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ENVIRONMENT AS PERCEIVED BY JUNIOR HIGH STUDENTS

WHOSE TEACHERS ARE PARTICIPATING IN A FIELD-CENTERED

TEACHER-EDUCATION PROGRAM

Abstract approved:

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Purpose of the Study

Teacher education is changing to meet the needs of students going into teaching. Almost without exception, the emphasis is on some form of field study as a part of the professional training.

This study was an attempt to evaluate the effects of a field-centered teacher-education program on the boys and girls in classes to which trainees were assigned. In order to support or refute the basic premise of this study, nine hypotheses were formulated for testing.

Procedures

This research is restricted to 444 students in 20 classes of seventh, eighth, and ninth graders. They are included in 20 classes taught by ten teachers. The ten experimental classes, each under a different teacher, were matched against an equivalent number of control classes taught by the same teachers. Following a pre-test covering seven different areas of attitude, teacher trainees were assigned to the experimental classes. After eight weeks a post-test was administered and results of the two tests were compared. Also compared were the students' nine-week grades and Iowa Achievement Test scores. Included as support for the study were observations and comments of the principal, the teachers, the trainees, and the junior high students.

Findings

The findings of this study are presented in terms of their reference to the nine hypotheses:

1. The experimental group will have a significantly more positive attitude towards the teacher's mode of instruction. There was a significant difference, favoring the experimental group at the .05 level, and the hypothesis was accepted with confidence.

2. The experimental group will have a significantly more positive attitude toward the teacher's authority and control in the classroom. There was not a significant difference at the .05 level. The hypothesis, as stated, was refuted.

3. The experimental group will have a significantly more positive attitude toward the teacher's interpersonal relations. There was not a significant difference at the .05 level, and the hypothesis was refuted.

4. The experimental group will have a significantly more positive sentiment toward the school social structure and climate. There was a significant difference favoring the experimental group beyond the .05 level, and the hypothesis was supported with confidence.

5. The experimental group will have a significantly more positive attitude toward learning. The results for this section of the test showed a significant difference beyond the .05 level of confidence favoring the experimental group. The hypothesis was supported with confidence.

6. The experimental group will have a significantly more positive sentiment toward school. There was a significant difference favoring the experimental group, and the hypothesis was supported with statistical purity.

7. The experimental group will have a significantly more positive sentiment toward their classmates. The experimental group was not significantly different. As stated, the hypothesis was refuted.

8. The experimental group will not differ significantly from the control group in terms of the teacher's grades. The grades received by the two groups were not significantly different at the .05 level. As stated, the hypothesis was supported.

9. The experimental group will not differ significantly from the control group in terms of achievement as measured by the Iowa Test of Basic Skills. Again, there was not a significant difference, and the hypothesis was supported as stated.

Conclusions

It was concluded that teacher trainees assisting junior high teachers can create a more positive attitude toward the learning environment of students with whom they work. In all the data collected and all the observational evaluation made, there was none that indicated that the project was detrimental to the boys and girls.

Recommendations

1. The results of this study demonstrate that teacher trainees can be of value in junior high school classes, and the schools should encourage their use.

2. Further study should be made to determine the most effective use of tutors by teachers.

3. Further studies should be made to determine ways of evaluating field-training experiences.

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I. INTRODUCTION

A considerable amount of effort goes into developing simulated settings resembling true situations to test teaching techniques. The military, for example, uses war games to simulate the atmosphere of battle where men can learn to function in given situations. Management experts have developed non-threatening simulated problems that are used with business trainees for the purpose of teaching decision-making and problem-solving skills (36, p. 134). Teacher education also must introduce the students to situations where the gap between theory and practice can be bridged.

According to Dr. Glasser, "A constant complaint of students is that their school work doesn't prepare them for living in the real world; it seems to be something apart from and distinct from life" (24, p. 222). While he was writing about students in the upper grades, he might well have been writing about students in college. They, too, are demanding relevance as the following quotation by C. Kerr exemplifies:

First, the students of today--and I have talked with many hundreds of them--are asking that their education be more

relevant to their interests. There is a feeling on the part of students, and I think it is quite widespread, that the curriculum serves the faculty more than it serves the student body, that knowledge has been broken up into small bits and pieces. The students want a chance to get a more overall perspective about the nature of society, a greater understanding of themselves, and they too often find there is no place to go for such study (34).

Teacher-education programs have, according to Arthur Combs (14, p. 104), operated on the premise that preparing teachers is a matter of teaching the right method. This philosophy implies the assumption that trainees will be effective teachers because they have learned the "good method". This means that the young person goes through the teacher-education program never having been in contact with students until he enters student teaching, which is rather late to find out that he cannot relate to the students he is to teach. According to Combs, student teaching has been regarded as a kind of examination at the end of learning rather than a learning experience in itself. This is a dreadful waste of time and rather late to find that, after four years of school, one has been preparing for the wrong profession.

If student teaching and teacher education is to be a stimulating and rewarding experience, teacher trainees must, early in their preparation, come into contact with students. The public schools offer a wonderful opportunity to create a real life setting for them to have this experience. Sinclair and Peters (42) suggest that teachers need to accept and to utilize the talents and enthusiasm of prospective

teachers, and to channel them into innovative and meaningful learning experiences for our students. Only in this way will we meet our total objective of teaching students, providing experiences for future teachers and encouraging professional growth.

The Western View Junior High School Project, a cooperative venture between Oregon State University and the Corvallis School District, is designed to commit the trainees to an involvement with junior high students as early as possible.

Purpose of the Study

Observers of the change process are well aware of the fact that change seldom, if ever, exists in isolation. As Bryce Ryan (44, p. 496) points out, most innovations require further innovations because they create stress when they are fitted into existing social or cultural order. For example, the behavior of the Yir Yiront was centered around the stone axe and was an important symbol of masculinity among these Australian Aborigines. When the steel axe was indiscriminantly introduced in large numbers, his self-reliant position was changed into one depending on trade with all of its ramifications (27, p. 158).

So it is, with introducing a program such as the Western View Project, other changes are inevitable. When teacher trainees are introduced into the classroom as participating members, it is

almost assured that the teacher's behavior will change. Opportunities must be offered for interaction between the different members of the group. The teachers must, as Trump (52, p. 23) points out, see ~~the~~ others, including their own students, as aids to the learning process. They must see themselves, their students, and the teacher candidates as co-workers with varying levels of competence. With these new roles demanded of the teachers, change in the learning environment is also inevitable. As the teachers are being placed in this new situation, with demands for new working relationships, there will be changes in the teachers' behavior that will affect the learning environment of their students.

The purpose of this study was to assess the change in the learning environment and to make certain that benefits gained for teacher trainees are not at the expense of the junior high students involved. With this project and its impetus on the behavior of the practicing teacher in mind, the following problem was formulated.

The Problem

The fundamental problem in this study was to assess the learning environment of junior high school students whose teachers were involved in the field-centered teacher-training project. The assessment was made in terms of how the students see their teachers with respect to: (1) their mode of instruction, (2) authority and

control, (3) interpersonal relations, and (4) class structure and climate. A comparison was made between the experimental group and the control group on the basis of their responses to the School Sentiment Index (Appendix A).

A number of subordinate problems were viewed as a partial answer to the major thesis. For example, a comparison was made of: (1) students' sentiments toward learning, (2) students' sentiments toward school, (3) students' relations with their peers, (4) the achievement of the two groups, as measured by standardized tests, and (5) grades received by the students.

Hypotheses to be Tested

In order to support or refute the basic premise of this research, namely, that the use of Oregon State University students in the classroom is not detrimental to the learning environment of junior high boys and girls, the above queries have been formulated into the following hypotheses. Specifically, the study will test the following hypotheses with a criteria of .05 significance:

1. The experimental group will have a significantly more positive attitude toward the teacher's mode of instruction.
2. The experimental group will have a significantly more positive attitude toward the teacher's authority and control in the classroom.

3. The experimental group will have a significantly more positive attitude toward the teacher's interpersonal relations.
4. The experimental group will have a significantly more positive attitude toward the class's social structure and climate.
5. The experimental group will have a significantly more positive sentiment toward learning.
6. The experimental group will have a significantly more positive sentiment toward school.
7. The experimental group will have a significantly more positive sentiment toward classmates.
8. The experimental group will not differ significantly from the control group in terms of teachers' grades.
9. The experimental group will not differ significantly from the control group in terms of achievement as measured by the Iowa Test of Basic Skills.

Significance of the Study

Most teacher-education programs, like many other aspects of education, change slowly. However, members of the faculty of the College of Education at Oregon State University are attempting to accelerate change, thus decreasing the lag created by the gap

between educational theory and practical application. Examples of this can be seen in the cooperative programs in teacher education between Oregon State University and the Corvallis School District, of which the Western View Project is a part.

Informal and attitudinal evaluations conducted throughout the first year of the Western View Project have all indicated that the project is highly successful from the standpoint of the teacher trainees who have participated. The evaluations include written opinions of the Oregon State University students, reports submitted by the project staff based on their observations, informal talks with and written comments from cooperating teachers, and interviews with junior high students.

The resultant effects of the project upon the teacher trainees are important and justify being formally evaluated in another study. However, the effects of the project upon the junior high students are of equal concern to the Oregon State University and even more important from the point of view of the public school staff. Since one of the purposes of the project is "to create a climate conducive to constructive change for junior high school youth" (54, p. 7), it becomes imperative that this aspect be viewed. To the extent that this research shows positive findings with respect to the above stated hypotheses, some confidence can be placed in the effects of

this project on the learning environment of the involved junior high school students.

Background for the Study

The opening of the Hoover Elementary School in Corvallis in 1968, marks the beginning of the cooperative program in a teacher-education complex of which this project is a part. Hoover School was designed and built to provide flexibility where individualized instruction and non-grading were the foci. Oregon State University's Division of Elementary Education and Teaching Research of Oregon College of Education were invited to join in with the Hoover staff to examine individualized and personalized instruction and to develop the curriculum areas. During the summer of 1969 the three agencies entered into a year-long program with the idea for a multi-level, competency-based, teaching-hospital approach to teacher education. This program began that fall, leading to the use of participating students from Oregon State University as tutors, aides, student teachers, and residents.

Since this beginning, there has been a desire to extend the program into the secondary school with the University and the Corvallis School District seeking ways of helping each other. With the local school personnel anxious to get University students into the classroom, all concerned were ready for such a program. During the spring of

1970, a proposal was written seeking funding for a two-year project that would establish an extension of the Elementary Teacher-Training Complex to the junior high schools. Two schools were selected, one in Corvallis and one in Albany. Due to the lack of local funding, the Albany school was unable to participate. This left Western View as the only participating school; thus, it became known as the Western View Project.

The proposed model for the development and implementation of a special preparation program for teachers of adolescents was not the only purpose of the project. There was also the desire to create a climate conducive to change: for student-teacher education, for teachers now in service, for administrators, and for parents. The project was initiated in the fall of 1970 with 11 teachers becoming participants in the training of prospective teachers for junior high students. The project is now in its second and final year as far as the original funding is concerned.

Limitations of the Study

1. Since the sample population is small in terms of the number of teachers and since they are from a single school, there is no evidence that the findings in this study are typical to all schools and to all classes.

