Teaching Upon Pupil Achievement in Selected Fourth Grade Classrooms" (unpublished Ed.D. dissertation, University of Virginia, 1967).

found to achieve as well with student teachers as they did with their regular teachers.

A study only partially related to the present study was done by Stagg,[1] who was primarily investigating problems of student teachers and student teaching programs. He sent questionnaires to supervising teachers, administrators, college supervisors, and elementary and secondary student teachers associated with all eight teacher training institutions in the state of Montana. Although the major focus of his investigation dealt with specific problems which he found to exist in student teaching programs in Montana, such as inadequate communication between teacher training institutions and cooperating schools, and a lack of clarity concerning the roles to be played by the various members of the teams involved in student teaching programs, some of his findings are of interest to this study. He found that, with respect to the student teachers in his study, they had used audio-visual media significantly more than their supervising teachers did, and also that they were more willing to experiment.

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[1]George F. Stagg, "Problems of Student Teachers" (unpublished Ed.D. dissertation, Montana State University, 1968).

Barberi[1] studied reactions to student teaching programs on the secondary level by 1,418 pupils, 79 parents, 59 teachers, and 19 administrators in the public schools of Mt. Pleasant, Michigan. He found positive attitudes toward the utilization of student teachers by all four groups. The pupils and supervising teachers were found to have the most favorable perceptions of student teaching programs, while administrator perceptions were somewhat less favorable and parent perceptions were least favorable. Among the pupils, it was found that those in grades seven through ten perceived student teaching programs most favorably. The perceptions of eleventh and twelfth graders were slightly less favorable, but this difference was not sufficient to be statistically significant. With respect to amount of individual attention, Barberi found that 32 percent of the pupils reported that there was more individual attention when student teachers were present, as compared with only 11 percent who said that there was less (45 percent said that it was about the same and 11 percent had no opinion). The areas in which student teachers tended to be rated lowest were

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[1]Carlo C. Barberi, "A Study of the Acceptance of the Secondary Student Teaching Program as Perceived by Faculty, Administrators, Parents and Pupils in the Mt. Pleasant Public Schools, Mt. Pleasant, Michigan" (unpublished Ed.D. dissertation, Michigan State University, 1969).

subject-matter competence, ability to deal with discipline problems, and over-all quality of instruction.

Marcus,[1] who worked with the data from the Michigan Student Teaching Impact Study,[2] as did the author of the present study, found reactions of supervising teachers, student teachers, and administrators all to be positive toward student teaching programs. The responses were favorable in all six of his categories: instructional activities for pupils, school activities outside the classroom, assistance to regular staff in certain activities, effect upon the performance of supervising teachers, staff morale, and attitude of teachers and administrators toward student teaching. He concluded that his central hypothesis, "Student teaching programs are perceived as favorable to Michigan cooperating schools," was substantiated by the data.

A recent study by Veldman[3] is one of very few in which pupils were asked to compare specific student teachers with their supervising teachers (as was done in the present

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[1]Clifford M. Marcus, "Contributions of Student Teaching Programs to Michigan Cooperating Schools as Perceived by Student Teachers, Supervising Teachers, and Administrators" (unpublished Ph.D. dissertation, Michigan State University, 1970).

[2]See description of the Student Teaching Impact Study in Chapter III, pp. 46-47.

[3]Donald J. Veldman, "Pupil Evaluation of Student Teachers and Their Supervisors," Journal of Teacher Education, Vol. 21 (Summer, 1970), 165-167.

study). The pupils were seventh graders in 55 classes in the public schools of Austin, Texas. Each pupil completed a questionnaire (the Pupil Observation Survey Report, a 38-item questionnaire developed by Veldman) twice, once to describe the student teacher working there during that term, and once to describe the regular (supervising) teacher. In a general evaluation score yielded by the instrument, the student teachers were rated slightly higher than the supervising teachers, but not significantly so. The student teachers were rated significantly higher than their supervising teachers with respect to two factors, involving being friendly and cheerful, and being lively and interesting. However, the pupils rated the supervising teachers significantly higher in three other factors, involving being knowledgeable and poised, having firm control, and being nondirective. In another interesting part of the study, Veldman computed correlation coefficients between the scores of the student teachers and those of their respective supervisors on each of the six factors measured by the instrument, as a test of the degree to which the supervising teachers might be influencing the behavior of the student teachers. On only two of the six factors, however, involving having firm control and being nondirective, were these comparative scores of the student teachers and their supervising teachers found to be correlated significantly.

Summary

The literature related to the study was divided into two parts, the first of which was the literature dealing with pupil motivation. It was found that generally writers in educational psychology have tended to stress several basic principles of good motivation in classroom teaching. These principles included use of praise and recognition, having clear and attainable goals, making pupils clearly aware of their progress toward the goals, making education relevant to the world outside the classroom, utilization of a variety of techniques and approaches, and making it possible for the learner to experience success in mastering material.

Specific research studies have attempted to determine the effect of various teaching techniques and procedures upon motivation. The greatest number of such studies have been done with respect to the effects of praise or disapproval upon motivation, both upon learners in general and upon learners divided into various subgroups. Researchers have found that praise was generally more effective than disapproval in improving motivation, but that either praise or disapproval was more effective than not using either one. It was also found that praise tended to be more effective with introverts, but disapproval tended to be more motivating with extroverts, and also with underachievers. Research has also shown that praise

tended to be a more effective motivator with lower-class pupils than with middle-class pupils.

Studies in which pupils were asked to describe teachers who motivated or otherwise helped them have found that the kinds of things most frequently mentioned included a cooperative and democratic attitude (on the part of the teacher), kindness and consideration for the individual, wide interests, sense of humor, talking on the pupils' level, a variety of procedures in the classroom, competence by the teacher in the subject matter, and interest in the pupils and respect for them as individuals.

Other areas of research with regard to motivation have found that group-centered classes have shown some better outcomes than instructor-centered classes, that teacher comments, especially personalized ones on test papers, tended to improve pupil performance, that pupils classified as "anxious and flexible" tended to do better with directive teaching techniques than with nondirective ones, that discovery learning aided by tutorial assistance was more motivating than programmed instruction, and that knowledge of results was more effective (with middle-class boys) than praise.

The second part of the survey of related literature was a summary of works dealing with the effects of student teachers and student teaching programs on the learner. The effects of student teaching programs on pupils have

been investigated by obtaining responses from groups of pupils, student teachers, supervising teachers, administrators, college supervisors, and parents. All of these groups indicated a predominant feeling that student teaching programs bring many positive benefits to pupils, and that the process of education is either improved, or, at least, remains equally good, when student teachers are put into the situation. Two of the studies reviewed compared pupil achievement with and without the presence of student teachers; both of these studies concluded that student teaching programs did not significantly change pupil achievement.

Some of the benefits to pupils which were perceived by respondents in the studies reviewed included new ideas, materials, methods, or viewpoints, more individual help or attention, more opportunities for group work, an increase in interest, greater willingness to experiment with new programs, greater use of audio-visual media, and enhanced opportunities for teacher help or assistance to pupils outside of the classroom. On the other hand, there were also respondents who indicated that they felt that there were weaknesses or problems brought about by student teaching programs. Student teachers were seen as sometimes being less competent in the subject matter, as being less able to deal capably with discipline problems in order to maintain adequate control, and as sometimes

bringing about less learning or a slower pace in learning. The studies, nevertheless, tended to find many more positive than negative reactions with regard to the influence of student teachers upon the pupils with whom they worked.

CHAPTER III

METHODOLOGY

This chapter includes a discussion of the instrumentation utilized in the study, the sample populations employed, and the procedures involved in collecting and analyzing the data.

Instrumentation

The instruments utilized in collecting data with regard to student teacher, supervising teacher, and administrator perceptions were developed and administered in the Michigan "Student Teaching Impact Study" (full title: The Impact of Student Teaching Programs Upon the Cooperating Public Schools of Michigan),[1] also referred to hereinafter simply as the "Impact Study." This study originated with a request by the Presidents of state-supported colleges and universities in Michigan, to the Deans of Education and Directors of Student Teaching, for a study regarding the effects of student teaching programs upon the cooperating elementary and secondary schools. The committee set up to implement this study consisted of Dr. Malcolm Lowther, Chairman of the School of Education

[1] Impact of Student Teaching Programs upon the Co-operating Public Schools in Michigan (Lansing: Michigan Council of State College Presidents, 1970).

Undergraduate Committee, University of Michigan, Dr. Alan Quick, Director of Student Teaching, Central Michigan University, and Dr. W. Henry Kennedy, Director of Student Teaching, Michigan State University, Chairman. This committee, with the assistance of educational researchers at these three universities, developed three parallel instruments designed to determine the perceptions of supervising teachers, student teachers, and administrators with regard to the question of the effects of student teaching programs upon the cooperating schools. One of the questions on all three forms of the instrument which was developed dealt with the effect of student teaching on pupil motivation. The responses in the "Impact Study" to the questions on motivation, as well as others hypothesized to be related to motivation, have been utilized in this study. The form of the "Impact Study" questionnaire which was used most extensively in this study is the one designed for supervising teachers, and this form is found in Appendix A. The format of the key question (for this study) on motivation differed slightly in the administrator and student teacher forms of the instrument, and the format in which it appeared in those two forms is therefore shown in Appendix B. The "Impact Study" did not include any attempt to determine pupil reactions to the questions involved.

In order to assess pupil reactions, particularly with regard to the effect of student teaching on motivation and the variables hypothesized to be related to motivation, the author developed the "Student Questionnaire on Motivation" (also referred to herein simply as the "pupil questionnaire"), which is contained in Appendix C. This instrument was designed to present to pupils some of the same questions which were submitted to the other three groups of respondents by means of the previously described instrument. A few changes were made in the format of the questions for the purpose of greater clarity. For example, although the term "motivation" was not defined on the questionnaires given to the first three groups of respondents, it was parenthetically defined as "interest" on the pupil questionnaire. A number of questions not included in the "Impact Study" were incorporated into the pupil questionnaire in order to test additional variables for possible relationships to motivation, from the point of view of pupil perceptions. These additional variables were either suggested by other research or literature on motivation, or were simply hypothesized in this study. The variables included were factors which, to at least some degree, are under the control of the teacher as he makes plans for learning activities and implements those plans.

Population

The student teacher population consisted of all student teachers in Michigan during the 1969-70 academic year. The sample consisted of the 4,390 student teachers who responded to the question on motivation in the "Impact Study" previously described. The administrator population consisted of building principals or other administrators in charge of student teaching programs in cooperating elementary and secondary schools in Michigan at the same time. The administrator sample consisted of the 985 administrators who responded to the question on motivation in the "Impact Study" instrument. The supervising teacher population consisted of the supervising teachers of Michigan State University student teachers during the same academic year. The supervising teacher sample consisted of the 569 supervising teachers of that group who responded to the question on motivation in the "Impact Study." The pupil population consisted of pupils in the Grand Rapids Public Schools in September, 1970, who attended schools in socio-economic areas which were considered by school officials to be typical, or average; schools in unusually high or low socio-economic areas were not used. The pupil sample consisted of 376 pupils in such schools who completed the "Student Questionnaire on Motivation." The pupil sample included 119 senior high, 145 junior high, and 112 elementary pupils. No elementary pupils below fifth grade were included, for reasons given in the next section.

Procedures

Pilot Study

Pilot studies were carried out both in the development of the instrumentation of the "Impact Study" and also in developing the "Student Questionnaire on Motivation." In both cases changes and refinements were made as a result of the pilot studies. In the pilot study involving the pupil questionnaire, it was found that elementary students below fifth grade had difficulty understanding and answering some of the questions; elementary pupils below fifth grade therefore were not utilized in the main study.

Collection of Data

The instruments in the "Impact Study," described above, were administered during the fall term or semester of the 1969-70 academic year. All 31 teacher education institutions in Michigan participated in the study. College and university coordinators of student teaching assisted in distribution of the questionnaires to student teachers, supervising teachers, and administrators in the cooperating schools. (The author of this study was not involved in either the development or the administration of the instruments in the "Impact Study.")