2. The division of classes into experimental and control groups was done by random selection from the teachers' schedules of classes. It has not been established that the groups were, in fact, equivalent. They were only similar in that the classes were of the same subject area and nearly equal in total number.

3. There is an unknown amount of resistance to responding to questionnaires on the part of a good many students. There is also an unknown amount of difference in the reading level of the participants, and it is difficult to know how many marked their responses without reading the items. There is, however, no reason to suspect that either the resistance or the difference in reading level favors one group over the other.

4. In order to further minimize the variables, the study was limited to include only 20 classes that were taught by the ten teachers who had been involved in the project during the first year of operation.

5. Finally, the total assessment of a learning environment is complex and requires many sensitive instruments, observations, and techniques. To measure all changes that can be brought about in a classroom would place the problem in an uncontrollable proportion. Thus, the study was limited to the School Sentiment Index and subordinately to student grades and achievement test scores that were readily available from the normal operation of the school.

Summary

Among educators there is much need and sufficient desire to warrant a field-centered experience for prospective teachers. The public schools in and around teacher-education centers are accessible settings for these training grounds.

The teacher trainees benefit the public school by: (1) allowing more time for the teachers to become involved in curriculum design, (2) breaking their classes into smaller working groups, (3) acquainting the teacher with new methods, and, (4) letting the teachers assume some responsibility in teacher training.

Recent work in the field of teacher training by Oregon State University, and specifically the Western View Project, made the choice of this orientation and methodology appropriate for this research. The study was undertaken to investigate the effects of the tutors, assistant teachers, and associate teachers on the learning environments of the selected classes. The intent was to determine whether this utilization of college students might be a benefit to the instructional program of junior high students. In view of the fact that there is considerable demand for placing Oregon State University students in the local schools, it was felt necessary to establish the fact that trainees would not be detrimental to the education of the public school children.

II. REVIEW OF SUPPORTING LITERATURE

Demand for Relevance in Teacher Education

College students from all fields of study and from all sections of the nation seem to have a marked commonality, a cry for relevance. Arth, after interviewing a cross-section of students in education, found that, "They all expressed a distinct disgust for the educational training at the college level... They want to interact with children" (2).

Marilyn Hapgood writes that:

Good teachers have always needed a wide variety of competence, but the new informal education makes demands on the teacher that are formidable indeed. We have not faced this problem squarely yet in our teacher education (28).

Beginning elementary teachers, in a survey by Rosa Colo, complained:

We should have had more time observing and teaching in an elementary classroom... just observing is not enough... Sitting in the back of a room is different from being in the front of the class. You don't know or understand what's really happening unless you're up there teaching (13).

Colo goes on to conclude that:

Education majors should start observing classes in their sophomore year. In the junior year maybe they could be in some kind of cooperative program in which they would take regular classes at college part of the time and work with students in a classroom--observing and teaching--part of the time (13).

Among other things, Melvin Tumin (53, p. 1-18) suggests that

there is a need for actual classroom experience from the very first moment of teacher training. This should include a continuous feedback, under skillful guidance, to on-going seminars with fellow teacher trainees. During these seminars, problems of growth and development, motivation, and more effective teaching should be subjected to constant discussion and evaluation.

The education of a free man must be an education for action. It is in action that the fruits of freedom are manifested, and an education cannot be considered adequate unless it encourages the translation of purpose into active form. Such an education must, therefore, constantly guard against giving aid to the many forces in society that engender in young people a passive, accepting attitude toward life...for instance, if we want to teach children to write well, it is more effective to have them write than to have them read (40, p. 235).

The education of future teachers, too, must be one of action. Cooper (17) suggests a micro-teaching setting. This is basically a scaled-down teaching situation with small numbers of students (3 - 6) for short periods of time. The purpose is to give the student teacher, the tutor, or the teacher assistant the opportunity to practice and perfect certain teaching techniques.

The condition for the setting should approximate the real conditions. The closer these approximate the real situations as they exist in the ordinary public schools, the better it is, according to Somers (48, p. 19). Students can be placed in complete charge of a class only after they have demonstrated familiarity with the subject matter and the methods of handling the subjects they are going to

teach. They should also have demonstrated their ability to teach and manage children by assisting the classroom teacher and through working with individuals and small groups of children.

"Good teaching," suggests Combs, "involves personal interaction. The process of teacher education must be as student centered as modern philosophy demands" (14, p. 68). If teacher training is to produce effective kinds of teachers who can learn the skills of organizing materials and the ability to stimulate and facilitate learning, they must be placed in contact with the children as much and as early as possible; this also allows them the chance to develop their own personalities. They must be able to familiarize themselves with the learning characteristics of children and become concerned with the psychology of their learning. The public school classrooms offer an excellent laboratory where the theories and beliefs can be tested by young people training to become the teachers of tomorrow.

Taylor writes that:

Students in the colleges have been enterprising in developing projects of their own for work in the slums, and there are now approximately 250,000 students across the country who are presently engaged in some form of tutoring program for disadvantaged children. Many others have volunteered for work in job-opportunity centers... Head Start and, of course, The Peace Corps... Students who have had experience in tutoring find themselves doing much more than helping children in arithmetic, spelling and reading. Very quickly the student becomes involved with the entire set of problems experienced by the families in the deprived areas (50, p. 295).

Change in Staffing Patterns

Studies are providing an abundance of evidence about the impact and significance of the environment on human potential. These studies seem to confirm, among other things, that humans need to learn to live with change (39, p. 55). "One needs only to examine the many segments of our cities and the role that each must play to find a common denominator for all. That is the need for change," Young writes (55).

There are many changes operating in our age, in our society and in our schools. "One of the healthiest developments in the teaching field in recent years," suggests Lonsdale, "has been the increasing differentiation and specialization of teaching roles, where teaching is broadly defined" (38, p. 38). He further implies that the concept and the practice of the self-contained classroom is obsolete in the elementary schools. This writer believes the same is true of the departmented self-contained classes in the secondary schools. The math class with 30 students and one teacher, for example, must give way to some other more efficient and effective pattern of organization.

Goldhammer addresses himself to a need for change in the teacher's role as follows:

In the emerging structure of education, the role of the teacher, too, must change. Because of the teachers' demands for recognition, attention has been concentrated upon their roles

in educational policy-making within the school system. Little thought has been given to the modification of their instructional roles for better use of their educational competencies... The well-prepared teacher will be used as a director of a team, and less well-prepared individuals as assistants in special types of activities performed under the leadership of the master teacher. Not all of the teachers' time will be spent in the classroom. To achieve higher levels of instructional performance, probably the master teacher will spend no more than half of the school day in the classroom and the remaining time will be devoted to the development of instructional materials, the formulation of lesson plans with associates, the co-ordination of the activities of the other members of the instructional team, and participation in curriculum development activities... (25, p. 243).

Trump's "team teaching" conceptualizes an organizational pattern that demands a differentiation of staff roles that include the use of college students as teacher assistants. He suggests that:

In the first year of college work, teacher trainees will work in secondary schools, largely in observation and routine duties for five hours a week. Introduced thus, in gradual stages, this "learning by doing" will be increased year by year as the trainees are able to assume greater responsibilities. By the fifth year, trainees will be spending fifteen hours a week in secondary schools, mainly as teachers on an internship, and will be paid for the time they teach... (51, p. 50).

Being a master teacher does not, in itself, qualify one for leadership in the teacher-education field. The master teacher who believes his job is a matter of helping the teacher trainee learn to teach as he does will defeat the efforts of the team concept. Conant suggests the use of "clinical professors" as supervisors of the students in training. These are persons "prepared by training to understand what other specialists have to say, and inclined to listen to them, and prepared by continuing experience in the elementary or secondary

school to demonstrate in concrete teaching situations the implications of expert judgement" (16, p. 15). The strategies demonstrated by the clinical professor, while supervising in the team, can become a force for effecting change through the diffusion process (12, p. 123).

Changing Existing Staffs

Many of the problems encountered in classes are a result of student values which are nurtured by their social environment. The methods of teaching have been to herd the students into schools, separate them into classes, label them according to their abilities, teach them by the same old group methods that we were taught, and then wonder what it is with those kids that they won't learn (19).

Educators recognize that there is a gap between what teachers know and how they behave even in areas thought to be as critical to good teaching as is the "helping relationship" (15). Many teachers who are on tenure have lagged behind, especially in their attitude toward learning. They still operate on the premise that the "learning for learning's sake" concept is a strong motive for the young. Consequently they tend to ignore the need for establishing a helping relationship. These teachers are not intentionally apathetic. They are victims of what Stone calls the "teacher tenure syndrome" (49), and must be stimulated to change.

In a study by Goldhammer and his associates it is reported that:

Many superintendents feel that a different type of teacher may be needed in the classroom. Youngsters, they say, are different today, and the traditional approach of teaching seems lacking in effectiveness. There are barriers present in teaching learning situations, such as language, economics and culture differences, and diverse value-orientations toward education which may be ameliorated through the competence, skills, and supporting attitudes of the teacher (26, p. 25).

The teacher of tomorrow must be a sophisticated organizer, administrator, and stimulator of learning for the complicated and demanding job of teaching. The average individual who is called teacher has not yet developed the skills, understandings and attitudes to be a teacher of this quality. The first priority of the total teaching profession should be to see that opportunities for learning experiences are made available so a teacher can meet the necessary requirements, not just to continue as the teacher of today and yesterday but to become the teacher of the future (20).

Many attempts have been made to increase the effectiveness of the classroom teacher. Technologists have developed new types of equipment and instructional media. Psychologists have discovered and developed new learning theories. Educators have developed new methods and instructional strategies. All of these have helped increase the effectiveness and efficiency of teachers. In the opinion of this writer, however, a more promising way to increase the

effectiveness and efficiency of a classroom teacher is to bring teacher trainees into the classes as instructional aides.

If one accepts the statement by Trump that, "One-third of the teaching day goes to clerical and sub-professional tasks and another third to work that could be done by various kinds of automatic devices" (51, p. 50), ways that better utilize the competencies of professional teachers are necessary. That, Stone concludes, "can be greatly stimulated by the introduction of teacher assistants and tutors" (49).

Teacher-Aide Programs

The increased use of aides and auxiliary personnel is not a new trend in education. For example, Atchley (3) claims that in the sixties the teacher-aide concept was developed and promoted by Head Start to improve the lot of the poor. Aides were recruited from poverty areas, and trained by Head Start. The hope was that they could bridge the communication gap between middle-class teachers and the children from the poverty areas. By 1967, Atchley (3) writes, there was significant pressure from teachers to cause principals to place experimental-aide programs near the top of their priority list. The chief support for the aide program came from the belief that it helped benefit the disadvantaged child directly. It also lowered the pupil-teacher ratio.

There are already some evidences indicating that teacher trainees can greatly facilitate and improve many of the human services, including teaching. In a critical appraisal of the data involving the effectiveness of paraprofessionals, Gartner (22, p. 35) from the "New Careers Development Center" at New York University, has concluded that paraprofessionals can make a significant contribution to the extension and improvement of human-service agency performance. Specifically, he concludes, there is a growing body of data which indicates that: paraprofessionals allow teachers time to give more individualized attention to children, to spend more time in preparation, and to improve the climate for learning (22, p. 35).

An example of the increased use of auxiliary personnel in the classroom can also be seen in a report by Herbert Klausmeier (35). He found an increase in the number of multi-unit schools, which demands the use of teacher interns, instructional aides and instructional secretaries. According to Klausmeier, the number of schools organized as multi-unit schools increased from three in 1967-68 to 164 in the 1970-71 school year. He further predicted that there would be 400 in operation by this year.

In a comparison between the multi-unit schools and traditionally organized schools, Klausmeier reports that teachers in the multi-unit schools: (1) spent more time planning for instruction and diagnosing individual children's needs; (2) specialized more, some working

primarily with individual students while others worked with groups of varying sizes; (3) developed greater interaction among themselves and formed better links with their principal; (4) made decisions about instruction with leaders in a group setting; and finally, (5) had greater job satisfaction and higher morale (35).

Despite the evidence to the contrary, it is not unnatural for teachers and administrators to cling to the notion that their influence over youth is potent. Of the hordes of children who pass through the classrooms each year, there is only a small percentage upon whom the teacher makes a significant impact. In a study of students' motivation, Harrison (29) found that students were successful in school only when their cognitive needs and interests correlated with goals and demands of the school. He found that low students differed from high students in their reactions to boredom. High students continued to be relatively attentive, i. e., to listen, although in some cases with obvious dissatisfaction or distaste. The reactions of the low students, on the other hand, were an active and/or a passive refusal to listen. In most cases the underlying forces controlling motivation were beyond the teacher's control. The most significant factor was the attitudes of the students' parents toward school.

Trump has suggested that, "the basic goal of every teacher, in so far as his pupils are concerned, is to become dispensable, as rapidly and as completely as possible (52, p. 23). Sinks has written,

"There is a real need for the classrooms in today's schools to become more student-orientated. They must become more non-directive if students are to learn, to inquire, to think, and to learn autonomously. It is necessary for more teachers to adapt a style that permits less pendency and more pursuit of knowledge by the learner" (52, p. 390).

Things that teaching assistants can do in helping to bring about change are: the managing of desk work during class, supervising the sub-groups of students, routine checking of student work (49). They can also be trained to give the teacher "interaction analysis feedback, which", Brodi indicates, "is beneficial for student teachers" (7). This writer believes it is beneficial for experienced teachers as well.

Among the skeptics there may become concern about students' reactions to teacher assistants. In a two-year study, Gladfelter (23) found some reactions to student-teaching programs for SEMO State College that are applicable to teacher assistants. Paraphrased, they are: (1) student teachers help make school more interesting, (2) student teachers, being younger, seem to understand kids better than the regular teachers, (3) student teachers do not make kids feel they are being used as guinea pigs, and (4) student teachers do not have poorer discipline than the regular teachers.

Teachers have been expected to be all things to their students and to do all things in the classroom. Their professional role has not been very clear and too often their professional talents have been

wasted on non-professional tasks. In order to produce a realistic economy in education and to make strides toward professionalizing the status of teachers, there must be some relief from some of the non-teaching, time-consuming tasks. This can be done only by following the example of other professions that have long since developed a gradation of activities and tasks and have trained manpower to meet the demands of each level. Thus, there is a definite need for teaching aides in an attempt to help teachers do more for their students (5, p. 201).

Meeting the Challenge

Colleges, universities, and many individuals and groups are looking at existing teacher-training programs with a critical view. There seems to be general agreement that some kind of partnership needs to be developed with public schools. This, they believe, offers hope for strengthening teacher-education programs and simultaneously providing improved inservice education opportunities for teachers in the participating schools (2, 5, 18, 54). There seems to be a wide acceptance that, as Amidon points out, "The new student teaching should be a creative, fulfilling experience, and at the same time, provide for critical analogies in order to make student teachers and their supervisors scholars of teaching" (1).

A program in the School of Education at Michigan State

University is an example of an attempt to answer the challenge. This program assigns students to school buildings in clusters, with one university faculty member responsible for guiding the experiences of the students in no more than two schools. Along with the liaison person from the teaching staff of the school, the college faculty member can develop a program for each student on a weekly or even a daily basis.

Each student's schedule includes some classroom teaching in his field of preparation under the supervision of as many as three teachers. He is also engaged in other activities that are designed to discover other facets of the teacher's job. For example, he will work with small groups in tutoring, visit homes of students, work with administrators and attendance officers or with some of the special service agencies of the school (18, p. 165).

Brigham Young University has initiated their response to the challenge in their program titled "The Individualized Teacher Education Program at Brigham Young University" (5, p. 202). "This program," according to Baird, "provides within a one-semester structure 19 of the 23 semester credit hours of a professional education required for certification" (5, p. 202).

Students of the Brigham Young University program move through the materials or units at their own pace. The emphasis of these units was on teaching and learning behavior designed to facilitate the

changing practices in the public schools. Instead of requiring trainees to complete a given number of semester hours of classwork, they are required to achieve the behavioral objectives of the program. The broad objectives included as units are: (1) orientation, (2) administrative aspects of teaching, (3) behavioral objectives, (4) instructional materials and equipment, (5) teaching methods, (6) human development, (7) micro-teaching, (8) learning, (9) curriculum preparation, (10) student management, and (11) student teaching. A student gains and demonstrates proficiency in each of the areas as he moves through the units by working in the local public schools as well as on campus with lectures, film viewing, and library research, to name but a few.

This program has forced the Brigham Young University staff to practice what they have taught. Instruction must be individualized (5, p. 234).

An Experimental Program in Elementary Education in the College of Education at the University of Florida is organized under four major principles: (1) learning is made personally meaningful and relevant; (2) learning is adjusted to the rate and need of the individual; (3) there is a great deal of self-direction; and (4) there is a close relationship between theory and practice. (4, p. 1).

This program insists that students become engaged in some aspect of teaching process immediately as they enter into it. The experiences are arranged in three levels: (1) classroom observation

and tutoring; (2) providing assistance for the teacher in any way possible; and (3) gaining skills that enable the student to take a class on a full-time basis.

The Western View Project, an effort to further promote the development of a field-centered teacher-education program and the development of an education complex, is an attempt to answer the challenge by the School of Education at Oregon State University. The purpose of this project, like those cited above, is designed to improve instruction in the public schools, and to create a climate conducive to change for students, teachers in training, teachers now in service, administrators and parents (54, p. 1).

Summary

College students in teacher education, teachers now in service, school administrators, and teacher educators have become deeply concerned with teacher-training programs and teacher inservice. Although differing in their emphasis and aim, it is generally accepted: that teacher education must provide for some kind of field experience as early as possible, that teachers in service must learn new ways of meeting the changing needs of their students, and that neither the teacher-training institutes nor the public schools can achieve these ends without the other.

There are some teacher-education institutes that are

experimenting with ways of committing their students to early exposure to the classrooms. The programs at the University of Florida, Brigham Young University, Michigan State University, and Oregon State University are examples of this. Each of these institutions seems to be pointing in a promising direction, but none have all the answers. They must, however, be encouraged to examine their assumptions, to eliminate local obstacles to change, and to continue improving their programs so that better teachers will be produced.

Arthur Combs wrote, "Teachers, like everyone else, behave in terms of what seems important to them" (14, p. 82). It is simply not enough to teach methods. "The belief teachers hold about what is important determines what they respond to and what methods they choose to deal with" (14, p. 83). Teacher-education students must be allowed to experiment with theories and methods as they are learning, if they are to accept them as important. The same holds true for the teachers in service. If the teachers can see examples of new ways of doing things and see them working in their own classes, the new ways will have a better chance of becoming a part of their own belief system.

In general, this research is aimed at the effectiveness of a differentiated staffing organization that utilizes the assistance of college students in the classrooms. There is much support for this concept; but for those who demand rigorous proof, little evidence is available.

III. DESIGN OF THE STUDY

Limitations of the Problem

It has been necessary to make some arbitrary and limiting decisions concerning the form and conduct of this research in order to reduce it to reasonable dimensions and to unify the procedures. Although Oregon State University students do get field experience through channels other than this project, it seemed advisable to conduct the study from a single frame of reference. Since this project places trainees of the different levels of experience in a team setting with the practicing teacher, it was felt expedient to base this research on the principles and constructs of that orientation. Moreover, to the extent that the study's results might be generalized to include all teachers, it seemed advisable to focus only upon the 1971-1972 school year. It was further decided to focus only upon the teachers who had participated in the project during the first year. Therefore, the study was limited to include the classes of ten teachers who were in their second year as participants. In order to further reduce the variables in the study to a minimum, it was decided to limit the control group to include only classes that were taught by the same teachers who were teaching the experimental group. Thus, each participating teacher taught two groups, one class in the experimental group (to which

Oregon State University students were assigned) and one in the control group (with no Oregon State University students).

Rather than selecting samples of students from the selected classes, all members of each class were used for all dimensions of the study except for achievement test. Because the Corvallis School District administers achievement tests only to randomly-selected students (25 percent) and since achievement test scores were only a minor emphasis of the study, it was decided to use only that random sample to compare the achievement scores of the two groups.

Since the make-up of some of the junior high school classes involved in the study changes at the end of the semester, and because the Oregon State University student participants in the experimental classes were assigned for only one quarter, this necessitated the study being limited to the first semester of the 1971-1972 school year.

The Subjects

The students included in this study were seventh, eighth and ninth graders enrolled at Western View Junior High School of the Corvallis School District. There was a total of 444 students distributed in 20 different classes. Because some of the subjects were included in several of the 20 different classes, many of the students were tested more than once. They were, however, instructed to confine their thinking to the particular class in which the index was being given.

The 20 classes used in the study were selected from the schedules of the ten teachers who were participants in the Western View Project. One of each teacher's two selected classes was assigned to the experimental group and the other was assigned to the control group.

As previously stated, all students of the assigned classes were included. All were used for all aspects of the study with the exception of achievement as measured by the standardized test. The students were assigned to the classes by computer and any difference that existed between them was not by design but rather by similarities in schedule conflict. Also, since the assignment of tutors, teaching assistants, and teaching associates was made independently from scheduling, the groups constitute naturally-assembled collectives of students and can be considered as nearly similar as availability permits.

The control group and the experimental group each included two classes of social studies, three classes of science, two classes of mathematics, one class of art, one class of home economics, and one class of English. With the exception of the home economics classes, all were co-educational.

The participating teachers varied in teaching experience from two years experience to 21 years experience. There were three female teachers and seven male teachers in the program, all having had one year working in teacher training under project management.

Training of the group has included nine hours of University seminar under direction of the Oregon State University staff. Initial selection of the participating teachers was made by the school principal and was limited because of the school's budgeted fund which the district established for paying assistant teachers. Eleven teachers were selected from a list of 17 volunteers. Because one of the original 11 left the district, this left only ten who were included in the study.

Both control and experimental groups included the same subject areas and the same grade level as illustrated in Table 1 which also illustrates the subject area and the class size.