The "Student Questionaire on Motivation" was administered during September, 1970. Schools were selected

on the basis of two criteria: (1) being broadly representative of average or typical socio-economic areas, rather than unusually high or low ones, and (2) having had during the previous year at least an average number of student teachers, representing some variety of teacher training institutions. In consultation with the Director of Research and officials in charge of student teacher placement in the Grand Rapids system, it was decided to use Buchanan, Brookside, and Alger elementary schools, Riverside and Burton junior high schools, and Creston High School. Teachers in these schools administered the questionnaire to complete classes during regular class time. In the questionnaire itself, pupils were instructed to base their responses on their most recent experience with a student teacher. The questionnaires were given in early September (1970), before any student teachers for that term had begun working; thus pupils were evaluating experiences which they had had with student teachers during the previous school year. The reason for administering the questionnaire at that time was that a given number of pupils in September, having just been reshuffled into many different classes, would be describing experiences with a much greater number of different student teachers (especially at the secondary level) than would be the case if entire classes evaluated a student teacher working with them at the time. It was estimated that the pupils

were thus reacting to a total of approximately 55 different student teachers who had worked with them during the previous year. In all cases in which pupils had not had a student teacher within the previous year (as determined by one of the questions in the instrument), the questionnaires were discarded.

Analysis of Data

All data obtained were transferred to computer cards. The data were processed, tabulated, and analyzed by means of the Control Data Corporation 3600 and 6500 computers at the Michigan State University Computer Center. Nearly all of the calculations were performed by these computers. For some of the computations, however, hand calculators and slide rules were used, primarily in doing the t-tests of significance comparing obtained means with hypothesized means.

The more intensive analyses, including correlational studies, were done with the data from two of the groups of respondents, the pupils and the supervising teachers. The reasons for this are as follows. Of the four groups of respondents involved in the study, it seemed that the pupils were in the very best position to make comparative evaluations concerning differences between the ordinary situation (without a student teacher) and the situation when a student teacher was present, both in terms of seeing the entire picture most completely and

probably also in terms of having comparatively little reason, if any, for bias in favor of either the student teacher or the supervising teacher. (It would be conceded, on the other hand, that pupil perceptions might be handicapped by lack of maturity and by a possible "halo effect" in which a personal like or dislike might tend to affect many of their responses.) Of the remaining three groups of respondents, it seemed that the supervising teachers, although subject to possible bias because, to at least some degree, they were comparing student teachers with themselves, nevertheless were in a better position than were either student teachers or administrators to see comprehensively and in detail the entire situation both with and without the presence of student teachers, particularly with regard to possible changes in pupil motivation and related variables.

Further discussion of types of calculations and statistical procedures used in this study is included in the Introduction to Chapter IV.

Summary

Instrumentation developed in the Michigan "Student Teaching Impact Study" was utilized for gathering the data by which the perceptions of student teachers, supervising teachers, and administrators were determined. A "Student Questionnaire on Motivation" was developed by the author

to study pupil perceptions. The samples utilized in the study included 4,390 student teachers, 985 administrators, 569 supervising teachers, and 376 pupils. The data which were collected were analyzed primarily by computer.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

This study has, as has been indicated, two principal purposes. The first of these is to add to our knowledge concerning the effects of student teaching upon the schools, and especially those aspects of student teaching which involve, or are related to, motivation. The second purpose is to learn more about motivation itself. Does motivation of learners change when a student teacher enters the situation? If it does change, in either direction, do other variables change in any significantly close relationship to motivational change?

In dealing with the first kind of question, analyses were carried out on responses to the questionnaire items which, in most cases, range along a five-point scale in which a "1" response indicates a substantial increase or improvement in this variable during student teaching programs, a "2" response indicates some change in this direction, a "3" response indicates no change, a "4" response indicates some decrease or worsening, and a "5" response indicates a strong change in this direction. A mean of 3.00, then, would indicate a mean perception of no

change, a mean less than 3.00 indicates a change in the direction of increase or improvement in this variable during student teaching programs, and a mean greater than 3.00 indicates a decrease or a less satisfactory situation with respect to this variable, as perceived by the group whose responses are being analyzed. In addition to means, standard deviations, the most commonly employed measure of variability, were also calculated.

After means and standard deviations were determined, the next question to be dealt with was whether or not the difference of the mean from 3.00 (no change) was sufficiently large so as to be a significant one. A small difference would most probably be a mere chance characteristic of the sample employed; a large difference would probably indicate that a real change occurs during student teaching programs. The statistical procedure used to make this determination is the commonly-used t-test for determining whether or not the difference between two means is significant. The levels of significance most commonly used are the .05 level, the .01 level, and the .001 level. A determination that a finding is significant at the .05 level means that the probability of a result in this direction being a mere accidental characteristic of this particular sample is 5% or less; conversely, the probability that the result is really a significant one is 95% or better. Similarly, acceptance at the .01 level means that the chance of this

being a mere sampling error is less than one in a hundred, and the probability of the direction of the result being significant is 99% or better. And significance at the .001 level means that there is only one chance in a thousand (or less) that a result in this direction would be only a chance characteristic of this particular sample; the probability of a true change in this direction is 99.9% or better.[1] An alternate way of reporting significance, used in many of the tables in this study, takes the form $p < .05$, i.e., the probability of a result in this direction being due to chance alone is less than 5%. Results were accepted as having significance in this study if they reached the .05 level of confidence; they were also tested for significance at higher levels.

It might be well to point out here that it is fairly common to attempt to attach too much importance to statistical significance, especially when very high levels of confidence are reached, as was the case with many of the findings in this study. A very high level of confidence means only that there is a very strong probability that the result obtained would be in the same direction with another sample of the same population, and it should not be interpreted as meaning anything more than that.

The second main focus of this study is upon motivation. Determination of whether or not motivational change did

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[1]Walter Borg, Educational Research: An Introduction (New Yor: David McKay Co., 1963), p. 137.

actually occur was made in the manner just outlined above. In attempting to determine, however, whether or not there were significant relationships between motivational change and the other variables being investigated, other statistical techniques were necessary. Where both variables being investigated for relationships between them were distributed on a scale (such as the 1 through 5 scale principally employed in this study) correlational analysis was used. All correlations reported in this study are Pearson product-moment correlations. In situations in which one of the variables was not distributed on a scale but was purely categorical (such as subject matter, or type of placement, in Hypothesis 3) the test of significance employed was the Chi Square Test.

Hypothesis 1

Hypothesis 1 states:

> Motivation of the pupils, as perceived by student teachers, supervising teachers, administrators, and pupils will not change significantly when a student teacher is placed in a classroom.

Responses of student teachers regarding their perceptions concerning pupil motivational change are presented in Table 1. A total of 1,795, or 40.8%, saw pupil motivation as being either "much better" or "somewhat better" during the student teaching program, as compared with only 275, or 6.2%, who saw it as being either "somewhat poorer" or "much poorer." The mean response of the student teachers was 2.51, or midway

between "no change"and "somewhat better." In the calculation of the mean, the fairly large group who reported that they did not know (16.4%) were included with those who reported "no change." If they were left out of the calculations, the mean would be somewhat lower and the standard deviation somewhat higher. The net result of this would be to make the deviation from the hypothesized mean of 3.00 slightly larger than it is

TABLE 1.--Pupil motivational change during student teaching programs, as perceived by student teachers.

Responce	Number	Per Cent
1. Much better	309	7.0
2. Somewhat better	1,486	33.8
3. No change	1,602	36.5
4. Somewhat poorer	256	5.8
5. Much poorer	19	0.4
6. Don't know	718[a]	16.4
TOTAL	4,390	99.9

Mean	Standard Deviation	Significance, p
2.51	.77	.001

[a]Response number 6, for purposes of calculation of the mean, S.D., and p, is considered equal to 3.00 ("no change").

as shown in the chart. Thus the calculations were handled in the more conservative way. A t-test comparing the mean of 2.51 with a 3.00 mean, which would be expected on the basis of the null hypothesis, indicated that the obtained mean was significantly different from 3.00 at the .001 level of confidence.

A legitimate question could be raised, of course, as to whether or not student teachers could rate their own success

in changing pupil motivation in an objective and impartial way. The question is a valid one, and certainly their perceptions could not be regarded as conclusive without corroboration by other observers. Table 2 shows the perceptions of supervising teachers. A total of 32.8% of the supervising teachers saw motivation as being improved during student teaching, compared to a total of 23.9% who saw it as being poorer. The mean perception was 2.88, considerably closer to "no change" than was the case with the student teacher group, but still significantly in the direction of better motivation when the student teachers were involved.

TABLE 2.--Pupil motivational change during student teaching programs, as perceived by supervising teachers.

Response	Number	Per Cent
1. Much better	27	4.7
2. Somewhat better	160	28.1
3. No change	246	43.2
4. Somewhat poorer	124	21.8
5. Much poorer	12	2.1
TOTAL	569	99.9

Mean	Standard Deviation	Significance, p
2.88	.87	.01

The school administrators also perceived improvement in pupil motivation, with a mean response of 2.44, as indicated in Table 3. A total of 544, or 56.2%, reported improved motivation, while only 71, or 7.2%, reported motivation as being poorer during student teaching programs.

TABLE 3.--Pupil motivational change during student teaching programs, as perceived by administrators.

Response	Number	Per Cent
1. Much better	61	6.1
2. Somewhat better	493	50.1
3. No change	360	36.5
4. Somewhat poorer	69	7.0
5. Much poorer	2	0.2
TOTAL	985	99.9

Mean	Standard Deviation	Significance, p
2.44	.72	.001

The data from pupil responses are presented in Table 4. A total of 53.5% of the pupils in the sample felt that they were more motivated (which was defined for them parenthetically as "interested") when they had the student teacher, while a total of 30.9% felt that they had been more motivated with the regular teacher. The mean response of the pupil group was 2.66.

TABLE 4.--Pupil motivational change during student teaching programs, as perceived by pupils.

Response	Number	Per Cent
1. Much more with the student teacher	97	25.8
2. A little more with the student teacher	104	27.7
3. No difference	59	15.7
4. A little more with the regular teacher	63	16.8
5. Much more with the regular teacher	53	14.1
TOTAL	376	100.1

Mean	Standard Deviation	Significance, p
2.66	1.39	.001

The data which relate to Hypothesis 1 are summarized in Table 5. The deviation from the 3.00, or "no change," response, was found to be significant for all four groups of respondents involved in the study. This deviation was found to be significant at the .01 level of confidence for the supervising teacher group, and at the .001 level for the student teacher, administrator, and pupil groups. All four groups perceived the change to be in the same direction: better motivation during student teaching programs. Therefore, Hypothesis 1, in the null form, was rejected; it appears that motivation of pupils improves, as

TABLE 5.--Summary chart: pupil motivational change during student teaching programs as perceived by all groups.

Group of Respondents	Mean	S.D.	Total N	Significance, p
1. Student teachers	2.51	.77	4,390	.001
2. Supervising teachers	2.88	.87	569	.01
3. Administrators	2.44	.72	985	.001
4. Pupils	2.66	1.39	376	.001

perceived by student teachers, supervising teachers, administrators, and pupils, when a student teacher is placed in a classroom.

Thus, as perceived by all four of these groups, student teaching not only did not cause a mean decline in the level of pupil motivation, which might have been anticipated in a situation where inexperienced people are placed in charge of the educational program, but it was actually perceived to bring about a mean improvement in this most important variable.

Did this perceived increase in pupil motivation appear to vary from one level (i.e., elementary, junior high, and senior high) to another, or is it seen as uniform at all levels? As motivation changed, did other variables change in close relationship to it? How were the other variables in the study changed during student

teaching programs? These questions remain to be dealt with, as we begin the consideration of the data relating to the other hypotheses of the study.

Hypothesis 2

Hypothesis 2 states:

> There will be no relationship between changes in motivation and changes in these aspects of classroom procedure and management, as perceived by supervising teachers:
> a. Small group instruction
> b. Individual attention
> c. Introduction of new and different materials
> d. Discipline.

In the testing of Hypothesis 2, data are first presented which show the change in each of these variables during student teaching programs, as perceived by the sample of supervising teachers used in this study. Following this, the relationships between motivational change and change in the other variables will be examined.

Changes which the supervising teachers perceived in small group instruction are shown in Table 6. The mean of 2.27 indicates a perception of an increase in small group instruction when student teachers were in the classrooms. The table also shows how teachers at each level--elementary, junior high, and senior high, separately saw the change in this variable. Elementary teachers reported the greatest increase in small group work, with a mean of 2.03. Junior high and senior high teachers reported smaller but still very significant increases, with means of 2.41 and 2.44

TABLE 6.--Change in amount of small group instruction during student teaching programs, as perceived by supervising teachers.