Table 1. Class Composition

Teacher ID #	Subject	Grade	Size	
			Control	Experimental
1	Soc Studies	7	27	21
2	Science	8, 9	24	18
3	Soc Studies	8, 9	24	21
4	Math	8, 9	29	19
5	Art	7, 8, 9	19	22
6	Science	7	24	28
7	Home Econ	7, 8, 9	18	16
8	Science	8, 9	24	25
9	Math	7	19	26
10	English	8, 9	16	24
TOTAL			224	220

The classes used in the study were chosen randomly by selecting a class from the teacher's schedule of six classes. One of the six classes was randomly chosen for the experimental group. Then a

control group was randomly selected from the remaining five.

Description of the Western View Project

The Western View Project was a cooperative venture between the School of Education of Oregon State University and the Corvallis School District. It was designed to further promote development of a field-centered teacher-education program and to further develop an education complex. It was centered at Western View Junior High School. It provided a sequence of experiences for training prospective junior high teachers in four phases: tutor, teacher assistant (teacher aide), teacher associate (student teacher), and intern teacher. Each phase offered experiences with junior high students which allowed the candidate to gain confidence as he worked his way up this ladder of increased responsibility.

A prospective teacher entered the program from one of several cooperating teacher-education classes on the Oregon State University Campus. The candidate entered the program at the tutor level and with success, they were elected to become teacher assistants and teacher associates. Since the intern level is essentially a post-graduate level and because it relies upon funding at the district level, few, if any, will be selected for this level (none have been selected for this level at the time of this writing). Candidates were interviewed and evaluated by the Oregon State University project staff. They were

then assigned according to their level of competency and according to the needs of the participating teachers.

Each of the candidates, upon entering the program as a tutor, selected one of several seminar groups (based on time convenience) with which they met weekly. The seminar was the place where the students' experience could become personal and humanistic through interacting with teachers, Oregon State University staff, and each other. It was also a place where educational theory and practice could be bridged together by the candidate in forming his own philosophy.

The cooperating teachers were selected by their principal, and they became a part of the teacher-training corps. They represented the instructional areas of: art, English, home economics, mathematics, music, reading, social studies, and science. An inservice teacher-education program was arranged whereby the project staff was involved in weekly seminars. The seminars placed considerable emphasis on interaction among the group. They provided a dynamic personal-professional experience with others in the project.

Considerable attention was given, both among the teachers and the candidates, to developing competencies for teaching in the junior high schools. There was a strong thrust toward personalizing and individualizing instruction for junior high youth.

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Research Design

While the groups in this study are naturally-assembled collectives of students and are as similar as possible, they are not so similar that one can dispense with the pre-test. Therefore, the nonequivalent control group design, Gage's (10, p. 47) quasi-experimental design number ten, as modeled in Table 2, was selected.

Table 2. Research Design

T_1		e	0 x 0
		c	0 0
T_2		e	0 x 0
		c	0 0
.			
.			
.			
T_{10}		e	0 x 0
		c	0 0

This design involves a control group and an experimental group with both being pre-tested and post-tested. The assignment of "x" was done at random under the control of the experimenter as described above.

Data Collecting Devices and Techniques

The information for the major emphasis of this study (Hypotheses 1, 2, 3, and 4) was collected from students through their responses to the School Sentiment Index (Appendix A). Because the index also is concerned with the areas contained in Hypotheses 5, 6, and 7 and because these areas are worthy of investigation, they were included for consideration. Also, since grades and achievement scores were available to the researcher and because of their importance in assessing learning, they were included as subordinate problems to the major thesis. Some attitudinal evaluation from personal interviews and from written materials submitted to the researcher by teacher trainees and participating teachers has been added as incidental evidence to support or refute the major thesis.

1. The School Sentiment Index - secondary level - was adapted by the researcher by splitting the 83 items into Form A and Form B. This was done by using every other item, beginning with the first item of each sub-group, in Form A. The other items were used in Form B, with items 41, 75, 80, and 83 being used on both forms. This was done to make the two forms nearly the same length.

The index is an outgrowth of work done by the Instructional Objectives Exchange (IOX) who were commissioned, in part, to "focus on the preparation of objectives and measures which could be used to

assess the quality of an educational program, e. g., a program directed to improve the learner's attitude toward school..." (30, p. 3).

Because the measures were employed with groups, necessity of producing measures that were valid for a given learner could be avoided and some aberrance in the responses to the measures could be tolerated. A criterion-reference measurement approach was used where an objective was formulated as clearly as possible, and then measures were devised to assess the attainment of the objective. The emphasis was on the congruence between the objective and the measuring device (30, p. 4).

While there were no normative data of the classical norm-referenced type yet available, the I. O. X. staff surveyed several available self-report and observational measures related to attitudes toward school. They also consulted a number of educators familiar with sociological and attitude committants of school attendance and with attitude measurement techniques. Then they used items that solicit the learner's feelings regarding the school environment (30, p. 5). Scores for the instrument were obtained by assigning points (1, 2, 3, 4) to each of the responses as is indicated on a scoring guide (Appendix B). The answer sheets used a four-point Likert Scale: (A) if you strongly agree, (B) if you agree, (C) if you disagree, and (D) if you strongly disagree. Students were to circle their responses A, B, C, or D. The points (4, 3, 2, 1) were assigned and were

reversed depending on the question with "4" always indicating the more positive attitude. A scoring guide indicates the scores assigned to the different items (Appendix B).

2. Students' grades used in the study were those from the computer that were recorded on students' grade cards and permanent records.

3. Results of the Iowa Achievement test (3), which was administered in the normal operation of the school to randomly-selected students, were used in the study. Because of the relative short duration of the study, the achievement scores can only serve to establish or refute similarities in the groups.

4. Personal interviews with Western View students, participating teachers, and teacher trainees were conducted to determine some of the subtle and observed reactions to the program that are often overlooked when using any kind of questionnaire. Also considered were the written comments of teacher trainees who were asked to keep written journals of their daily experiences.

Methodology

The two selected classes of each participating teacher were paired with one of the pair receiving the experiment. To the classes of the ten teachers involved, as the model on page 139 illustrates, a pre-test was given, using the School Sentiment Index, Form A. This

index was administered in the third week of September, 1971, which was the latest date possible before the teacher trainees entered the experimental classes. The post-test was administered during the second week of November, the latest possible time before the end of the junior high quarter at which time students' schedules were changed, thus changing the make-up of the groups.

Achievement test scores were collected from those given in the normal operation of the school. The student grades were those reported by teachers at the end of the nine weeks, the normal grading period. Interviews were collected and recorded throughout the first semester from junior high school students, Oregon State University students and the participating teachers.

The major area of the investigation described in the hypotheses was measured by the School Sentiment Index in the pre-test and post-test. Results of these scores were compared as is illustrated by the statistical model (Table 3).

In order to calculate the terms for the t-test formula, ten matched pairs of classes were established. The classes were paired on the basis that: being taught by the same teacher, having a similar number of students, being taught the same subject matter, and having students of similar ability constituted near equality except for the treatment of the experiment. Thus, one class (listed under group c) was established as a control class. The other (listed under group e)

Table 3. Statistical Model

Teacher	Group c			Group e			D	D_2
T_1	S_1	S_2	X_c	S_1	S_2	X_e	$(X_e - X_c)$	$(X_e - X_c)^2$
T_2	S_1	S_2	X_c	S_1	S_2	X_e	$(X_e - X_c)$	$(X_e - X_c)^2$
.								
.								
.								
T_{10}	S_1	S_2	X_c	S_1	S_2	X_e	$(X_e - X_c)$	$(X_e - X_c)^2$
			X_c			X_e	(D)	$(D)^2$

$$T = \frac{\sum D}{\sqrt{\frac{N \sum D^2 - D^2}{N - 1}}}$$

The symbols are:

S_1 Pre-test

S_2 Post-test

X_e $(S_2 - S_1)$ for the experimental group

X_c $(S_2 - S_1)$ for the control group

D $X_e - X_c$

N Total number of pairs

received the experiment. S_1 represents the classes' mean scores for the pre-test, and S_2 represents the classes' mean scores for the post-test. X_c is the change from pre-test to post-test for the control classes and X_e is the same change for the experimental classes. D , then, represents the deviation from zero difference in the two mean changes. The same pairings were used in all statistical calculations.

The Sentiment Index was administered to all classes by the researcher with the teacher being excused from the class during the testing. The general instructions were read with consistency to the students by this researcher. The students were left to read the items and to respond independently. When students did not understand a statement, they were permitted to ask questions and were given answers with consistency.

Summary

This Western View Junior High School study was limited to the students in the two randomly-selected classes of each of the ten teachers involved in the second year of the teacher-education project. This made a total of 444 students in the 20 classes.

The experimental group consisted of the students in the classes to which Oregon State University trainees were assigned (one taught by each of the ten teachers). The control group consisted of the students in the classes to which no Oregon State University trainees were

assigned (one taught by each teacher). Both groups were pre-tested and post-tested. The two groups were evaluated in terms of grades, achievement on a standardized test and the School Sentiment Index.

Other information from Oregon State University trainees, junior high students, participating teachers, and the project staff were collected by this researcher. Comments from these interviews are included as data to support the thesis.

IV. PRESENTATION AND INTERPRETATION OF DATA

Organization of Data

In Chapter IV, findings of this study are presented and interpreted. For this research, any reference to the different classes was minimized except where reference to a specific class was typical to the others or where it helped to explain cause. The classes were referred to by their code number. Any reference made to teachers was also made by number instead of name.

Statistical Procedures

All of the areas of the study that were evaluated by pre- and post-testing have been described by the hypotheses. In order to evaluate the level of confidence by which the hypotheses can be supported or rejected, the results have been subjected to the t-test.¹

For the purpose of this study, a probability at the .05 level of confidence was required to demonstrate a statistical significance. While the .05 significance level of the test was rigorous for this kind

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$$t = \frac{\frac{\sum D}{N}}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}}$$

of data, it was so intended to satisfy those who may be skeptical. With the size of the sample, that required a t-score of 2.262 (47, p. 549).

Because each of the classes contained a different number of students, all raw scores from the School Sentiment Index were converted to percent. The G. P. A. for each class was used to compare the matched classes. Data from the Iowa tests were presented by using the grade equivalence. Since these scores are normally presented to the nearest tenth of year, all were multiplied by ten in order to do away with the fractions.

To calculate the terms for the t-test by the formula, ten matched pairs were established. The pairs were established on the basis of teachers as described in Chapter III. The same pairings were used in comparing all elements of the research. The following symbols were used:

S_1 = Pre-test

S_2 = Post-test

X_e = $(S_1 - S_2)$ for the experimental group

Make-up of Classes

During the 1971-1972 school year, ten of the original participating teachers of the teacher-training project were selected for this study. The classes from their schedule that were selected were made up of junior high students in grades seven, eight, and nine. These

were typical classes of the school as students were scheduled into them by computer. Some of the classes selected were elective courses and an equal number were required courses.

In matching the groups, as illustrated by the statistical model (Table 3), two classes taught by the same teacher were used to form the pairs. In any matched pair, the two classes were either both required courses or they were both elective courses. Thus, there were five pairs of required classes and five pairs of elective classes.

Since the classes included several subject areas, many of the students were included in two or more classes. However, students were instructed to confine their thinking to the particular class in which the test was taken. The tests were administered to all classes by this researcher so that instructions were consistent.

Student Attitudes Toward Teachers

The students' attitudes toward their teachers were measured by their responses to the School Sentiment Index (Appendix A). This measurement was made in terms of how the students perceive their teachers': (1) mode of instruction, (2) authority and control methods, and (3) interpersonal relations.

Form A of the index was administered as a pre-test and Form B was administered as a post-test. The data from these tests were tallied and treated statistically for the pairs of classes in the

experimental and control groups. The data are summarized and appear in Tables 4 to 6.

The mode of instruction was evaluated by student responses to those questions in the index that were designed for that dimension.

In Form A (the pre-test) these items were:

- (1) My teacher rarely explains to me why I deserve the grade I earned on assignments and tests.
- (7) My teacher tries to make the subject interesting to me.
- (11) My teacher really likes the subject.
- (15) My teacher is boring.
- (19) In this class I have to memorize too many facts.
- (23) My teacher won't give me any idea of what will be on the test.
- (27) My teacher frequently shows a lack of preparation.
- (35) My teacher grades me fairly.
- (43) My teacher often wastes too much time explaining things.

In Form B (the post-test), the items designed to measure the mode of instruction were:

- (3) My teacher gives assignments that are too difficult.
- (7) My teacher gives assignments that are just busy-work.
- (12) My teacher gives me too much work.
- (15) My teacher explains assignments clearly.
- (18) My teacher has encouraged me to think for myself.

Table 4. Mode of Instruction

Teacher	Experimental			Control			D	D ²
	S ₁	S ₂	X _e	S ₁	S ₂	X _c	(X _e -X _c)	
1	76	80	4	78	68	-10	14	196
2	68	73	5	75	57	-18	23	529
3	80	75	-5	76	77	1	-6	36
4	73	73	0	75	68	-7	7	49
5	77	72	-5	79	73	-6	1	1
6	70	82	12	74	76	2	10	100
7	77	78	1	74	72	-2	3	9
8	74	82	8	77	61	-16	24	576
9	67	71	4	65	68	3	1	1
10	66	72	6	80	78	-2	8	64
							85	1561

$$t = \frac{\sqrt{\frac{\sum D^2 - (\sum D)^2}{N - 1}}}{\sqrt{\frac{85^2}{9}}} = \frac{15610 - 7225}{30.5} = 2.79$$

- (19) My teacher won't give me any idea of what will be on the tests.
- (22) I get tired of listening to the teacher talk all of the time.
- (27) I usually get the grade I deserve in class.
- (40) My teacher gives me individual help willingly.

The data from these items are summarized in Table 4. A t-score of 2.79 showed the comparative difference of the experimental group to be significant beyond the critical t-score of 2.262. It showed that the experimental group made significant gains (beyond the .05 level of confidence) over the control group. These data strongly support the hypothesis and indicate that the teacher trainees working with the teachers did change the attitudes toward the mode of instruction.

The teachers' authority and control was measured by the students' responses to the following items in Form A:

- (5) My teacher allows students some choice in what they study in class.
- (21) My teacher has been fair to me.
- (24) My teacher recognizes my right to a different opinion.
- (34) My teacher lets me know what is expected of me.
- (38) My teacher will discuss grade changes with me.

Table 5. Authority and Control

Teacher	Experimental			Control			D	D ²
	S ₁	S ₂	X _e	S ₁	S ₂	X _c	(X _e - X _c)	
1	71	82	11	68	79	11	0	0
2	67	73	6	69	58	-11	17	289
3	79	78	-1	80	79	-1	0	0
4	70	67	-3	68	66	-2	-1	1
5	68	76	8	63	73	10	-2	4
6	70	71	1	72	78	6	-5	25
7	74	80	6	73	79	6	0	0
8	72	77	5	61	57	-4	9	81
9	48	65	17	61	59	-2	19	361
10	66	68	2	79	76	-3	5	25
							42	786

$$t = \frac{\frac{\sum D}{N-1}}{\sqrt{\frac{N\sum D^2 - (\sum D)^2}{N-1}}} = \frac{\frac{42}{9}}{\sqrt{\frac{7860 - 1764}{26}}} = \frac{42}{26} = 1.6$$

In Form B, the items designed to measure the authority and control were:

- (5) In this class, individual students can choose assignments which are interesting to them.
- (21) My teacher doesn't allow me to be creative.
- (30) My teacher still respects me as a person even when I've done poorly on my school work.
- (34) My teacher is too concerned with discipline.
- (39) My teacher cannot control the class..

The data from these sections of the tests are shown in Table 5 with a t-score of 1.6. While this falls short of the critical t-score of 2.262 and is not significant at the .05 level of confidence, it does strongly favor the experimental group. There is a suggestion that the teachers' means of authority and control are more acceptable when other adults are working in the room. These results are encouraging if not conclusive.

The teachers' interpersonal relations were measured by the student responses to the following items in Form A:

- (3) My teacher is interested in the things I do outside of school.
- (12) My teacher is personally concerned about me.
- (25) I like to talk to my teacher after class.
- (41) My teacher is often impatient.

In Form B, the items to measure this dimension of the students' attitude were:

- (4) My teacher is interested in what I have to say.
- (13) My teacher doesn't try to understand young people.
- (28) My teacher is friendly toward the students.
- (37) My teacher just doesn't care about students if they are not going to college.

The data from the above items were calculated and appear in Table 6. A t-score of 1.18 was below the critical t-score of 2.262 and was not significant at the .05 confidence level. However, the results do favor the experimental group and one can conclude that the experiment did improve the students' attitude toward the teachers. It is also interesting to note that the positive gain was greater than for any of the other dimensions of the index.

Other Student Attitudes

Besides the attitudes toward the teachers cited above, the School Sentiment Index also measures students' attitudes toward: (1) learning, (2) the school social structure and climate, (3) their peers, and (4) the school in general. The data from this segment of the index were tallied and treated statistically for the pairs. The data are summarized and are presented in Tables 7 to 10.

The students' attitudes toward learning were reflected by their responses to the items designed to measure that dimension of the index. In Form A, those items are:

- (8) I hate having to do homework for this class.
- (16) I like the challenge of a difficult assignment.
- (30) My favorite classes are those in which I learn the most.
- (39) I do more school work than just what is assigned.

In Form B, the items to measure attitudes toward learning are:

- (9) I would rather learn a new sport than one I already know.
- (16) The main reason for going to school is to learn.
- (33) I often buy books with my own money.
- (38) I do more classwork than just what is assigned.

The data from these items were summarized and appear in Table 7. A t-score of 2.78 was well above the critical t-score of 2.262 and was significant beyond the .05 confidence level. This strongly supports the hypothesis and has shown, with statistical purity, that teacher trainees working with teachers improved the students' attitudes toward learning.

The school social structure and climate as perceived by students were reflected by their responses to the following items in Form A:

- (4) My class has too many rules.

Table 7. Learning

Teacher	Experimental			Control			D	D ²
	S ₁	S ₂	X _e	S ₁	S ₂	X _c	(X _e - X _c)	
1	65	73	8	62	63	1	7	49
2	51	69	18	55	60	5	13	169
3	67	70	3	64	67	3	0	0
4	65	63	- 2	65	56	- 9	7	49
5	67	64	- 3	64	58	- 6	3	9
6	61	72	11	64	68	4	7	49
7	69	65	- 4	60	61	1	- 5	25
8	66	73	7	54	56	2	5	25
9	62	69	7	61	63	2	5	25
10	58	67	9	65	73	8	1	1
							43	401

$$t = \frac{\frac{\sum D}{N}}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}} = \frac{\frac{43}{10}}{\sqrt{\frac{4010 - 1849}{9}}} = \frac{4.3}{1.55} = 2.78$$

- (10) This class is run like a prison.
- (13) Whenever I'm called to one of the offices at school, I feel upset.
- (18) My class is too big.
- (20) If I had a serious problem, I don't know one teacher in my school I could go to.
- (22) I usually don't get involved in many class activities.
- (33) There is no privacy at school.
- (36) My teacher likes working with young people.
- (37) At school, other people really care about me.

In Form B, the items to measure school social structure and climate were:

- (2) I often feel rushed and nervous at school.
- (6) If I did something wrong at school, I know I would get a second chance.
- (10) School depresses me.
- (11) I think there is too much pressure in school.
- (14) I'm very interested in what goes on in this class.
- (17) Students have enough voice in determining how this class is run.
- (23) I attend many school events.
- (26) Our class is so large, I often feel lost in the crowd.
- (36) If I thought I could win, I'd like to run for an elected student body office.

The data from these items are summarized and appear in Table

Table 8. School Social Structure and Climate

Teacher	Experimental			Control			D	D ²
	S ₁	S ₂	X _e	S ₁	S ₂	X _c	(X _e - X _c)	
1	72	71	- 1	70	68	- 2	1	1
2	70	70	0	67	58	- 9	9	81
3	72	72	0	82	72	-10	10	100
4	61	68	7	73	59	-14	21	441
5	72	64	- 8	71	67	- 4	- 4	16
6	67	75	8	71	73	2	6	36
7	71	72	1	69	67	- 2	3	9
8	76	77	1	60	57	- 3	4	16
9	66	69	3	70	61	- 9	12	144
10	65	67	2	76	73	- 3	5	25
							67	869

$$t = \frac{\frac{\sum D}{N}}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}} = \frac{\frac{67}{10}}{\sqrt{\frac{8690 - 4489}{9}}} = \frac{6.7}{23.7} = 2.83$$

Table 8. It is worthy to note that there was negative change in the control groups for all teachers except number five. The t-score of 2.83 was significant above the .05 confidence level and favored the experimental group over the control group. These results strongly support the hypothesis with statistical purity.

The students' attitudes toward their peers were reflected by their responses to the following items in Form A:

- (6) Students in this class aren't very friendly.
- (14) School is a good place for making friends.
- (26) I really feel I'm part of my class.

In Form B, the items that reflected attitudes toward peers were:

- (8) I enjoy working on class projects with other students.
- (20) I really like most of the kids in this class.
- (31) I really enjoy the social life here.
- (32) There are many closed groups of students here.

Data from these items are summarized and presented in Table 9. Again, the results were highly favorable for the experimental group. The t-score of 2.85 was significant above the .05 confidence level and supports the hypothesis as stated. However, the negative movement from S_1 to S_2 in six experimental classes and nine control classes is revealed by examination of the Table.

Table 9. Peer Group Relations

Teacher	Experimental			Control			D	D ²
	S ₁	S ₂	X _e	S ₁	S ₂	X _c	(X _e - X _c)	
1	78	78	0	80	61	-19	19	361
2	70	74	4	70	65	-5	9	81
3	82	73	-9	77	79	2	-11	121
4	81	64	-17	78	57	-21	4	16
5	76	72	-4	83	70	-13	9	81
6	77	74	-3	82	73	-9	6	36
7	74	68	-6	83	71	-12	6	36
8	75	74	-1	67	58	-9	8	64
9	67	74	7	81	78	-3	10	100
10	75	75	0	84	77	-7	7	49
							67	945

$$t = \frac{\frac{\sum D}{N}}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}} = \frac{\frac{67}{10}}{\sqrt{\frac{9450 - 4489}{9}}} = \frac{6.7}{23.5} = 2.85$$

The attitudes toward school were measured by the students' responses to the following items in Form A:

- (2) I do my best in school.
- (9) When I'm in this class, I'm usually unhappy.
- (17) I stay home from school whenever I can.
- (31) Each September I look forward to the beginning of school.
- (32) I like school better than my friends do.