	Elementary	Junior High	Senior High	Other	Total
1. Much more	66 28.7%	11 9.8%	22 10.1%	0	99 17.2%
2. Somewhat more	98 42.6%	49 43.8%	85 39.2%	8	240 41.8%
3. No change	60 26.1%	48 42.9%	102 47.0%	7	217 37.8%
4. Somewhat less	6 2.6%	3 2.7%	8 3.7%	0	17 3.0%
5. Much less	0 0	1 .9%	0 0	0	1 .2%
TOTAL	230 100.0%	112 100.1%	217 100.0%	15	574 100.0%
Mean	2.03***	2.41***	2.44***		2.27***
S.D.	.81	.74	.72		.78

*** $p < .001$

respectively. It can also be seen from the table that if responses in each direction are combined, for the total group there were 59.0% reporting more small group work and only 3.2% reporting less. The column headed "other" in this and the remaining tables dealing with supervising teacher perceptions involves a small percentage of the teachers who classified their assignments as "middle school" or "all grades K-12." Separate group means and standard

deviations were not calculated for these small groups, but their responses were included in calculations of these measures for the total group.

The amount of individual attention given to pupils was also perceived by supervising teachers to increase greatly, as shown in Table 7. The mean for the total

TABLE 7.--Change in amount of individual attention during student teaching programs, as perceived by supervising teachers.

Response	Elementary	Junior High	Senior High	Other	Total
1. Much more	68 29.6%	28 25.0%	25 11.6%	1	122 21.3%
2. Somewhat more	132 57.4%	60 53.6%	125 57.9%	11	328 57.2%
3. No change	26 11.3%	22 19.7%	57 26.3%	3	108 18.9%
4. Somewhat less	3 1.3%	2 1.8%	8 3.7%	0	13 2.3%
5. Much less	1 .4%	0 0	1 .5%	0	2 .4%
TOTAL	230 100.0%	112 100.1%	216 100.0%	15	573 100.1%
Mean	1.86***	1.98***	2.24***		2.03***
S.D.	.69	.72	.72		.72

*** $p < .001$

group was 2.03, indicating an even greater increase in individual attention than was perceived with respect to small group instruction. Again the increase was greatest on the elementary level, with a mean of 1.86, as compared to 1.98 and 2.24 for the junior high and senior high groups, respectively. With respect to increasing the amount of both small group work and individual attention, there would seem to be an obvious advantage during student teaching programs, in that there are frequently two adults rather than only one involved in working with the pupils.

Regarding new and different materials, supervising teachers were asked, "Did your student teacher bring, develop, provide, or suggest any new or different instructional materials?" As shown in Table 8, there were only three responses from which to select in answering this question, although in nearly every other question involved in this study there were five possible responses from which to select. Since a perception of no contribution of new or different materials would call for response 3 ("none"), the obtained means were again compared with 3.00 in testing for significance. The supervising teachers reported, both as a total group and at each level, that student teachers did significantly contribute in this area of new and different learning materials. A total of 75.3% of the supervising teachers reported either "some" or "a great many" such contributions, as compared to 24.7% who

TABLE 8.--Introduction of new or different instructional materials by student teachers, as perceived by supervising teachers.

Response		Elementary	Junior High	Senior High	Other	Total
1.	A great many	32 14.0%	13 11.6%	13 6.0%	4	62 10.8%
2.	Some	150 65.8%	74 66.1%	136 62.4%	10	370 64.5%
3.	None	46 20.2%	25 22.3%	69 31.6%	2	142 24.7%
	TOTAL	228 100.0%	112 100.0%	218 100.0%	16	574 100.0%
	Mean	2.06***	2.11***	2.26***		2.14***
	S.D.	.58	.58	.56		.58

*** $p < .001$

reported "none." The mean perception of 2.14 for the total group, and also the mean perceptions of teachers at each level separately, were found to be significant at the .001 level.

Significant changes were also reported by supervising teachers with respect to discipline, but they were in the direction opposite to that which has been found for all other supervising teacher perceptions analysed above. Discipline was perceived by the total group to be significantly poorer, with a mean of 3.34. The largest magnitude of change was reported by senior high teachers,

TABLE 9.--Change in discipline during student teaching programs, as perceived by supervising teachers.

Response		Elementary	Junior High	Senior High	Other	Total
1.	Much better	8 3.5%	2 1.8%	2 .9%	0	12 2.1%
2.	Somewhat better	27 11.8%	18 16.2%	18 8.3%	0	63 11.0%
3.	No change	96 41.9%	39 35.1%	96 44.2%	7	238 41.6%
4.	Somewhat poorer	91 39.7%	46 41.4%	93 42.9%	8	238 41.6%
5.	Much poorer	7 3.1%	6 5.4%	8 3.7%	0	21 3.7%
	TOTAL	229 100.0%	111 99.9%	217 100.0%	15	572 100.0%
	Mean	3.27***	3.32***	3.40***		3.34***
	S.D.	.84	.88	.73		.80

***$p < .001$

whose mean perception was 3.40. The smallest change in discipline was reported by elementary teachers, with a mean perception of 3.27.

Changes in pupil motivation at each level, as perceived by the supervising teacher group, are shown in Table 10. It is clear that most of the motivational change perceived by supervising teachers occurred at the elementary level, where the mean was 2.70. This change was significant at the .001 level. The mean perception

TABLE 10.--Pupil motivational change during student teaching programs, by level (supervising teacher perceptions).

Response	Elementary	Junior High	Senior High	Other	Total
1. Much better	19 8.4%	6 5.4%	2 .9%	0	27 4.7%
2. Somewhat better	77 34.1%	29 26.1%	50 23.0%	4 16.7%	160 28.1%
3. No change	84 37.2%	47 42.3%	108 49.8%	7	246 43.2%
4. Somewhat poorer	44 19.4%	24 21.6%	52 24.0%	4	124 21.8%
5. Much poorer	2 .8%	5 4.5%	5 2.3%	0	12 2.1%
TOTAL	226 99.9%	111 99.9%	217 100.0%	15	569 99.9%
Mean	2.70***	2.94(NS)	3.04(NS)		2.88**
S.D.	.91	.94	.77		.87

** $p < .01$;
*** $p < .001$

of junior high teachers was also in the direction of improved motivation, but only slightly so (mean: 2.94). The t-test showed this change to be not significant, even at the .05 level. The mean perception of 3.04 by senior high teachers is in the direction of slightly poorer motivation during student teaching programs, but the t-test showed this slight change also to be not significant.

Correlations obtained between motivational change and the other variables which were investigated with regard to this hypothesis are shown in Table 11. The correlations, based on supervising teacher perceptions, were all found to be positive, and all were significant at the .01 level or better, for the total group. The highest correlation, .55, occurs between motivational change and change in discipline. The correlation between motivational change and introduction of new and different materials is .32, the correlation with individual attention is .31, and the correlation with small group instruction is .29. In addition to these correlations obtained from the total group of supervising teachers, correlations were also found between motivational change and change in the other variables for each of the three levels separately. These correlations are presented in Table 12. Again, all the correlations found were positive, and all were significant except one: the correlation of .15 between motivational change and change in small group instruction, as perceived by the junior high supervising teachers. The variable found to be most closely correlated with motivational change at all three levels was discipline, as the supervising teachers saw it. The highest of these three correlations was .58, obtained from the senior high data.

TABLE 11.--Correlations between pupil motivation and other variables, as perceived by supervising teachers.

Variable	Correlation	N	Significance, p
1. Small group instruction	.29	568	.01
2. Individual attention	.31	567	.01
3. New and different materials	.32	567	.001
4. Discipline	.55	566	.001

TABLE 12.--Correlations between pupil motivation and other variables, by level (supervising teacher perceptions).

Variable	Elementary N=227	Junior High N=111	Senior High N=217
1. Small group instruction	.31**	.15(N.S.)	.28**
2. Individual attention	.28**	.24*	.33***
3. New and different materials	.24*	.36***	.34***
4. Discipline	.56***	.42***	.58***

* $p < .05$

** $p < .01$

*** $p < .001$

On the basis of these findings, Hypothesis 2 (null form), was rejected. A significant positive relationship was found between motivational change and changes in each of the other four variables--small group instruction, individual attention, introduction of new and different materials, and discipline, as perceived by the total group of supervising teachers.

It was also found that the supervising teachers at all levels perceived a significant increase in small group instruction, individual attention, and introduction of new and different learning materials during student teaching programs. On the other hand, the mean perception of supervising teachers at all three levels was that discipline was significantly poorer. With respect to motivation, elementary teachers perceived a significant improvement, while secondary teachers perceived no significant change.

Hypothesis 3

Hypothesis 3 states:

> There will be no relationship between motivational change as perceived by supervising teachers and the kind of setting in which student teaching occurs:
>
> a. Subject area involved
> b. Type of student teacher placement (e.g., with one supervising teacher, more than one, etc.)
> c. Size of community.

The data with regard to pupil motivational change during student teaching programs, by subject area, are presented in Table 13. Changes in the direction of improved pupil motivation were found in the following subject areas:

1. Physical Education (2.67)[1]
2. All elementary subjects (2.71)
3. Special Education (2.71)
4. Social Studies-English combination (2.86)
5. Social Studies (2.89)
6. Foreign Languages (2.90)
7. English (2.91)
8. Art (2.94)
9. Music (2.94)

In business education, a mean of 3.00 indicated a perception of no change. In the other practical arts, as well as mathematics and the sciences, somewhat poorer motivation was perceived during student teaching programs by the supervising teachers, as shown below:

1. Mathematics (3.08)
2. Home Economics (3.12)
3. Sciences (3.13)
4. Vocational-Industrial Education (3.41)

The Chi Square Test was applied to these data and, as shown in Table 13, yielded a Chi Square value of 69.92, a value which, with the 56 degrees of freedom existing, is not significant at the .05 level. The p value obtained was about midway between .05 and .15. For purposes of this study, then, a significant relationship was not found between motivational change during student teaching programs and subject area.

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[1]Figures in parentheses behind subject areas are means, derived from Table 13.

TABLE 13.--Pupil motivational change during student teaching programs, by subject area (supervising teacher perceptions).

Subject	Much Better	Somewhat Better	No Change	Somewhat Poorer	Much Poorer	N	Mean	S.D.
1. All elementary subjects	20	59	75	38	2	194	2.71	.93
2. Art	2	3	6	6	0	17	2.94	1.03
3. Business Education	0	3	8	3	0	14	3.00	.68
4. English	3	8	13	7	2	33	2.91	1.04
5. Foreign Languages	0	5	13	3	0	21	2.90	.62
6. Home Economics	0	3	9	5	0	17	3.12	.70
7. Mathematics	1	5	22	10	0	38	3.08	.71
8. Music	0	6	8	3	1	18	2.94	.87
9. Physical Education	3	10	19	4	0	36	2.67	.79
10. Sciences	1	7	11	9	2	30	3.13	.97
11. Social Studies	0	23	28	12	2	65	2.89	.81
12. Social Studies-English Combination	0	5	6	3	0	14	2.86	.77
13. Special Education	0	6	6	2	0	14	2.71	.73
14. Vocational-Industrial Education	0	2	8	5	2	17	3.41	.87
15. Other	1	8	7	9	0	25	2.96	.93
TOTAL	31	153	239	119	11	553	2.87	.88

Chi Square	d.f.	Significance, p
69.92	56	N.S. (p is between .05 and .15)

Table 14 shows motivational changes, as supervising teachers saw them, in several different kinds of student teacher placement situations. A mean change of 2.76 was perceived in cases where student teachers were placed in team teaching situations, 2.83 in situations in which a student teacher worked with two or three different teachers (who were not in a team teaching situation), 2.89 in the traditional situation where there was just one supervising teacher, and 3.11 where the student teacher was operating in a flexible cluster situation. The Chi Square value of 15.32 obtained from the data, with 16 degrees of freedom, was not nearly high enough to reach any of the significance levels which have been set. Thus it does not appear that pupil motivational change is significantly different in different kinds of student teacher placement situations.

Perceived motivational changes in communities of different sizes are shown in Table 15. The means for each size of community are very close together, and Chi Square analysis indicated that the results obtained did not differ significantly from the results to be expected on the basis of the null hypothesis. Pupil motivational change during student teaching programs, then, apparently does not vary significantly in communities of different sizes.

On the basis of the foregoing, Hypothesis 3 (in the null form) was not rejected. No significant differences

TABLE 14.--Pupil motivational change during student teaching programs, by type of student teacher placement (supervising teacher perceptions).