In Form B, the attitudes toward school were reflected by responses to:

- (1) Each day I look forward to coming to class.
- (25) I would like to go to school all year long.
- (29) I try to do good work in my class.
- (35) I liked school better when I was in elementary school than I do now.
- (41) If I had the choice, I wouldn't go to school at all.

The data from these items were summarized and appear in Table 10. The t-score of 1.75 falls short of the critical t-score and was not significant at the .05 level. It was, however, significant at the .09 level of confidence, and was strongly positive in favor of the experimental group. Close examination of the table reveals a negative movement for most of the classes from pre-test to post-test, with considerable more negative movement in the control group.

Table 10. General School Attitude

Teacher	Experimental			Control			D	D ²
	S ₁	S ₂	X _e	S ₁	S ₂	X _c	(X _e - X _c)	
1	77	74	- 3	70	65	- 5	2	4
2	68	66	- 2	65	57	- 8	6	36
3	70	65	- 5	76	68	- 8	3	9
4	50	66	16	69	65	- 4	20	400
5	73	68	- 5	71	74	3	- 8	64
6	70	71	1	79	61	-18	19	361
7	73	67	- 6	73	66	- 7	1	1
8	70	79	9	49	61	12	- 3	9
9	74	70	- 4	73	64	- 9	5	25
10	70	68	- 2	79	73	- 6	4	16
							49	925

$$t = \frac{\frac{\sum D}{N}}{\sqrt{\frac{N\sum D^2 - (\sum D)^2}{N - 1}}} = \frac{\frac{49}{10}}{\sqrt{\frac{9250 - 2401}{9}}} = \frac{4.9}{2.76} = 1.75$$

Academic Grades and Achievement Comparisons

A comparison between the experimental group and the control group was made in terms of academic grades and achievement test scores as subordinate considerations to the major thesis. Data for these two aspects were taken from the student records that are kept in the normal operation of the school.

The academic grades were those received by the students at the end of the quarter. These grades were tallied on a four-point scale and treated statistically for the pairs of students in both groups. The calculations are shown in Table 11. Since the t-score of $-.74$ falls in the confidence interval of $(-2.685 < 0 < 2.685)$, the grade distribution of the two groups was found to be equal at the .05 level of confidence. These results did support the hypothesis that there would be no difference in the way the teacher graded the two classes.

The Iowa Achievement Test scores were taken from the students' records. Since the school tested only a randomly-selected 25 percent of the students, only the scores of those students tested were included in these calculations. The composite scores expressed in grade equivalent were used rather than the specific subject scores. In order to eliminate the awkwardness of the decimal, the grade equivalent scores were multiplied by ten. The scores were then tallied and treated statistically for the pairs of classes. The

Table 11. Grade Distribution

Teacher	Experimental	Control	D	D ²
	X _e	X _c	(X _e - X _c)	
1	300	300	0	0
2	266	313	- 47	2209
3	363	363	0	0
4	248	206	42	1764
5	289	250	39	1521
6	250	258	- 8	64
7	257	310	-53	2809
8	224	213	12	144
9	258	284	-26	676
10	200	237	-37	1369
	265	277	-78	10,556
	N = 213	N = 215		

X_e = Class mean G. P. A. x 100 for experimental group

X_c = Class mean G. P. A. x 100 for control group

$$t = \frac{\frac{\sum D}{N} - \frac{(\sum D)^2}{N^2}}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{N - 1}}} = \frac{\frac{-78}{213} - \frac{(-78)^2}{213^2}}{\sqrt{\frac{105560 - \frac{6084}{213}}{213 - 1}}} = \frac{-78}{105.1} = -.74$$

calculations of these data are shown in Table 12. The t-score of .97 falls in the confidence interval of $(-2.685 < 0 < 2.685)$. Statistically, the two groups are equal at the .05 level of confidence in terms of achievement as measured by the Iowa Achievement Test.

Observations of the Principal

Some observations of this researcher, who is the principal of the building, are included as data supporting the major premise of this thesis. These observations are summarized in the following paragraphs:

1. Through the time-saving assistance of the trainees, teachers participating in the project have spent more time preparing for their classes.
2. The participating teachers have continued their professional development by several means, such as: having opportunities to share ideas with their colleagues, having opportunities to share teaching strategies with trainees, verbalizing purposes and methods with trainees, having the opportunities to work cooperatively with the college staff, and utilizing research while seeking ways of utilizing the help that is provided them.
3. Several of the participating teachers have made strides toward individualizing their instruction.
4. Many of the trainees have developed learning packages that are being used in the school.
5. Through cooperative planning by different teams, individual differences among teachers have been recognized. This was demonstrated when various tasks in the presentation were divided among individuals in such a way as to utilize the competencies of each member.

Table 12. Iowa Test Scores (composite)

Teacher	Experimental	Control	D	D ²
	X _e	X _c	(X _e - X _c)	
1	87	84	3	9
2	106	103	3	9
3	80	84	- 4	16
4	96	97	- 1	1
5	86	86	0	0
6	76	79	- 3	9
7	84	84	0	0
8	88	83	5	25
9	85	79	6	36
10	85	84	1	1
			10	106

X_e = grade equivalent x 10 for experimental group

X_c = grade equivalent x 10 for control group

$$t = \frac{\frac{\sum D}{N}}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N - 1}}} = \frac{\frac{10}{10}}{\sqrt{\frac{1060 - 100}{9}}} = \frac{10}{10.3} = .97$$

6. Teacher trainees have become involved in the total school program. They have gone far beyond the requirements to volunteer their time to work in activities outside the classroom. These included such areas as: sports, lunch-time activities, evening dances, and organized camping trips with faculty and students.
7. The participating teachers have become more directly involved in curriculum development and are seeking more change in the curriculum than are the teachers who are not participants.
8. Most of the participating teachers actively involve the trainees in planning and evaluating their teaching strategies.
9. The participating teachers have become more open with each other and are more willing to share the things they are doing.
10. The participating teachers appear less threatened by the presence of strangers in their classes, and, in fact, they encourage others to visit their classes.

Teacher Comments

The following comments, written by teachers, were collected during the two years of the program and are representative of the total collection. The quotations are:

1. As a core teacher, I feel I have developed much during this term in learning to work with the college tutors. It has made me take a more realistic look at myself and my teaching methods. I am not one to ever really be satisfied with the way I teach a unit. There is generally a better way for the next time. I hope I communicated this to the six girls I worked with during the term.
2. We spent much time together during the term because the tutors all were around for my conference period at least once a week. This gave us time to discuss what and why I did things as I did in class, why students behaved as they

did, and what can be done to make the course more beneficial for students. We discussed methods and had hoped to start working on learning packages, but time ran out. Next term for sure. We did get to discuss new program changes for next year and the advantages and disadvantages of the new as well as the old program. Great term for teacher growth and for greater understanding of students.

3. I have grown as a teacher this fall. I feel a good deal of this growth has been "forced" from me through working with tutors. The immense help I have received from the tutors has enabled me to spend more time with individual students - this and the personal help from the tutors, I feel, have greatly aided the students, too.

Sometimes I worry that I haven't given the tutors enough help and guidance. I guess I need more experience in this area - or maybe more guidelines as to how much structure college students need.

- 4.. Self-evaluation: I feel that my early efforts with tutors were not too worthwhile, but as time passed, I was able, with the help of tutors, to discover ways to use their time better. Often this caused me to change my teaching methods for the better. I did find it difficult to work with tutors who were quiet and offered little suggestion. I hope I can improve here.
5. Self-evaluation: I have been involved with the tutors and have found working with them interesting and exciting as well as discouraging at times. I feel I've given a great deal of myself and my time to this part of the program. I've also gotten a great deal from it.

Working with "tutors" was personally rewarding. It was more work, more worry. But, I believe it is the direction teacher training must take. More experience will increase our effectiveness as trainers. It will also, undoubtedly, make this course more directly meaningful.

6. I think the project needs more structure. I have a feeling that aides and tutors are being used in ways for which they are not qualified. I think we are assuming that the aides and tutors are more qualified than they are. I think tutors and aides need much more direction and guidance than they seem to be getting.

7. I feel very positive about the project. Students depend on the tutors to help answer questions which teachers cannot answer all at once. They are a great help with routine work, freeing the teacher for teaching. It helps the tutors better understand what the career of teaching is all about.

Substitute teachers often comment about how helpful tutors are to help carry out the normal classroom routine. Since the tutors know the students by name, they are helpful in classwork. Students feel more secure with at least one "teacher figure" present. A few substitute teachers seem to resent the tutors as the students turn to the tutor for help rather than to the substitute. It appears that they see the tutors as a threat to their "authority role."

8. I would hate to have to go back to the pre-project days without the tutors.
9. This is the best thing that has happened in a long time. It is great. More time to teach and plan is available. Also, it gives one a chance to give large classes more individual help.
10. It is a fine idea, but still needs planning to better meet needs of everyone - like time for teachers to plan, evaluate, etc., with tutors.
11. It is a valuable program for me as a teacher in large classes. It helps me to work with the "trouble-gatherings." The tutors generally have skills that make them resource persons as well.

Tutor Comments

The written comments that follow were the responses of tutors collected over the past two years. They, also, are representative of a total collection and reflect the general attitude of tutors toward the program. These quotations are:

1. It has been a valuable experience for me. I really enjoy

working with the students. I believe that with this experience I won't feel such a stranger when I walk into a classroom for my student teaching. I now know that teaching is the best thing for me.

2. I think it has been a wonderful experience. It has helped me affirm my decision that teaching is really what I want to do.
3. I think this project offers a really fantastic opportunity to work with kids and teachers before actual student teaching. I would like to thank the Western View staff for providing the opportunity.
4. I think it is great and much better than last year even. Tutors are being used much better and more effectively. They can come away from here with a much greater knowledge and a feeling of accomplishment. The teacher let me have a couple of students to help in any way that I believed would be beneficial. She always took time to show me the many possibilities and ideas to get kids to read.
5. I think the project is a fine idea. I know that, except for one person, everyone I've known who's worked in it has found it really worthwhile. It helped me develop a feeling for the classroom, exposed me to some techniques of teaching, and I met some very fine kids.

My experience at Western View was the most valuable aspect of my two terms before student teaching, because it allowed for the practical application of the principles I learned in my academic classes. Kids are real; reading books about them isn't, if you see what I mean.

6. I have found Western View to be a good experience in acquainting me with methodologies used in teaching. It's just not the same to sit and hear about theories and how they apply to the classroom situation without actually seeing them practiced. Western View has given me the opportunity to apply and better understand learning techniques. I feel, because of such a program, I will be able to adapt better to a student-teaching assignment.
7. I think the project helps the college student realize whether or not teaching is for him. It's not for me.