Response	Single Supervising Teacher	Team Teaching Situation	With 2 or 3 Different Teachers	Flexible Cluster	Other	Total
1. Much better	21 5.1%	4 8.2%	1 1.6%	1 2.9%	0	27 4.7%
2. Somewhat better	113 27.5%	14 28.6%	19 30.2%	10 28.6%	3	159 28.0%
3. No change	178 43.3%	21 42.9%	33 52.4%	10 28.6%	4	246 43.3%
4. Somewhat poorer	89 21.6%	10 20.4%	10 15.9%	12 34.3%	3	124 21.8%
5. Much poorer	10 2.4%	0 0	0 0	2 5.7%	0	12 2.1%
TOTAL	411 99.9%	49 100.1%	63 100.1%	35 100.1%	10	568 99.9%
Mean	2.89	2.76	2.83	3.11		2.88
S.D.	.88	.88	.71	.99		.87

Chi Square	df	Significance, p
15.32	16	N.S. (p > .50)

TABLE 15.--Pupil motivational change during student teaching programs, by size of community (supervising teacher perceptions).

Response	Large Central City	Large Suburban Community	Small Suburban Community	Medium Sized City	Small City or Rural	Total
1. Much better	6 5.0%	5 3.9%	6 6.7%	2 1.9%	8 6.3%	27 4.7%
2. Somewhat better	36 30.3%	37 29.1%	25 27.8%	36 34.0%	26 20.5%	160 28.1%
3. No change	42 35.3%	56 44.1%	44 48.9%	40 37.7%	64 50.4%	246 43.2%
4. Somewhat poorer	33 27.7%	29 22.8%	12 13.3%	24 22.6%	26 20.5%	124 21.8%
5. Much poorer	2 1.7%	0 0	3 3.3%	4 3.8%	3 2.4%	12 2.1%
TOTAL	119 100.0%	127 99.9%	90 100.0%	106 100.0%	127 100.1%	569 99.9%
Mean	2.91	2.86	2.79	2.92	2.92	2.88
S.D.	.92	.81	.88	.89	.87	.87

Chi Square	df	Significance, p
22.14	16	N.S. (p is between .10 and .20)

in pupil motivational change during student teaching programs were found on the basis of subject area, type of student teacher placement, or size of community.

Hypothesis 4

Hypothesis 4 states:

> There will be no relationship between pupil perception of motivational change and pupil perception of change in the following variables:
>
> a. How well the pupil understands the material
> b. Use of praise and encouragement
> c. Pupil participation in decision making
> d. Use of audio-visual media
> e. Awareness by the pupil of how well he is progressing
> f. Relevance of classroom activities to the world outside the classroom
> g. Interest shown in the pupil as a person
> h. Teacher competency in subject matter
> i. Variety of methods and procedures
> j. Individual help outside of class time
> k. Small group instruction
> l. Individual attention
> m. Introduction of new and different materials
> n. Discipline

As was done with respect to Hypothesis 2, here also data are first presented which show the change in each variable independently, followed by an analysis of relationships.

Table 16 presents data relative to pupil motivational change as seen by the pupils themselves, by level and also as a total group. The pupils were answering the question, "When did you feel more motivated (interested)?" The possible responses are shown in the table. By far the greatest change in motivation reported by the pupils

TABLE 16.--Change in pupil motivation during student teaching programs, as perceived by pupils (by level).

Response	Elementary	Junior High	Senior High	Total
1. Much better with	49	30	18	97
	41.2%	20.7%	16.1%	25.8%
2. A little better with	35	34	35	104
	29.4%	23.4%	31.3%	27.7%
3. No difference	10	27	22	59
	8.4%	18.6%	19.6%	15.7%
4. A little better with	15	25	23	63
	12.6%	17.2%	20.5%	16.8%
5. Much better with	10	29	14	53
	8.4%	20.0%	12.5%	14.1%
TOTAL	119	145	112	376
	100.0%	99.9%	100.0%	100.1%
Mean	2.18***	2.92(NS)	2.82(NS)	2.66***
S.D.	1.32	1.43	1.28	1.39

*** $p < .001$

themselves occurred at the elementary level. The mean response (2.18) indicated a strong perception of improved motivation by elementary students while they had student teachers. The mean junior high response of 2.92 and the mean senior high response of 2.82 were also somewhat in the direction of better motivation during student teaching programs, but not sufficiently so to reach statistical significance. It will be recalled that the supervising teacher

sample in the study also reported a very significant increase in pupil motivation at the elementary level, and no significant change at the junior and senior high levels. It would seem that it may be concluded with a good deal of confidence that there is a considerable improvement in the mean level of pupil motivation during student teaching programs at the elementary level. Mean differences at the secondary levels, however, are quite small, and not significant.

Data regarding changes in the other variables (independently) in Hypothesis 4 are presented, separately for each variable, in Tables 17 through 30, and in summary form in Tables 31 and 32. Looking briefly first at the changes which occurred with respect to each variable separately, it is seen first of all that pupil understanding of the material (Table 17) was perceived by them as being at least somewhat better with the regular teacher than with the student teacher, and significantly so at the junior high level, as well as for the total group. In utilization of praise and encouragement, the student teachers scored somewhat higher than the regular teachers, and significantly so at the senior high level and for the total group. With respect to pupil participation in decision making, pupils at all levels felt that there was significantly more of this with student teachers. With respect to amount of usage of audio-visual media, on the

TABLE 17.--Change in pupil understanding of material during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	3.11 (N.S.)	1.44	119
Junior High	3.47***	1.27	145
Senior High	3.11 (N.S.)	1.34	110
All levels	3.25***	1.35	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates improvement. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

*** $p < .001$

TABLE 18.--Change in utilization of praise and encouragement of pupils during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.87 (N.S.)	1.35	119
Junior High	2.82 (N.S.)	1.15	145
Senior High	2.70*	1.25	110
All levels	2.80**	1.24	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

* $p < .05$

** $p < .01$

TABLE 19.--Change in pupil participation in decision making during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.37***	1.24	117
Junior High	2.61***	1.23	145
Senior High	2.46***	1.02	112
All levels	2.49***	1.17	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

***$p < .001$

TABLE 20.--Change in amount of usage of audio-visual media during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	3.21 (N.S.)	1.51	117
Junior High	3.43***	1.34	145
Senior High	3.36**	1.23	112
All levels	3.34***	1.37	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

**$p < .01$

***$p < .001$

TABLE 21.--Change in pupil awareness of his progress during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.97 (N.S.)	1.29	118
Junior High	3.34**	1.23	145
Senior High	3.11 (N.S.)	1.17	112
All levels	3.16*	1.24	375

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates greater awareness of his progress. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

*$p < .05$

**$p < .01$

TABLE 22.--Change in relevance of classroom activities during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.68**	1.25	118
Junior High	3.07 (N.S.)	.99	145
Senior High	3.05 (N.S.)	.90	111
All levels	2.94 (N.S.)	1.07	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00

**$p < .01$

TABLE 23.--Change in amount of personal interest shown in pupils during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.79 (N.S.)	1.48	118
Junior High	3.09 (N.S.)	1.33	145
Senior High	2.90 (N.S.)	1.30	111
All levels	2.94 (N.S.)	1.37	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00

TABLE 24.--Student teacher competency in subject matter, compared to that of the regular teacher, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	3.22 (N.S.)	1.41	116
Junior High	3.81***	1.24	145
Senior High	3.69***	1.13	111
All levels	3.59***	1.29	372

[a]A mean of 3.00 indicates no difference, a mean less than 3.00 indicates greater subject matter competency by the student teachers and a mean more than 3.00 indicates greater subject matter competency by the regular teachers. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00

*** $p < .001$

TABLE 25.--Variety of methods and procedures employed, student teachers compared to regular teachers (pupil perception).

Level	Mean[a]	S.D.	N
Elementary	2.34***	1.23	117
Junior High	2.52***	1.38	145
Senior High	2.68**	1.17	111
All levels	2.51***	1.28	373

[a]A mean of 3.00 indicates no difference, a mean less than 3.00 indicates more variety by the student teachers, and a mean greater than 3.00 indicates more variety by the regular teachers. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00

**$p < .01$

***$p < .001$

TABLE 26.--Change in amount of individual help outside of class time during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.65**	1.34	118
Junior High	3.23**	1.05	145
Senior High	3.26**	.99	108
All levels	3.06 (N.S.)	1.17	371

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

**$p < .01$

TABLE 27.--Change in amount of small group instruction during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.46***	1.41	119
Junior High	2.94 (N.S.)	1.25	145
Senior High	2.71**	1.12	110
All levels	2.72***	1.28	374

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

** $p < .01$

*** $p < .001$

TABLE 28.--Change in amount of individual attention during student teaching programs, as perceived by pupils.

Level	Mean[a]	S.D.	N
Elementary	2.46***	1.37	119
Junior High	3.00 (N.S.)	1.32	145
Senior High	2.83 (N.S.)	1.22	109
All levels	2.78**	1.33	373

[a]A mean of 3.00 indicates no change; a mean less than 3.00 indicates an increase. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

** $p < .01$

*** $p < .001$

TABLE 29.--Amount of usage of new and different learning materials, student teachers compared to regular teachers (pupil perceptions).

Level	Mean[a]	S.D.	N
Elementary	2.47***	1.33	119
Junior High	2.77*	1.35	145
Senior High	2.85 (N.S.)	1.11	109
All levels	2.70***	1.29	373

[a]A mean of 3.00 indicates no difference, a mean of less than 3.00 indicates more use of such materials by the student teachers, and a mean greater than 3.00 indicates more use of such materials by the regular teachers. Scale ranges from 1.00 to 5.00. Significance is determined by t test, comparing obtained means with 3.00.

*$p < .05$

***$p < .001$

TABLE 30.--Change in discipline during student teaching programs, as perceived by pupils. [Responses to the question: What about discipline (order)?].

Response	Elementary	Junior High	Senior High	Total
1. Much better with the student teacher	14 11.8%	6 4.1%	3 2.7%	23 6.1%
2. A little better with the student teacher	19 16.0%	5 3.4%	8 7.3%	32 8.6%
3. No difference	26 21.8%	22 15.2%	22 20.0%	70 18.7%
4. A little better with the regular teacher	26 21.8%	34 23.5%	41 37.3%	101 27.0%
5. Much better with the regular teacher	34 28.6%	78 53.8%	36 32.7%	148 39.6%
TOTAL	119 100.0%	145 100.0%	110 100.0%	374 100.0%
Mean	3.39**	4.19***	3.90***	3.85***
S.D.	1.36	1.08	1.03	1.21

** $p < .01$

*** $p < .001$

TABLE 31.--Summary chart: changes[a] during student teaching programs, as perceived by pupils.

	Elementary	Junior High	Senior High	Total Group
1. Motivation	2.18***	2.92 (N.S.)	2.82 (N.S.)	2.66***
2. Pupil understanding of the material	3.11 (N.S.)	3.47***	3.11 (N.S.)	3.25***
3. Praise and encouragement	2.87 (N.S.)	2.82 (N.S.)	2.70*	2.80**
4. Pupil decision making	2.37***	2.61***	2.46***	2.49***
5. Audio-visual media	3.21 (N.S.)	3.43***	3.36**	3.34***
6. Knowledge of progress	2.97 (N.S.)	3.34**	3.11 (N.S.)	3.16*
7. Relevance	2.68**	3.07 (N.S.)	3.05 (N.S.)	2.94 (N.S.)
8. Teacher personal interest	2.79 (N.S.)	3.09 (N.S.)	2.90 (N.S.)	2.94 (N.S.)
9. Teacher subject competency	3.22 (N.S.)	3.81***	3.69***	3.59***
10. Variety of procedures	2.34***	2.52***	2.68**	2.51***
11. Help outside of class	2.65**	3.23**	3.26**	3.06 (N.S.)
12. Small group work	2.46***	2.94 (N.S.)	2.71**	2.72***
13. Individual attention	2.46***	3.00 (N.S.)	2.83 (N.S.)	2.78**
14. New and different materials	2.47***	2.77*	2.85 (N.S.)	2.70***
15. Discipline	3.39**	4.19***	3.90***	3.85***

[a]Figures are means, followed by indication of significance. Means less than 3.00 indicate increase or improvement; 3.00 indicates no change.

*$p < .05$; **$p < .01$; ***$p < .001$.

TABLE 32.--Summary of changes during student teaching programs, by direction of change (pupil perceptions).

Variables significantly better (or greater in amount) with student teachers	Variables not significantly changed	Variables significantly better (or greater in amount) with regular teachers
	Elementary Level	
1. Motivation, 2.18[a]	1. Teacher personal interest, 2.79	1. Discipline, 3.39
2. Variety of procedures, 2.34	2. Praise and encouragement, 2.87	
3. Pupil decision making, 2.37	3. Knowledge of progress, 2.97	
4. Small group work, 2.46	4. Pupil understanding of the material, 3.11	
5. Individual attention, 2.46	5. Audio-visual media, 3.21	
6. New and different materials, 2.47	6. Teacher subject competency, 3.22	
7. Help outside of class, 2.65		
8. Relevance, 2.68		
	Junior High Level	
1. Variety of procedures, 2.52	1. Praise and encouragement, 2.82	1. Help outside of class, 3.23
2. Pupil decision making, 2.61	2. Motivation, 2.92	2. Knowledge of progress, 3.34
3. New and different materials, 2.77	3. Small group work, 2.94	3. Audio-visual media, 3.43
	4. Individual attention, 3.00	4. Pupil understanding of material, 3.47
	5. Relevance, 3.07	5. Teacher subject competency, 3.81
	6. Teacher personal interest, 3.09	6. Discipline, 4.19
	Senior High Level	
1. Pupil decision making, 2.46	1. Motivation, 2.82	1. Help outside of class, 3.26
2. Variety of procedures, 2.68	2. Individual attention, 2.83	2. Audio-visual media, 3.36
3. Praise and encouragement, 2.70	3. New and different materials, 2.85	3. Teacher subject competency, 3.69
4. Small group work, 2.71	4. Teacher personal interest, 2.90	4. Discipline, 3.90
	5. Relevance, 3.05	
	6. Knowledge of progress, 3.11	
	7. Pupil understanding of the material, 3.11	
	Total Group, All Levels Combined	
1. Pupil decision making, 2.49	1. Relevance, 2.94	1. Knowledge of progress, 3.16
2. Variety of procedures, 2.51	2. Teacher personal interest, 2.94	2. Pupil understanding of the material, 3.25
3. Motivation, 2.66	3. Help outside of class, 3.06	3. Audio-visual media, 3.34
4. New and different materials, 2.70		4. Teacher subject competency, 3.59
5. Small group work, 2.72		5. Discipline, 3.85
6. Individual attention, 2.78		
7. Praise and encouragement, 2.80		

[a]Figures are means. Means less than 3.00 indicate increase or improvement; 3.00 indicates no change.

other hand, the regular teachers were perceived to utilize them more, and significantly so at all levels except elementary, where the result did not quite reach the .05 level of significance. The pupil's awareness of his own progress was perceived as being somewhat better with the regular teachers by junior high pupils and by the pupil group as a whole, but by the elementary and senior high groups separately no significant change was perceived. Relevance of classroom activities to the world outside the classroom was seen as not significantly changed, except at the elementary level, where it was seen as being better with student teachers. The mean perceptions of personal interest shown in the pupil as a person indicated no significant change at any level. With regard to teacher competency in the subject matter, however, junior high and senior high pupils rated the regular teachers significantly higher; elementary pupils rated the regular teachers somewhat higher, but the mean perception in this direction was not quite strong enough to reach the .05 level of significance. The student teachers, on the other hand, were perceived by pupils at all levels as employing significantly greater variety of methods and procedures. Amount of individual help outside of class time was perceived by elementary pupils as being significantly greater during student teaching programs, but by secondary pupils as being significantly less. Small group instruction was

perceived to increase significantly during student teaching programs by elementary and senior high pupils, while junior high pupils saw no significant mean change. Amount of individual attention was seen by elementary pupils as increasing significantly, whereas secondary pupils perceived no significant change. Amount of usage of new and different learning materials was perceived by elementary and junior high pupils to increase, while senior high pupils saw no significant difference. With respect to discipline, pupils at all levels perceived discipline to be significantly and substantially poorer during student teaching programs.

Table 31 summarizes the changes which pupils perceived to occur with respect to each of the 15 variables, at each level and for the total group. In Table 32, the variables have been sorted, for each level and for the total group, in terms of which variables were perceived by the pupils (1) as improving (or increasing) during student teaching programs, (2) as not changing significantly, and (3) as being poorer (or decreasing in amount) during student teaching programs.

At the elementary level, as is shown most clearly in Table 32, all except one of the fifteen variables involved in the study were perceived by the pupils as being either not significantly changed or actually improved during student teaching programs, with a total of eight of

the variables, in fact, being perceived as improved. The one variable which was perceived as being significantly poorer with student teachers was discipline. It may be recalled that on each of these variables on which the elementary supervising teacher perceptions were measured, the perceptions of the supervising teachers were in every case in the same direction as those of the pupils. It would seem that it might reasonably be concluded that, at least with respect to motivation and the related variables in this study, elementary student teachers have been generally well prepared. On the basis of these results, as well as others cited in the review of the literature earlier in this study, school systems should have little hesitation about accepting these student teachers and utilizing them in their educational programs.

There does seem to be a significant problem for student teachers with respect to discipline, however, not only at the elementary level but at the secondary levels as well. In fact, of the fifteen variables in the study, the student teachers were rated lowest on discipline by the pupils at all three levels. It will be recalled that the supervising teachers, at all three levels, also found discipline significantly poorer during student teaching programs. The greatest deviation from 3.00 (no change) in the entire study was the junior high pupils' mean perception of change in discipline: 4.19. Of the 145 junior

high pupils in the study, in fact, 78 (53.8%) selected response 5, indicating that discipline (order) was perceived as being "much better with the regular teacher" and an additional 34 (23.5%) selected response 4, perceiving it as being "a little better with the regular teacher." Combining these percentages, 77.3% of the junior high pupils saw discipline as being better with the regular teacher, and only 7.5% (11 pupils) saw it as being better with the student teacher. The perception of senior high pupils (mean: 3.90) was also very strongly in the same direction.

The question might be raised as to whether "better discipline" is a desirable goal. Since student teachers were perceived to motivate <u>better</u> and have <u>poorer</u> discipline (mean perceptions), is it possible that better motivation might tend to be associated with "poorer discipline," which might be merely a way of describing a less structured situation? It is interesting to note here with regard to that point that correlations developed in this study from the very same data, which are presented and analysed in more detail later in this study, show a significant <u>positive</u> relationship between better motivation and better discipline.

It appears, then, that discipline may be an area in which student teachers are receiving inadequate training. It may be that more attention should be given to this

problem by either the teacher education institutions, or the school systems in which the student teachers work. Since there are wide differences between different school systems as to how discipline is handled, perhaps greater cooperation between the teacher education institutions and the school systems will be necessary in order to give student teachers better preparation with respect to principles of classroom organization and management.

With respect to changes which pupils perceived to occur during student teaching programs at the junior high level, it may be seen from Table 32 that there were three variables with respect to which the student teachers were perceived to rate significantly higher than the regular teachers, four in which no significant mean difference was seen, and six in which the student teachers rated significantly lower than the regular teachers. The student teachers were rated higher than the regular teachers by the junior high pupils in variety of methods and procedures, in utilization of pupil participation in decision making, and in introduction of new and different materials. It appears that student teachers in junior high schools are able to make significant contributions to the schools in which they work, particularly with respect to these variables. With respect to six other variables, the mean performance of the student teachers was seen as not significantly different from that of the regular teachers

(see Table 32). Thus, to schools interested in the effects of student teaching programs upon the schools, it might be pointed out that, even at the junior high level, where the student teachers were rated lowest, the student teachers were perceived to do about as well as, or better than, the regular teachers with respect to nine of the fifteen variables in this study. Of these variables, motivation is probably the most significant and basic one, and motivation is one of the group of variables with respect to which no significant difference was seen.

Student teachers in junior high were perceived by the pupils to rate significantly lower than the regular teachers with respect to giving help outside of class time, pupil awareness of progress, utilization of audio-visual media, pupil understanding of the material, teacher subject competency, and discipline (this last one already having been discussed above). The first item in this list, help outside of class time, is the only one of the fifteen variables which was found to change significantly in one direction at one level, and significantly in the opposite direction at another level. Whereas elementary pupils perceived more help being given outside of class time during student teaching programs, both junior high and senior high pupils reported less help outside of class. One possible explanation for the direction found at the secondary levels is that time outside of class which the

regular teacher might ordinarily devote to pupils might be used for conferring with the student teacher when there is one present. With regard to pupil awareness of his own progress, it appears that the student teachers in junior high classrooms did not develop clear goals and ways in which the pupil could see his progress toward them as effectively as did the regular teachers. It was only at the junior high level that pupils reported this as being significantly better with the regular teachers than with the student teachers. This must be considered as quite important, however, because, as is shown below, junior high pupils also perceived a very high correlation between motivation and awareness of progress. Utilization of audio-visual media may have been a problem for student teachers because of lack of familiarity with the equipment or resources on hand in the school. Certainly it is not uncommon for a student teacher to learn how to use one kind of projector or tape recorder in a college class and find an entirely different type in the school in which he works as a student teacher. Perhaps the schools in which the student teachers are placed should take a more active role in orienting student teachers with regard to audio-visual equipment and resources available to them. With respect to teacher competency in the subject matter, junior high pupils rated student teachers very low (mean: 3.81). Both junior high and senior high pupils gave student teachers

their second lowest ratings on this variable (the only lower one in both cases being discipline). This appears to be a fairly strong indication that student teachers need a more adequate background in the subject matter which they are preparing to teach. It is interesting to note that (as is shown below) junior high pupils saw a very high correlation also between motivation and teacher competency in the subject matter, and senior high pupils also saw a significant positive correlation. It would seem useful to conduct further research on this matter. An investigation might be conducted, for example, as to whether this varies by subject field.

As can be seen by referring again to Table 32, the responses of senior high pupils with respect to the fifteen variables involved in the study were quite similar to those at the junior high level. Like the junior high pupils, senior high pupils also reported significantly more pupil decision making and greater variety of methods and procedures during student teaching programs. The senior high pupils also, however, reported significantly more praise and encouragement, as well as more small group work, when they had student teachers. With respect to the variables on which the regular teachers were rated significantly higher than the student teachers, the senior high list is the same as the junior high list, with two deletions. Both

pupil knowledge of progress and pupil understanding of the material, although still slightly in the direction of being better with the regular teacher, were not significantly so, as seen by the senior high pupils. The senior high pupils, then, saw four of the variables as being better with the student teachers, seven of the variables as not changing significantly, and four of the variables as being better with the regular teachers.

Correlation coefficients were found between motivation and all the other variables involved in the pupil data. As stated previously, all correlations are of the Pearson product-moment type, for which tables of significance levels for samples of various sizes are available. Correlations besed on data from the entire group of 376 pupils (all levels) are presented in Table 33. All fourteen variables tested against motivation were found to correlate positively and significantly. Twelve of the correlations were found to be significant at the .001 level. The highest correlation obtained, .55, was with perceived teacher interest in the pupil as a person. Even though factors which were purely personality factors were not included in the scope of this study, it is interesting to note this evidence of the importance of the personal factor in the educational process, even when the central question is motivation, or stimulation of interest in the subject matter. This could suggest that some of the programmed,

TABLE 33.--Correlations between motivation and other variables (pupil perceptions)--(N=376).

Variable	Correlation	Significance, p
1. Teacher interest in the pupil as a person	.55	.001
2. Pupil understanding of the material	.48	.001
3. Variety of procedures	.45	.001
4. Knowledge of progress	.44	.001
5. Teacher competence in the subject matter	.42	.001
6. Individual attention	.40	.001
7. Help outside of class	.37	.001
8. Discipline	.37	.001
9. Relevance	.36	.001
10. Praise and encouragement	.35	.001
11. New and different materials	.32	.001
12. Pupil participation in decision-making	.32	.001
13. Small group work	.26	.01
14. Use of audio-visual media	.15	.05

televised, and otherwise-mechanized recent approaches to education might have a serious handicap to overcome.

The second highest correlation was found with pupil understanding of the material, where the correlation obtained was .48. When the pupils perceived that they

understood the subject matter better, they also perceived themselves to be more motivated. A .45 correlation was obtained with variety of procedures, one of the variables which might have been expected to correlate highly with motivation. A correlation of .44 was obtained with awareness (or knowledge) of progress. The correlation obtained tends to confirm other research which indicates that motivation tends to be better when the learner has a reasonably clear idea of what the goals or objectives are and how well he is progressing toward those goals. A correlation of .42 was obtained with teacher competency in the subject matter. This is especially significant in this study because it has also been found that on both the junior high level and the senior high level the pupils perceived the student teachers, on the average, to be substantially weaker in understanding of the subject matter than the supervising teachers. It is interesting to note also that of the fourteen variables being tested for degree of relationship with motivation, the three variables specifically concerned with subject matter knowledge (pupil understanding of the subject matter, knowledge of his progress in learning it, and a perception that the teacher is competent in it) appear among the five highest correlations, as shown in Table 33. Individual attention shown to the pupils was found to correlate at .40. Since teacher personal interest was at the top of the list, this factor

of individual attention might have been expected to rank higher. However, it seems fairly clear that perceived interest in the pupil as a person was more closely associated with motivation than generalized individual attention. Correlations ranging from .37 downward to .32 were obtained between motivation and help outside of class, discipline, relevance, praise and encouragement, use of new and different materials, and pupil participation in decision making. The fact that pupil participation in decision making is near the bottom of this list may have some implications for those kinds of programs, currently being so vigorously promoted, which involve a great deal of emphasis upon pupil choices and pupil decision making. For the senior high group taken separately, in fact, this correlation was only .15, a correlation which was not found to be significant, even at the .05 level. It is entirely possible, of course, that the kinds of pupil choices and decision making opportunities involved in the programs referred to above were not the kinds of choices perceived by the pupils in this sample. It is, nevertheless, interesting, in view of the popularity of that school of thought, that the pupils in this sample, and particularly the senior high pupils taken separately, perceived better discipline to be more closely associated with better motivation than was amount of pupil decision making.