8. The idea of working in the school is fantastic. The experience I gained is much more valuable to me than any education class I've had yet.
9. I think that this experience is really great and it has proved to be valuable to me. I am now acquainted with the classroom situation and problems that arise. It has given me insight into certain ways of teaching: that is, a structured class versus an unstructured class. I only wish more schools would have this program available so more students could be helped.
10. I really think it is great. I think that the more the tutor applies himself and the more the teacher will allow him to do, the better it is.
11. I feel that it is extremely worthwhile and needs to be continued. It is a good way for tutors to decide, before it is too late, to get out of education if they decide they can't work with kids. That will help prevent poor teachers from going out to work.
12. It's been great -- I'm really looking forward to coming back next term. I have a lot to learn, that's obvious, but I think I've gained a lot, too. I really enjoy the general attitude I feel here -- that of openmindedness, willingness to try new things to keep these kids enthused with school.
13. I feel that the experience has been an extremely rewarding one for me -- it gave me a chance to work with the kids in a classroom situation and I began to realize what it's all about! Also, because of the chance to work with the kids-- I found that I'm in the wrong place and I'm switching to elementary ed.
14. The only fault with the program is that in the future there should be every subject represented, teacher-wise I mean, so that you have a chance to be in your own familiar classroom situation. Otherwise -- everything was great including the seminars which were a great help in discussing problems or just good things that happened at Western View.
15. This experience has given me an excellent idea of what a career as a teacher in my subject area would be. I have been able to see what kinds of responsibilities a teacher has and what kinds of satisfactions come from the job.

16. I have been able to apply some of the techniques I have learned. We have been given as much freedom as we need to do what we want. And we've been given many opportunities to learn. The program is an excellent example of a project that should have been done years ago.
17. I can truthfully say that my experiences at Western View have been intensely rewarding. Through observing, helping and being responsible for portions of the teaching, I feel that I have become sharply and vividly aware of the profound problems I will soon be facing and my responsibilities toward the facilitation of significant learning.
18. This was my first experience in the field of education at O. S. U. I must admit, I was rather lost at the beginning, but now I can see that "being lost" was a part of the whole thing of being a "teacher." I found the seminars of great value after the "newness" and strangeness had diminished. A revision of most of my preconceived ideas on education has occurred and I feel that I have a much better idea of what it is to be a teacher. I was able to get close to other people interested in the same things and talk any problems over. The students I work with, as well as the teachers at the junior high, have become friends of mine and they regard me in the same way. I have thoroughly enjoyed this experience, and I want to rejoin the program my junior year. It has helped me establish certain goals I want to achieve in becoming not just a qualified teacher, but a good, effective one.
19. This experience has been really a good start in my teaching experience. I feel that I really am getting more from my times over at the junior high because I have had previous experience with kids outside of my major area, in Chemawa and the Big Sister Program.
20. I really feel at home in the home ec. dept. I am having fun and I'm learning too. Kids are really friendly and trusting. Maybe next term I'll be better able to express myself.
21. I really enjoyed the junior high experience. It was a first for me. There happens to be a quality of fear attached with all first happenings, but fear passes into beauty when old barriers are toppled. The action I was involved in this term made me "wake-up" to many facts. The most important one

is this: There are people out in schools that are dying -- there are kids out in schools who are learning but not as fully as possible. I want to help. I also want to learn.

22. This experience was all together good as far as I'm concerned. It far exceeded my expectations as the amount of actual work with an entire class. I'm really glad that I was able to work with subject matter (a separate field really) from the one I'd originally thought of. Though I will go on to teach in the subject of my original choice, I had the opportunity to learn the teaching method in another field. I'll be more aware now of what's going on in other types of classes. I think if possible students in the tutoring stage of this program should be encouraged to work in a field other than their own.
23. For me, this class has been a really neat experience. It has opened the door to what teaching will probably be like for me. I was not too keen on teaching at the beginning of the term, but now I'm very enthusiastic. (Hope it lasts.) The seminars were very valuable. I wish there'd been more time to discuss our tutoring problems and general experiences.
24. The experience in the classroom was tremendous! The rapport between the kids (and the teacher) and me was really honest and deep. I feel that I am leaving these kids this term not as a "tutor," but as a friend who accepted them as they were.

Junior High Student Comments

Throughout the quarter, as he visited with students from classes where tutors were working, the researcher asked of them: "How do you like having college students working in your class?" and "Why?" The answers were recorded and a representative sample of these answers are quoted below. They are:

1. I'd rather have them than have just the teacher. Because you get more help.

2. I like 'em. They understand us better than the teacher.
3. Great! The teacher's not so crabby.
4. They're okay. They don't bother me any.
5. They're a lot of help. They grade papers so the teacher doesn't have so much to do and you can get more help from her.
6. I don't like 'em. I'm taking the course from the teacher, not them.
7. They're right on! They understand us.
8. I really like them. They help the teacher and she has more time and doesn't get so uptight with all the kids asking questions. It makes the class more interesting.
9. At first I didn't like them, but now I do. We got used to them in class and they can help us.

Summary

The findings of this study have been presented in Chapter IV. The measurements were tested for their significance by calculating the t-score with 2.262 indicating a probability at the .05 level of confidence which was required. Also included were some comments collected from teachers, teacher trainees, and junior high students.

The measurements from those segments of the instrument that showed a significant difference between the experimental group and the control group included: (1) attitudes toward the mode of instruction; (2) attitudes toward learning; (3) attitudes toward the school

social structure and climate; and (4) attitudes toward peer-group relations.

Measurements that showed no significant difference were students': (1) attitudes toward their teachers' authority and control; (2) attitudes toward their teachers' interpersonal relations; (3) general attitude toward school; (4) academic grades; and (5) achievement test scores.

Observational evaluation made by the principal, the teachers, the teacher trainees, and the junior high students are highly supporting of the program. In all the measurements and all data collected from this experiment, there was none that indicated any hint of negative effects of the teacher-training program upon the learning environment of junior high students.

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The Problem

This research has been an experimental study of the effects upon ten junior high school classes in which teacher trainees were used as tutors. It was designed as an effort to determine the extent to which this teacher-training program might have negative effects upon the students. The effectiveness of tutors in the classrooms was viewed mainly from the point of view of the junior high students involved, and only subordinately from the point of view of the teachers and tutors.

Literature Review - Summary

A review of the literature on field-centered teacher education reveals that a considerable amount of effort is being made to place teacher trainees in the classrooms as early and as much as possible. The concept has established itself as a reputable part of the teacher-training program among college students and college faculties, and is becoming more acceptable to the public schools.

There is general agreement among the writers with regard to the functions and activities of tutors in classrooms. The method by which they are placed and the arrangement of their time, however, is

as varied as the programs. The role and the relationship between the college faculty and the public school is also as variable.

While varying in their approach at joining together as teams in teacher training, colleges and public schools are making progress and are making strides in becoming cooperative partners.

The majority of studies on teacher education consists of unsupported judgement of the writers and participants. In reviewing the literature, it has not been possible to find any rigorous quantitative studies that were concerned with evaluating effectiveness from the public school pupils' point of view.

Design and Methodology

Evaluation of the study was made on measurable change in the attitudes of students between a pre-test and a post-test. During the eight weeks between tests, tutors and student teachers had been assigned to the experimental classes with the control classes remaining with the teacher alone. Since there were only ten teachers who had been involved in the program during its first year, it was decided to confine the membership to that group and their 20 classes.

The major premise of the study (students' attitude toward teachers, learning and school) was measured by the School Sentiment Index. The index was equally split to form the pre-test and the post-test. A comparison of grades and Iowa Test scores was made to add

to the major thesis. Written and verbal evaluations were collected from the principal, teachers, college students and junior high students, and are included as supporting evidence.

Summary of the Findings

The findings of this study are presented in terms of their supporting or refuting the nine hypotheses which were formulated for investigation.

1. The students' attitudes toward their teacher's mode of instruction became significantly more positive among the experimental classes than among the control classes. Seven teachers of the experimental classes made positive gains, while in the control classes seven made negative gains. The t-score of 2.79 reveals that the hypothesis can be accepted beyond the .05 level of confidence. The results clearly indicate that the mode of instruction was more favorably accepted by the experimental groups.

2. The students' attitudes toward their teacher's authority and control did not change significantly more positive in favor of the experimental group at the .05 level of confidence. While the statistical procedures have not shown a difference at the required level of confidence, the change could have favored the experimental group by chance only about 15 times out of 100. These results are encouraging and are worthy of further study.

3. The students' attitudes toward their teachers' interpersonal relations were not significantly different at the .05 level of confidence in the two groups. It should be noted, however, that there was a positive gain in every class from pre-test to post-test with all teachers. It might also be pointed out that the statistical procedures indicate that the experiment was not detrimental to the teachers' interpersonal relations as viewed by the students. This was encouraging and worthy of further study.

4. The students' attitudes toward learning improved significantly more in the experimental group than they did in the control group. The t-score of 2.78 firmly favors the experimental group with statistical purity. It can be concluded from these results that the use of teacher trainees in the classroom can improve the attitudes of students toward learning. The results are encouraging indeed.

5. The students' attitudes toward the school social structure and climate overwhelmingly favored the experimental group over the control group. The t-score of 2.83 was well beyond the .05 level of confidence. The relative gain in favor of the experimental group could have happened by chance only one or two times in 100. With statistical purity, it can be concluded that the students' attitudes toward the school social structure and climate were greatly enhanced by the experiment. It is also worthy to note that there was negative movement

in nine of the ten classes in the control group and only two classes in the experimental group.

6. The students' attitudes toward peer-group relations showed significantly less negative movement in the experimental than in the control group. While the t-score of 2.85 is well beyond that required to satisfy the criteria set forth in the study, it is worthy to note that six experimental classes and nine control classes showed negative movement. The experiment favors the experimental group with statistical purity; however, the negative movement by both groups is a shocking result and indicates a need for further study.

7. The students' general attitudes toward school favored the experimental group at about the .09 level of confidence. While this is not significant at the level required by this study, the results do strongly favor the experimental group and are highly encouraging. They also suggest a need for further study.

8. The academic grades received by the students at the end of the nine weeks were not significantly different in the experimental group from those in the control group. The similarity of the grade distribution is revealed by the t-score of -.74. From this it appears that the teacher-training program did not noticeably affect the grading practice of the teachers. However, if the additional time provided for assisting students does improve academic performance, a comparison of grades should favor the experimental group even though the

teachers' grading practices had not changed. The results of this comparison, therefore, are inconclusive and further study would be desirable.

9. The Iowa Achievement Test scores did not differ significantly between the experimental and the control group. The t-score of .97, with relative statistical purity, suggest that the two groups were nearly equal in academic achievement. Since these scores were taken from testing of last year and because of the short duration of the experiment, these results can be of no relative value in determining the effects of the experiment. They can only be used to help support the relative similarity of the two groups for the purpose of matching. A study of longer duration is needed and is desirable to measure the effects on academic achievement.

Summary of Observational Evaluation

The collected comments from the principal, teachers, teacher trainees, and junior high students are highly supportive of the experiment. While the teachers have had some criticism of some parts of the teacher-training program, they all expressed general satisfaction and a desire to continue. Almost totally, they believe that the use of college students has: helped them improve their instructional strategies, provided more time for helping students, and helped change their teaching style. They have nearly all moved from acceptance of

the program to being enthusiastic about continuing in it.

The value of the project for the teacher trainees is indispensable from their point of view. This feeling is expressed almost unanimously in their comments. The satisfaction expressed by these young people is overwhelming and is frequently described as being one of the most valuable parts of their professional training. As Harrison Gardener wrote about field experience for future teachers, "No aspect of teacher education better exemplifies everything that John Dewey spoke of than the work that is done in professional laboratory experiences" (21).

Of the students who were interviewed, a few that represented the total group were included. They, too, have accepted the college trainees almost totally. They have become so accustomed to them that in many cases where substitutes are in the class, they look to the college students for leadership.

Conclusions

1. It was concluded that teacher trainees used in assisting junior high school teachers can create a more positive attitude toward:
 - (a) the teachers' mode of instruction.
 - (b) the classes' social structure and climate.
 - (c) learning.
2. It was concluded that teacher trainees in the junior high

school classes can decrease the negative change in attitude toward peer-group relations.

3. It has been shown statistically that the use of teacher trainees is in no way detrimental to the student's attitude toward:

- (a) the teachers' authority and control.
- (b) the teachers' interpersonal relations.
- (c) school in general.

4. It has been shown statistically that the use of teacher trainees in the junior high school classes has not been harmful to the teachers' grading practices.

5. There were no conclusions drawn with respect to the effects of the experiment on achievement test scores. Further study is needed.

6. It was concluded that both junior high teachers and students can quickly adapt to the concept of having several teacher trainees working in their classrooms at the same time and that they will learn to utilize their services efficiently.

7. It has not been shown statistically that an improved attitude toward school has any positive change in academic grades or achievement.

8. It has been concluded that the use of teacher trainees in the junior high classes is not detrimental to that part of the learning environment described in the nine hypotheses of this study.

The results reported in this study may be summarized by suggesting that teacher trainees working with teachers, who fully utilize their services, will greatly facilitate the learning environment of the classes in which they work. It would, however, be a mistake to interpret these results as a general prescription about improving the performance of all teachers. Although the findings were limited to a particular set of teachers, this researcher believes that most teachers would benefit by having trainees assist them.

Recommendations for Further Study

Several problems that need further study were indicated as by-products of this research. While further repetitions of this kind of study are desirable, there is a greater need to:

1. determine the most effective use of trainees in the classrooms.
2. determine the optimum length of time that the teacher trainees should spend in the classes.
3. determine a performance criteria for the trainees to move through in their field experience.
4. determine if trainees working with students over a longer time would improve academic achievement.
5. determine if monetary reimbursement has any change on teacher-trainee effectiveness.

6. determine if an in-service program for participating teachers would improve the effectiveness of the trainee-teacher relationship.
7. determine if tutors can make contributions just as valuable in subjects outside their own major teaching field.
8. determine the effectiveness of a substitute teacher replacing an ill teacher working in a team setting with trainees.
9. determine the attitude of the teaching profession toward and the legality of not hiring substitutes to replace ill teachers who are working in a team setting with trainees.
10. determine the relative merits of some interaction analysis training before trainees entered field-experience programs.
11. determine the consensus among experts in the field of teacher education concerning an adequate evaluation procedure.

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APPENDICES

APPENDIX A

WESTERN VIEW JUNIOR HIGH SCHOOL
SCHOOL SENTIMENT INDEX
Form A

Class Identification No. _____

Personal Data: (1) age _____ (2) sex M F (circle one)
(3) grade _____

Directions: For each statement, indicate the extent to which you agree or disagree by circling the letter indicating your choice:

(A) If you strongly agree, (B) If you agree, (C) If you disagree, (D) If you strongly disagree.

1. My teacher rarely explains to me why I deserve the grade I earned on assignments and test. A B C D
2. I do my best in school. A B C D
3. My teacher is interested in the things I do outside of school. A B C D
4. My class has too many rules. A B C D
5. My teacher allows students some choice in what they study in class. A B C D
6. Students in this class aren't very friendly. A B C D
7. My teacher tries to make the subject interesting to me. A B C D
8. I hate having to do homework for this class. A B C D
9. When I'm in this class, I'm usually unhappy. A B C D
10. This class is run like a prison. A B C D
11. My teacher really likes the subject. A B C D

12. My teacher is personally concerned about me. A B C D
13. Whenever I'm called to one of the offices at school, I feel upset. A B C D
14. School is a good place for making friends. A B C D
15. My teacher is boring. A B C D
16. I like the challenge of a difficult assignment. A B C D
17. I stay home from school whenever I can. A B C D
18. My class is too big. A B C D
19. In this class I have to memorize too many facts. A B C D
20. If I had a serious problem, I don't know one teacher in my school I could go to. A B C D
21. My teacher has been fair to me. A B C D
22. I usually don't get involved in many class activities. A B C D
23. My teacher won't give me any idea of what will be on the test.
A B C D
24. My teacher recognizes my right to a different opinion. A B C D
25. I like to talk to my teacher after class. A B C D
26. I really feel I'm part of my class. A B C D
27. My teacher frequently shows a lack of preparation. A B C D
28. It is difficult for a new student to find friends in this class.
A B C D
29. I have a good relationship with my teacher. A B C D
30. My favorite classes are those in which I learn the most.
A B C D
31. Each September I look forward to the beginning of school.
A B C D

32. I like school better than my friends do. A B C D
33. There is no privacy at school. A B C D
34. My teacher lets me know what is expected of me. A B C D
35. My teacher grades me fairly. A B C D
36. My teacher likes working with young people. A B C D
37. At school, other people really care about me. A B C D
38. My teacher will discuss grade changes with me. A B C D
39. I do more school work than just what is assigned. A B C D
40. Lunch time at school is not fun. A B C D
41. My teacher is often impatient. A B C D
42. If I had the choice, I wouldn't go to school at all. A B C D
43. My teacher often wastes too much time explaining things.
A B C D

APPENDIX B

WESTERN VIEW JUNIOR HIGH SCHOOL
SCHOOL SENTIMENT INDEX
Form B

Class Identification No. _____

Personal Data: (1) age _____ (2) sex M F (circle one)

(3) grade _____

Directions: For each statement, indicate the extent to which you agree or disagree by circling the letter indicating your choice: (A) If you strongly agree, (B) If you agree, (C) If you disagree, (D) If you strongly disagree.

1. Each day I look forward to coming to class. A B C D
2. I often feel rushed and nervous at school. A B C D
3. My teacher gives assignments that are too difficult. A B C D
4. My teacher is interested in what I have to say. A B C D
5. In this class, individual students can choose assignments which are interesting to them. A B C D
6. If I did something wrong at school, I know I would get a second chance. A B C D
7. My teacher gives assignments that are just busy-work.
A B C D
8. I enjoy working on class projects with other students.
A B C D
9. I would rather learn a new sport than one I already know.
A B C D
10. School depresses me. A B C D

11. I think there is too much pressure in school. A B C D
12. My teacher gives me too much work. A B C D
13. My teacher doesn't try to understand young people. A B C D
14. I'm very interested in what goes on in this class. A B C D
15. My teacher explains assignments clearly. A B C D
16. The main reason for going to school is to learn. A B C D
17. Students have enough voice in determining how this class is run. A B C D
18. My teacher has encouraged me to think for myself. A B C D
19. My teacher won't give me any idea of what will be on the tests. A B C D
20. I really like most of the kids in this class. A B C D
21. My teacher doesn't allow me to be creative. A B C D
22. I get tired of listening to the teacher talk all of the time. A B C D
23. I attend many school events. A B C D
24. I think my teacher is too old-fashioned. A B C D
25. I would like to go to school all year long. A B C D
26. Our class is so large, I often feel lost in the crowd. A B C D
27. I usually get the grade I deserve in class. A B C D
28. My teacher is friendly toward the students. A B C D
29. I try to do good work in my class. A B C D
30. My teacher still respects me as a person even when I've done poorly on my school work. A B C D
31. I enjoy the social life here. A B C D

- 32. There are many closed groups of students here. A B C D
- 33. I often buy books with my own money. A B C D
- 34. My teacher is too concerned with discipline. A B C D
- 35. I liked school better when I was in elementary school than I do now. A B C D
- 36. If I thought I could win, I'd like to run for an elected student body office. A B C D
- 37. My teacher just doesn't care about students if they're not going to college. A B C D
- 38. I do more class work than just what is assigned. A B C D
- 39. My teacher cannot control the class. A B C D
- 40. My teacher gives me individual help willingly. A B C D
- 41. If I had the choice, I wouldn't go to school at all. A B C D
- 42. My teacher has "pets". A B C D

APPENDIX B

FORM A - SCORING MAT

Class No. _____

Teacher's Sex _____

N _____

	A	T	B	T	C	T	D	T	Sum	mean	mode
1	1		2		3		4				
2	4		3		2		1				
3	4		3		2		1				
4	1		2		3		4				
5	4		3		2		1				
6	1		2		3		4				
7	4		3		2		1				
8	1		2		3		4				
9	1		2		3		4				
10	1		2		3		4				
11	4		3		2		1				
12	4		3		2		1				
13	1		2		3		4				
14	4		3		2		1				
15	1		2		3		4				
16	4		3		2		1				
17	1		2		3		4				
18	1		2		3		4				
19	1		2		3		4				

FORM A cont.

	A	T	B	T	C	T	D	T	Sum	mean	mode
20	1		2		3		4				
21	4		3		2		1				
22	1		2		3		4				
23	1		2		3		4				
24	4		3		2		1				
25	4		3		2		1				
26	4		3		2		1				
27	1		2		3		4				
28	1		2		3		4				
29	4		3		2		1				
30	4		3		2		1				
31	4		3		2		1				
32	4		3		2		1				
33	1		2		3		4				
34	4		3		2		1				
35	4		3		2		1				
36	4		3		2		1				
37	4		3		2		1				
38	4		3		2		1				
39	4		3		2		1				
40	1		2		3		4				
41	1		2		3		4				
42	1		2		3		4				
43	1		2		3		4 *				
44	4		3		2		1				

FORM B - SCORING MAT

Class No. _____

Teacher's Sex _____

N _____

	A	T	B	T	C	T	D	T	Sum	mean	mode
1	4		3		2		1				
2	1		2		3		4				
3	1		2		3		4				
4	4		3		2		1				
5	4		3		2		1				
6	4		3		2		1				
7	1		2		3		4				
8	4		3		2		1				
9	4		3		2		1				
10	1		2		3		4				
11	1		2		3		4				
12	1		2		3		4				
13	1		2		3		4				
14	4		3		2		1				
15	4		3		2		1				
16	4		3		2		1				
17	4		3		2		1				
18	4		3		2		1				
19	1		2		3		4				

FORM B cont.

	A	T	B	T	C	T	D	T	Sum	mean	mode
20	4		3		2		1				
21	1		2		3		4				
22	1		2		3		4				
23	4		3		2		1				
24	1		2		3		4				
25	4		3		2		1				
26	1		2		3		4				
27	4		3		2		1				
28	4		3		2		1				
29	4		3		2		1				
30	4		3		2		1				
31	4		3		2		1				
32	1		2		3		4				
33	4		3		2		1				
34	1		2		3		4				
35	1		2		3		4				
36	4		3		2		1				
37	1		2		3		4				
38	4		3		2		1				
39	1		2		3		4				
40	4		3		2		1				
41	1		2		3		4				
42	1		2		3		4				