The two lowest correlations shown for the total group in Table 33 are with small group work (.26) and utilization of audio-visual media (.15). The very low correlation obtained between motivation and use of audio-visual media is perhaps one of the more unexpected findings of the study.

Correlations between motivation and each of the other variables were also calculated using the data from elementary pupils, junior high pupils, and senior high pupils separately. These correlations are presented in Table 34. Significant positive relationships were found in nearly every case. Only a few of the correlations obtained in this way, although positive, were not statistically significant. At the elementary level, use of audio-visual media did not correlate significantly, at the junior high level neither small group work nor use of audio-vidual media correlated significantly, and at the senior high level pupil decision making and small group work were found not to correlate significantly with motivation.

On the basis of the foregoing, Hypothesis 4 (null form) was rejected. Significant positive relationships were found between motivational change and each of the other fourteen variables in the hypothesis,[1] as perceived

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[1]See list in Table 33.

by the total pupil group. The elementary pupils separately perceived a significant positive correlation between motivation and each of the other variables except use of audio-visual media, for which the correlation was positive but not significant. The junior high pupils separately perceived a significant positive correlation between motivation and each of the other variables except small group work and audio-visual media, for which the correlations were positive but not significant. The senior high pupils separately perceived a significant positive correlation between motivation and each of the other variables except pupil decision making and small group work, for which the correlations were positive but not significant.[1]

It was also found that the total group of pupils, in comparing student teachers to supervising teachers, rated the student teachers higher with respect to pupil decision making, variety of procedures, motivation, use of new and different materials, small group work, individual attention, and utilization of praise and encouragement. The supervising teachers were rated higher with respect to pupil knowledge of progress, pupil understanding of the material, usage of audio-visual media, teacher competency in the subject matter, and discipline. No significant differences were perceived with respect to relevance, interest shown in the pupil as a person, and amount of

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[1]See complete list in Table 34.

TABLE 34.--Correlations between motivation and other variables, by level (pupil perceptions).

Rank Order	Variable	Correlation	Significance, p
	A. Elementary Level (N = 119)		
1.	Teacher personal interest	.48	.001
2.	Small group work	.41	.001
3.	Variety of procedures	.41	.001
4.	Pupil understanding of the material	.40	.001
5.	Pupil decision making	.39	.001
6.	Help outside of class	.38	.001
7.	Praise and encouragement	.38	.001
8.	Teacher subject competency	.35	.001
9.	Knowledge of progress	.35	.001
10.	Amount of individual attention	.34	.001
11.	Relevance	.33	.001
12.	Discipline	.22	.05
13.	New and different materials	.21	.05
14.	Use of audio-visual media	.12	N.S.
	B. Junior High Level (N = 145)		
1.	Teacher personal interest	.59	.001
2.	Teacher subject competency	.51	.001
3.	Pupil understanding of the material	.51	.001
4.	Knowledge of progress	.46	.001
5.	Amount of individual attention	.39	.001
6.	Variety of procedures	.38	.001
7.	New and different materials	.38	.001
8.	Relevance	.37	.001
9.	Discipline	.36	.001
10.	Help outside of class	.35	.001
11.	Pupil decision making	.34	.001
12.	Praise and encouragement	.32	.01
13.	Small group work	.16	N.S.
14.	Use of audio-visual media	.10	N.S.
	C. Senior High Level (N = 112)		
1.	Variety of procedures	.63	.001
2.	Teacher personal interest	.58	.001
3.	Pupil understanding of the material	.56	.001
4.	Knowledge of progress	.50	.001
5.	Discipline	.46	.001
6.	Praise and encouragement	.42	.001
7.	Amount of individual attention	.39	.001
8.	Relevance	.31	.01
9.	New and different materials	.31	.01
10.	Teacher subject competency	.27	.01
11.	Help outside of class	.26	.01
12.	Use of audio-visual media	.23	.05
13.	Pupil decision making	.15	N.S.
14.	Small group work	.12	N.S.

help given outside of class. When these ratings were examined separately for each level, it was found that pupils rated student teachers highest at the elementary level. The lowest pupil ratings of student teachers were found at the junior high level.

Hypothesis 5

Hypothesis 5 states:

> There will be no relationship between changes in pupil motivation, as perceived by supervising teachers, and how well prepared the supervising teachers perceived the student teachers to be.

Supervising teachers responded to a question in which they were asked how well they felt their student teachers were prepared to enter student teaching. The responses are presented in Table 35. Chi square analysis indicated that the results were significant at the .001 level. By combining responses 1 and 2 (both indicating better than "adequate" preparation) and dividing by responses 4 and 5 combined (both indicating less than "adequate" preparation) a ratio was obtained at each level comparing the number of student teachers perceived to be better-than-adequately prepared to those perceived to be less-than-adequately prepared. The ratios obtained were:

Elementary 5.3 to 1
Junior High 3.6 to 1
Senior High 2.8 to 1

TABLE 35.--Student teacher preparation, as perceived by supervising teachers.

Response	Elementary	Junior High	Senior High	Other	Total
1. Extremely well prepared	35 15.4%	12 10.7%	26 11.9%	3	76 13.2%
2. Well prepared	93 41.0%	45 40.2%	74 33.9%	6	218 38.0%
3. Adequately prepared	75 33.0%	39 34.8%	82 37.6¢	5	201 35.1%
4. Minimally prepared	20 8.8%	12 10.7%	30 13.8%	2	64 11.2%
5. Inadequately prepared	4 1.8%	4 3.6%	6 2.8%	0	14 2.4%
TOTAL	227 100.0%	112 100.0%	218 100.0%	16	573 99.9%
Mean	2.41	2.56	2.61		2.51
S.D.	.91	.95	.96		.94

At all three levels, the number of student teachers perceived by the supervising teachers to be better-than-adequately prepared was found to be much larger than the number found to be less-than-adequately prepared. The mean ratings of elementary student teachers were substantially higher than were those of the secondary student teachers with respect to adequacy of preparation. It will be recalled from the discussion of Hypothesis 4 that the pupils also generally rated elementary student teachers

much higher than they rated secondary student teachers, with respect to the variables in that hypothesis.

Correlations were found between the supervising teachers' perceptions of student teacher preparedness and pupil motivational change. These correlations are shown in Table 36. The correlation obtained for the total group was .45. The correlation found at the junior high level, .65, was the highest correlation obtained in the entire study. The junior high student teachers who were perceived by the supervising teachers as being well prepared, in other words, tended very much to be the same student teachers who were seen by the supervising teachers as being successful with respect to improving pupil motivation. The correlations between the two variables involved in this hypothesis were found, for all three levels, to be significant at the .001 level of confidence.

Hypothesis 5 (null form) was therefore rejected. A significant positive relationship was found between supervising teacher perceptions of student teacher preparation and pupil motivational change.

Summary

Hypothesis 1

Hypothesis 1 was rejected. Motivation of pupils was found to improve significantly during student

TABLE 36.--Correlations between preparedness of student teacher and pupil motivational change (supervising teacher perceptions).

Level	Correlation	N	Significance, p
Elementary	.39	227	.001
Junior High	.65	111	.001
Senior High	.36	217	.001
All levels	.45	555	.001

teaching programs, as perceived by student teachers, supervising teachers, administrators, and pupils.

When responses of pupils and supervising teachers were analyzed for elementary, junior high, and senior high levels separately, however, significant improvement in motivation during student teaching programs was perceived only at the elementary level, by both groups of respondents. No significant mean change in pupil motivation was perceived at either the junior high or senior high levels by either group of respondents.

Hypothesis 2

Hypothesis 2 was rejected. Significant positive correlations were found between pupil motivation and (a) small group instruction, (b) individual attention,

(c) introduction of new and different materials, and (d) discipline, as perceived by supervising teachers.

Hypothesis 3

Hypothesis 3 was not rejected. Changes in pupil motivation were not found to be significantly related to (a) subject area, (b) type of student teacher placement, or (c) size of community (based on supervising teacher perceptions).

Hypothesis 4

Hypothesis 4 was rejected. Significant positive correlations were obtained between pupil motivation and each of the other fourteen variables involved in Hypothesis 4, as perceived by pupils.

Hypothesis 5

Hypothesis 5 was rejected. A significant positive correlation was found between changes in pupil motivation during student teaching programs and preparation of the student teacher (as perceived by supervising teachers in both instances).

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Chapter V has four sections: a summary of the study, a statement of conclusions, a list of implications, and suggestions for future research.

Summary of the Study

The study had two principal purposes. One of these was to analyze the relationship between motivation and selected variables in the teaching process. The other purpose was to study the effects of student teaching programs upon pupils, particularly with respect to motivation and the variables in the study hypothesized to be related to motivation.

Data which had been gathered in the Michigan "Student Teaching Impact Study" (described in Chapter III) were utilized for the analysis of supervising teacher, student teacher, and administrator perceptions. Data with regard to pupil perceptions were obtained through a "Student Questionnaire on Motivation," developed for this study. The perceptions analyzed in the study were those of 4,390 student teachers in Michigan, 985 administrators in

Michigan cooperating schools, 569 supervising teachers of Michigan State University student teachers, and 376 pupils in grades five through twelve in Grand Rapids, Michigan. The schools selected for the pupil sample were schools considered to be typical or average in that city; schools in areas unusually high or low in socio-economic level were not included. The student teacher, supervising teacher, and administrator questionnaires were administered during the fall quarter or semester of the 1969-70 academic year; the pupil instruments were administered in September, 1970.

Tabulations of responses were presented, and means and standard deviations were calculated. Correlation coefficients (Pearson product-moment type) between motivation and the other variables being investigated were calculated, based upon the supervising teacher and pupil responses. Obtained means were compared with hypothesized null means, and differences were tested for significance by t-test. Significance levels of correlation coefficients obtained were determined by tables available for that purpose.

Conclusions

The following conclusions were reached through analysis of the data obtained in the study:

1. Motivation of pupils was perceived to improve significantly during student teaching programs by all four

groups of respondents: student teachers, supervising teachers, administrators, and pupils. When responses of supervising teachers and pupils were examined for elementary, junior high, and senior high levels separately, however, a perception of improved motivation during student teaching programs was found only at the elementary level. No significant mean change in pupil motivation was found at either the junior high or senior high levels.

2. Motivation was found to be correlated positively and significantly with amount of small group instruction ($r = .29$), individual attention ($r = .31$), introduction of new and different materials ($r = .32$), and discipline ($r = .55$), as perceived by supervising teachers. Supervising teachers perceived benefits to the pupils in terms of more small group instruction, more individual attention, and introduction of new and different learning materials during student teaching programs. Discipline, however, was perceived as being poorer when student teachers were in charge.

3. No relationship was found between changes in pupil motivation during student teaching programs and (a) curriculum subject area, (b) type of student teacher placement, or (c) size of community, based on supervising teacher perceptions.

4. Based on pupil perceptions, all variables examined for relationship to motivation were found to be

correlated positively and significantly. These variables, listed in order, from highest correlation obtained to lowest correlation obtained, were:

a. Teacher interest in the pupil as a person (r = .55)
b. Pupil understanding of the material (r = .48)
c. Variety of procedures (r = .45)
d. Knowledge of progress (r = .44)
e. Teacher competence in the subject matter (r = .42)
f. Individual attention (r = .40)
g. Help outside of class (r = .37)
h. Discipline (r = .37)
i. Relevance (r = .36)
j. Praise and encouragement (r = .35)
k. New and different materials (r = .32)
l. Pupil participation in decision making (r = .32)
m. Small group work (r = .26)
n. Use of audio-visual media (r = .15)

Correlation coefficients were also calculated based on the data from elementary (grades five and six), junior high, and senior high pupils separately. All of the correlations thus obtained were also positive, but a few of these were not of sufficient magnitude to be statistically significant; these were use of audio-visual media at the elementary level, small group work and use of audio-visual media at the junior high level, and pupil decision making and small group work at the senior high level.

5. It was also found that the total group of pupils in the study perceived improvement (or increase) during student teaching programs in the following seven variables: pupil decision making, variety of procedures,

motivation, introduction of new and different materials, small group work, individual attention, and use of praise and encouragement. Five other variables were perceived by the pupils as being poorer (or less frequent) during student teaching programs. These were knowledge of progress, pupil understanding of the material, use of audio-visual media, teacher competence in the subject matter, and discipline. No significant mean change during student teaching programs was perceived by the pupils with respect to relevance, teacher interest in the pupil as a person, or help outside of class. Changes in each of these fifteen variables were also presented for elementary, junior high, and senior high separately. It was found that pupils rated student teachers highest at the elementary level and lowest at the junior high level.

6. A significant positive relationship was found between supervising teacher perceptions of student teacher preparation and pupil motivational change.

7. The mean supervising teacher perceptions of degree of preparedness of student teachers, while better than "adequate" at all levels, were highest for elementary student teachers and lowest for junior high student teachers.

Implications

The following implications are suggested by the findings of the study:

1. It appears that prospective teachers are being well prepared with respect to motivating pupils, since student teachers are perceived, on the average, to do as well as their supervising teachers with respect to this important variable in the educational process at the junior high and senior high levels, and are actually perceived to bring about improved motivation at the elementary level.

2. In addition to improving motivation, student teaching programs were also perceived to have a beneficial effect upon the programs of the cooperating schools by bringing about improvements (or increases) in pupil decision making, variety of procedures, introduction of new and different materials, small group work, individual attention, and use of praise and encouragement. It appears that teacher education programs are preparing prospective teachers well with respect to these variables. It also seems reasonable to conclude that school systems would be well advised to seek student teachers actively, not only to do their part in helping to prepare prospective teachers, but also for the many positive advantages (especially at the elementary level) which are perceived to accrue from the presence of student teachers, as shown not only by

this research but also by other research cited in Chapter II.

3. Since student teachers were perceived to be weaker than the regular teachers with respect to pupil understanding of the material, knowledge of progress, utilization of audio-visual media, competency in the subject matter, and discipline, and since all of these were also found to be positively correlated with pupil motivation, those in charge of teacher education programs might examine the programs with respect to these areas and attempt to strengthen them where possible. Better orientation of student teachers by cooperating schools might be helpful also. With regard to audio-visual media, for example, which student teachers were found to utilize significantly less than the regular teachers did, better orientation to equipment and resources available at the specific school involved might be very helpful. Also, with respect to discipline, the variable in which student teachers at all three levels involved in this study were rated lowest by both pupils and supervising teachers, it would seem important for student teachers to be given good orientations at the local schools in which they will be working, since policies and practices tend to vary somewhat from one school to another. It seems that teacher education programs at the colleges also might be strengthened with respect to making prospective teachers more aware of the kinds of real

problems which frequently develop and of effective principles of classroom organization and management which can be helpful in preventing, reducing, or resolving such problems. It might be noted that other research has generally been in agreement with the finding of this study that discipline tends to be the area in which student teachers have been least adequately prepared. The second lowest rating given to student teachers by the pupils in this study was with respect to competency in the subject matter. This was seen as a greater weakness of secondary than of elementary student teachers. It is interesting that this same group of pupils perceived a significant, positive relationship between their own motivation and teacher competence in the subject matter (for junior high this correlation was .51). This suggests that teacher education programs, particularly those for prospective secondary teachers, may need to be strengthened with regard to subject matter.

4. For educators interested in improving motivation, it should be of interest that all fourteen of the other variables in this study were found to be positively correlated with motivation, and that six of those factors were found to be correlated at .40 or higher, based on pupil perceptions. Those correlating with motivation at .40 or higher were teacher interest in the pupil as a person, pupil understanding of the material, variety of procedures, knowledge by the pupil of how well he is progressing,

perception of teacher competence in the subject matter, and individual attention. While it is true that correlation does not imply causation, nevertheless it can be stated that there is a high degree of probability that improvement in these variables would be accompanied by improved pupil motivation. It was also found that no single kind of teaching procedure or technique was correlated with motivation at a level higher than .60. These findings tend to confirm other research which indicates that different learners have different styles of learning, and that the best teaching, in terms of motivating pupils, would occur when the teacher is able to use a variety of procedures and motivational techniques, and to select from these in accordance with the individual personalities and learning styles of the specific learners involved.

5. When correlations with motivation were calculated separately for each level, the correlations were found to be not statistically significant (although positive in direction) for the following: use of audio-visual media at the elementary and junior high levels, amount of small group work at junior and senior high levels, and pupil participation in decision making at the senior high level. Although it would be well-advised to replicate this kind of study with other pupil populations before drawing definite conclusions, this study does suggest that these variables may have been overrated for their

motivational effects in some recent non-research literature.

Suggestion for Further Research

The following suggestions for further research are offered:

1. The secondary pupils in this study perceived student teachers to be significantly weaker than the regular teachers with respect to competency in the subject matter. Further studies should be done to determine whether this weakness is perceived to exist in all subject areas equally, or whether student teacher preparation in the subject matter is perceived as adequate in some areas of the curriculum but less adequate in others.

2. The pupils in this study were located in urban schools considered to be in typical, or average, socio-economic areas. It is suggested that other researchers attempt to find out whether the kinds of correlations obtained in this study would be similar or quite different for other classifications of pupils, such as slow learners, highly creative pupils, or pupils in lower socio-economic areas.

3. Some of the very low correlations found between motivation and certain other variables, such as use of audio-visual media at the elementary and junior high levels, amount of small group work at junior and senior high levels, and pupil participation in decision making at the senior

high level, were not expected. It is suggested, therefore, that further studies be undertaken with data obtained from other groups of pupils, in order to determine whether or not the relationships of these factors to motivation would be greater when based on the data obtained from other pupil populations.

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APPENDICES

APPENDIX A

STUDY OF STUDENT TEACHING IN MICHIGAN: SUPERVISING TEACHER FORM OF THE QUESTIONNAIRE

STUDY OF STUDENT TEACHING IN MICHIGAN

This study is being conducted at the request of the Council of State College Presidents for the purpose of analyzing the effect of student teaching programs on the schools of Michigan. The study is being conducted by all the teacher preparation institutions in Michigan and will involve all student teachers, supervising teachers, and building principals working with student teachers during the fall quarter or semester of 1969.

The instruments were developed with guidance from the research departments of three Michigan institutions, and have been reviewed by Michigan Education Association officials, and the Student Teaching Committee of the Detroit Federation of Teachers. Both groups have made contributions to the items in the instrument and have expressed interest in the findings.

It is expected that the results of this study will be given wide distribution and no doubt will provide a basis for the improvement of student teaching and teacher education programs in Michigan over the next decade.

DIRECTIONS TO RESPONDENTS

1. Use the IBM answer sheet provided. The pre-coding in the upper right block in the answer sheet identifies the teacher education institution and the instrument number for purposes of statistical analysis. There will be no way for your specific answer sheet to be identified once you turn it in. The responses will be machine scored and tabulated on Michigan State University equipment. Since your responses will be combined with those from other institutions it is essential that all respondents use the same procedure.

2. Use the scoring pencil provided and mark the spaces to indicate your answer to each item. Blacken the space completely. Be careful not to put any other marks on the answer sheet.

3. Mark no more than one answer for each item. Please answer every item unless instructed otherwise on the instrument.

4. In the instrument "University" means either "college" or "university" as appropriate. "Supervising teacher" also means "cooperating teacher," "sponsoring teacher," or "critic teacher." Student teacher also means "associate teacher."

STUDENT TEACHING IN MICHIGAN

Teacher Questionnaire

1. Which of the following are you now?

   1. A single student teacher
   2. A married student teacher
   3. A supervising (cooperating, sponsoring) teacher
   4. A supervising teacher but with a part-time administrative assignment in addition to teaching
   5. A school administrator

2. What is your sex?

   1. Male
   2. Female

3. Which statement below best describes the community in which you teach?

   1. Large central city (e.g., Detroit, Grand Rapids)
   2. Large suburban community (e.g., Livonia, Flint Carmen)
   3. Small suburban community (e.g., Okemos, Essexville)
   4. Medium sized city (e.g., Battle Creek, Kalamazoo)
   5. Small city or rural area (e.g., Niles, Ithaca)

4. How many years of teaching have you completed including this year?

   1. Three or less years
   2. Four to seven years
   3. Eight to twelve years
   4. More than twelve years

5. How many different colleges or universities have been represented by the student teachers with whom you have worked?

   1. Only one
   2. Two
   3. Three
   4. Four to six
   5. More than six

6. With how many student teachers have you worked in the last 5 years? (Include your current student teacher)

   1. One
   2. Two
   3. Three
   4. Four
   5. Five
   6. Six to ten
   7. More than ten

7. How well do you feel your present student teacher was prepared to enter student teaching?

   1. Extremely well prepared
   2. Well prepared
   3. Adequately prepared
   4. Minimally prepared
   5. Inadequately prepared

8. In this assignment (contact), how was your student teacher scheduled in student teaching?

   1. Full-time
   2. Full-time except he was also enrolled in a non-student teaching credit course
   3. Half-days
   4. Less than half-days

9. In this assignment (contact) how was your student teacher placed?

   1. With you as the single supervising teacher.
   2. In a team-teaching situation (two or more team members).
   3. With two or three different teachers (but not team-teaching).
   4. In a flexible cluster arrangement.
   5. In a campus laboratory school.
   6. In a special program or project different from any of the above.

10. How many weeks is your student teacher scheduled in this assignment (contact)?

   1. 5 weeks or less
   2. 6 or 7 weeks
   3. 8 or 9 weeks
   4. 10 or 11 weeks
   5. 12 to 14 weeks
   6. More than 14 weeks

11. What is your own current teaching assignment?

   1. Grades K, 1, 2
   2. Grades 3, 4
   3. Grades 5, 6
   4. All elementary grades
   5. Middle School
   6. Junior High School
   7. Senior High School
   8. All grades K - 12

12. To what subject area or teaching field are you primarily assigned? (Check one answer only from item 12 and 13.)

   1. All elementary subjects K-5 or K-6
   2. Art
   3. Business Education
   4. English
   5. Elementary departmental or block program
   6. Elementary ungraded program
   7. Foreign Language
   8. Home Economics
   9. Mathematics
   10. Music

13.

   1. Physical Education (Elementary)
   2. Physical Education (Secondary)
   3. Science (Biology, Chemistry, Physics)
   4. Science (General, Natural, Earth)
   5. Social Studies (including History)
   6. Social Science – English combination
   7. Special Education
   8. Speech
   9. Vocational or Industrial Arts Education
   10. Other

QUESTIONS 14 THROUGH 18 deal with any changes in individualized instruction for the pupils which may have resulted from your student teacher's presence.

14. To what extent did your **student teacher** work with (instruct, counsel, tutor) individual pupils?

   1. A great deal
   2. To some extent
   3. A little bit
   4. Not at all

15. To what extent did **you** work with individual pupils as compared to when you do not have a student teacher?

   1. Much more than usual
   2. Somewhat more than usual
   3. About the same as usual
   4. Somewhat less than usual
   5. Much less than usual

16. To what extent was individual help or counseling provided your pupils during non-class hours as compared to what would have been possible if you had not had a student teacher?

   1. Much more than usual
   2. Somewhat more than usual
   3. About the same as usual
   4. Somewhat less than usual
   5. Much less than usual

17. To what extent did conferring with your student teacher take your time so you had less time for individual work with pupils?

1. Frequently
2. Sometimes
3. Seldom
4. Never

18. To what extent did planning with your student teacher take your time so that you had less time for individual work with pupils?

1. Frequently
2. Sometimes
3. Seldom
4. Never

19. To what extent was re-teaching necessary after the student teacher taught?

1. Frequently
2. Sometimes
3. Seldom
4. Never

QUESTION 20 THROUGH 28

To what extent were any of the following instructional activities for your pupils changed because of your student teacher's presence?

20. Amount of small group instruction.

1. Much more
2. Somewhat more
3. No change
4. Somewhat less
5. Much less

21. Provision for make-up work

1. Much greater
2. Somewhat greater
3. No change
4. Somewhat less
5. Much less

22. Follow-up of exams

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer

23. Individual attention to, or tutoring of, pupils

1. Much more
2. Somewhat more
3. No change
4. Somewhat less
5. Much less

24. Supervision of study periods

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer
6. Does not apply

25. Supervision of playgrounds, hallways, etc.

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer
6. Does not apply

26. Amount of material covered

1. Much more
2. Somewhat more
3. No change
4. Somewhat less
5. Much less

27. Discipline

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer

28. Motivation of pupils

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer

QUESTIONS 29 THROUGH 31 deal with the contributions your student teacher may have made to the school program. Did your student teacher make any specific contributions to the school, pupils, or teachers, such as

29. Supervise youth groups in meetings, programs, trips, tours, etc.?

1. Often
2. Sometimes
3. No
4. Don't know

30. Give talk to parent's group?

1. Often
2. Sometimes
3. No
4. Don't know

31. Perform recess, lunch, gymnasium, playground or hall duty?

1. Often
2. Sometimes
3. No
4. Don't know

32. Did your student teacher bring, develop, provide, or suggest any new or different instructional materials?

1. A great many
2. Some
3. No

33. Did your student teacher suggest or provide any other kinds of aid or ideas?

1. A great many
2. Some
3. No

34. What use were you able to make of the contributions (32 & 33) of your student teacher?

1. I used them.
2. I did not use them.
3. I had to discourage him from contributing too freely.
4. My student teacher really did not have much to offer.

35. How many hours per week on the average did your student teacher teach your assigned classes?

1. Less than an hour a week.
2. One to five hours per week.
3. Six to ten hours per week.
4. Eleven to fifteen hours per week.
5. Sixteen to twenty hours per week.
6. More than twenty hours per week.

36. How many hours per week on the average were you able to be away from the classroom while your student teacher was teaching your assigned classes?

1. Less than one
2. 1 – 5
3. 6 – 10
4. 11 – 15
5. 16 – 20
6. More than 20

To what extent did you engage in any of the following additional activities during the time your student teacher was teaching?

37. Visitation in other classrooms or schools.

1. A great deal 2. To some extent 3. Not at all

38. Committee work in the school with pupils and/or staff.

1. A great deal 2. To some extent 3. Not at all

39. Research.

1. A great deal 2. To some extent 3. Not at all

40. Professional reading or writing

1. A great deal 2. To some extent 3. Not at all

41. Work with staff of school or department

1. A great deal 2. To some extent 3. Not at all

42. Participating in supervising teacher seminars or other in-service activities dealing with student teaching.

1. A great deal 2. To some extent 3. Not at all

43. Assisting the principal or other teachers

1. A great deal 2. To some extent 3. Not at all

44. Social or recreational activities

1. A great deal 2. To some extent 3. Not at all

QUESTION 45 THROUGH 49

To what extent did your student teacher relieve other regular staff members who did not have student teachers of the following activities?

45. Teaching

1. Many times
2. Once or a few times
3. Not at all
4. Don't know

46. Chaperoning

1. Many times
2. Once or a few times
3. Not at all
4. Don't know

47. Supervision of lunch duty

1. Many times
2. Once or a few times
3. Not at all
4. Don't know

48. Supervision of study hall

1. Many times
2. Once or a few times
3. Not at all
4. Don't know

49. Supervision of playground

1. Many times
2. Once or a few times
3. Not at all
4. Don't know

QUESTION 50 THROUGH 53

To what extent were other staff members able to engage in any of the following activities because of the presence of student teachers in the building?

50. Visitation in other classrooms or schools

1. Many times
2. To some extent
3. Not at all
4. Don't know

51. Committee work in the school

1. A great deal
2. To some extent
3. Not at all
4. Don't know

52. Research

1. A great deal
2. To some extent
3. Not at all
4. Don't know

53. Professional reading or writing

1. A great deal
2. To some extent
3. Not at all
4. Don't know

54. How many hours per week on the average do you estimate you spent in the physical presence (close enough to see or talk with) of your student teacher?

1. Less than 10
2. 10 to 15
3. 16 to 20
4. 21 to 25
5. 26 to 30
6. 31 to 35
7. 36 to 40
8. More than 40

55. How did the presence of a student teacher affect the average number of hours per week you spent at school as compared to when you do not have a student teacher?

1. Added more than six hours per week
2. Added three to six hours per week
3. Added one to three hours per week
4. Added up to one extra hour per week
5. Had no effect
6. Reduced by up to one hour per week
7. Reduced by one to three hours per week
8. Reduced by three to six hours per week
9. Reduced more than six hours per week

56. How did your student teacher's presence affect the average number of hours per week you worked on job-related activities away from school?

1. Added more than six hours per week
2. Added three to six hours per week
3. Added one to three hours per week
4. Added up to one hour per week
5. Had no effect
6. Reduced by up to one hour per week
7. Reduced by one to three hours per week
8. Reduced by three to six hours per week
9. Reduced more than six hours per week

QUESTION 57 THROUGH 60

To what extent was the time you spent on any of the following activities changed because of your student teacher's presence?

57. Teaching

1. Increased a great deal
2. Increased to some extent
3. Remained about the same
4. Reduced to some extent
5. Reduced a great deal

58. Lesson Planning

1. Increased a great deal
2. Increased to some extent
3. Remained about the same
4. Reduced to some extent
5. Reduced a great deal

59. Paper Grading

1. Increased a great deal
2. Increased to some extent
3. Remained about the same
4. Reduced to some extent
5. Reduced a great deal

60. Help to individual students

1. Increased a great deal
2. Increased to some extent
3. Remained about the same
4. Reduced to some extent
5. Reduced a great deal

QUESTION 61 THROUGH 69

To what extent did you engage in the following activities because of the presence of the student teacher?

61. Planning with or for your student teacher

1. A great many extra hours
2. Some extra hours
3. No extra hours

62. Evaluating your student teacher's progress or activities

1. A great many extra hours
2. Some extra hours
3. No extra hours

63. Holding casual and/or personal conversations not really a part of student teaching.

1. A great many extra hours
2. Some extra hours
3. No extra hours

64. Fulfilling the social obligations resulting from your student teacher's presence.

1. A great many extra hours
2. Some extra hours
3. No extra hours

65. Finding housing for your student teacher.

1. A great many extra hours
2. Some extra hours
3. No extra hours

66. Preparing additional reports.

1. A great many extra hours
2. Some extra hours
3. No extra hours

67. Making additional preparation for teaching.

1. A great many extra hours
2. Some extra hours
3. No extra hours

68. Holding telephone conversations or other conferences with your student teacher.

1. A great many extra hours
2. Some extra hours
3. No extra hours

69. How many times per week on the average did you have contact with your student teacher outside of regular working hours at school? (Telephone, conferences, social engagements, etc.)

1. Less than one
2. One to three
3. Four to six
4. Seven to nine
5. Ten or more

70. How many days during student teaching did your student teacher handle classes for you while you were away for reasons other than student teaching business (professional work, request of principal or other people, personal or private affairs outside of school) in which a substitute would have had to be hired if the student teacher had not been there?

1. None
2. Less than one
3. One to three
4. Four to seven
5. Eight to ten
6. More than ten

71. During student teaching how many days did your student teacher handle classes for any teacher other than yourself while that teacher was away from his class?

1. None
2. One or less
3. Two to four
4. Five to seven
5. Eight to ten
6. More than ten

72. How many hours do you estimate your student teacher spent doing volunteer work in the community where he was assigned for student teaching (youth groups, home service, church work and the like) during his student teaching period?

1. None at all
2. One to five hours
3. Six to fifteen hours
4. Sixteen to thirty hours
5. More than thirty hours

73. What effect do you feel working with student teachers has had on your own teaching performance?

1. Has made me a much more effective teacher
2. Has made me a more effective teacher
3. Has had no effect on my teaching
4. Has made me a less effective teacher
5. Has made me a much less effective teacher

74. What do you think should be the attitude of the administrators and teachers in your school about working with student teachers?

1. Should aggressively seek student teachers
2. Should seek student teachers
3. Should accept student teachers
4. Should resist having student teachers in the school
5. Should refuse to have student teachers in the school

75. If you were starting over, would you accept another student teacher with similar credentials from the same institution under the same general circumstances?

1. I would accept with enthusiasm
2. I would accept
3. I feel neutral about it
4. I would probably decline
5. I would refuse

76. How many times has the university coordinator or supervisor of student teaching been in your school during this student teaching contact?

1. Not at all
2. One to two times
3. Three to four times
4. Five to six times
5. Seven to eight times
6. Nine to ten times
7. Eleven to twelve times
8. Thirteen to fifteen times
9. Sixteen or more times

77. How much help has the university coordinator (supervisor) provided you?

1. All the help I felt was necessary
2. Most of the help I felt was needed
3. Some of the help I felt I needed
4. Little of the help I felt was needed.
5. No help at all

78. Has the university coordinator been helpful to you with any matters not directly concerned with student teaching?

1. He has gone out of his way to be helpful
2. He has helped when asked
3. He has not helped
4. No such help was needed

79. Would you want your student to teach in your building or system next year?

1. Yes
2. No, but would recommend him in a different system or building
3. No

80. Why was this student teacher assigned to you?

1. I volunteered since I feel a professional obligation to help prepare future teachers.
2. I volunteered but only because I felt pressure from an administrator to do so.
3. I volunteered because I thought a student teacher would be helpful to me in performing my school duties.
4. I did not volunteer but was requested by an administrator to take the student teacher.
5. I was forced to work with the student teacher against my will.

APPENDIX B

FORM OF THE QUESTION ON MOTIVATION IN THE STUDENT TEACHER AND ADMINISTRATOR FORMS OF THE QUESTIONNAIRES

FORM OF THE QUESTION ON MOTIVATION IN

THE STUDENT TEACHER AND ADMINISTRATOR

FORMS OF THE QUESTIONNAIRES

A. Student teacher questionnaire.

To what extent were any of the following instructional activities for the pupils in your supervising teachers assigned classes changed because of your presence?

Motivation of pupils.

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer
6. Don't know

B. Administrator questionnaire.

To what extent are any of the following instructional activities for pupils changed because of the presence of the student teachers in your building?

Motivation of pupils.

1. Much better
2. Somewhat better
3. No change
4. Somewhat poorer
5. Much poorer

APPENDIX C

STUDENT QUESTIONNAIRE ON MOTIVATION

STUDENT QUESTIONNAIRE ON MOTIVATION

We would appreciate your cooperation in answering each of these questions carefully. We hope to gain information which will be helpful to both student teachers and regular teachers in making class work more interesting to students.

1. Check your grade level

_____5 or 6 _____7 to 9 _____10 to 12

2. Which is your sex?

_____Male _____Female

3. When did you <u>most recently</u> have a student teacher (NOT including right now or during the summer) ? Check one.

_____During the last year _____Between 1 and 2 years ago

_____More than two years ago _____Never had a student teacher

4. When you had this most recent student teacher, did you have just one or more than one during that semester?

_____just one _____two or more

PLEASE READ THESE DIRECTIONS CAREFULLY. We would like you to base the rest of your answers on <u>your most recent experience with a student teacher</u> (NOT including right now or during the summer) . Compare your experience while you had the student teacher to your experience while the regular teacher alone was in charge.

(If your answer to question 4 was "two or more" base your answers on the student teacher you had earliest in the day.)

5. When did you feel <u>more motivated (interested)</u> ?

_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

6. When did you work more in small groups?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

7. When did the students get more individual attention?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

8. When was there a greater amount of new or different learning materials?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

9. What about discipline (order)?
_____1. Much better with the student teacher
_____2. A little better with the student teacher
_____3. No difference
_____4. A little better with the regular teacher
_____5. Much better with the regular teacher

10. When did you receive more individual help outside of regular class time?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

11. When did you better understand the material?
_____1. Much better with the student teacher
_____2. A little better with the student teacher
_____3. No difference
_____4. A little better with the regular teacher
_____5. Much better with the regular teacher

12. When did you receive more praise or encouragement?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

13. When were the pupils allowed to make more decisions?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

14. Who used more audio-visual aids (such as films, filmstrips, recordings and pictures)?
_____1. The student teacher used them much more
_____2. The student teacher used them a little more
_____3. No difference
_____4. The regular teacher used them a little more
_____5. The regular teacher used them much more

15. When did you feel more that you knew how well you were doing in learning the material?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

16. Was there any difference in how much your class learning seemed related to life outside the classroom?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3 No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

17. Who seemed to understand the subject matter better?
_____1. The student teacher - much better
_____2. The student teacher - a little better
_____3. No difference
_____4. The regular teacher - a little better
_____5. The regular teacher - much better

18. When was there more variety of procedures (different kinds of things that were done in class)?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher

19. When did you feel that there was more interest shown in you as a person?
_____1. Much more with the student teacher
_____2. A little more with the student teacher
_____3. No difference
_____4. A little more with the regular teacher
_____5. Much more with the regular teacher