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PUPIL ATTITUDES TOWARD SCHOOL, PEERS, AND TEACHERS UNDER
ABILITY-GROUPED AND RANDOM-GROUPED SYSTEMS IN
WEBER AND OGDEN SCHOOL DISTRICTS

by

Val R. Christensen

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Educational Administration

Approved:

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1964

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Val R. Christensen

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INTRODUCTION

Attitudes are usually defined as feelings for or against something (Remmers and Gage, 1955). They are very important in the lives of people because they help determine future success in an individual's life. Because of them one works to get the things he wants, one votes for or against certain issues, one joins a cause, opposes something, or attempts to influence others.

Nature of Attitudes

Young (1940) gives an excellent and clear discussion of the nature and characteristics of attitudes. After explaining that attitudes are essentially internally aroused sets or predispositions of an individual toward some specific or general stimulus, he lists three important features of attitudes which must be noted. First, attitudes are usually associated with some image, idea, or external object of attention. Second, they not only mark the inception of overt response to situation, but they also give direction to the action. Attitudes are characterized by approach or withdrawal, likes or dislikes, favorable or unfavorable reactions, avoidant or adient tendencies, and loves or hates as these are directed to specific or generalized situation. Third, attitudes are linked to feelings and emotions.

The unique feature of attitudes is stated in Young's third characteristic--attitudes are linked to emotions. People generally take a stand for or against Jack Paar or Pogo, for instance, and defend their position with enthusiasm. If they don't show this emotion then perhaps they only have an opinion or judgment.

Where emotion is involved, the effect upon learning is going to be intensified. A strong positive feeling for a subject will result in the quick acquisition of a great deal of material in a short time. On the other hand, if a person has a strong negative attitude toward a subject, learning will be difficult or impossible until the situation is restructured to bring to the front some situation with a positive potential. A high school boy once told me, "Mr. Christensen, I think I could like you if you were not an English teacher!" What he was really saying was that his attitude toward English was such the he could never like anyone associated with it, and I might as well stop trying to teach him the parts of speech. Fortunate is the teacher whose students are positively oriented toward him and his subject matter. He will find them working with greater vigor, learning more, more quickly.

Source of Attitudes

Of all the institutions that have an influence on the attitudes of people, the home and school play a leading role. Klineberg (1951) directs our attention to these important

influences:

There can be no doubt, however, as to the very important part played by two dominant institutions, the home and the school (in the formation of attitudes). What we learn from our parents and our teachers exerts its influence precisely because it enters our lives at the most impressionable period, when the pronouncements of adults are surrounded by an aura of omniscience. Experimental investigations have shown a definite correlation between the attitudes of parents and of children; and a lesser, though still positive, correspondence between the attitudes of school children and their teachers. Interestingly enough, this latter correspondence appears to grow with increasing age, and it may very well be that the school gradually supplants the home as the dominant influence. This last conclusion requires further study, but there can be no denying the fact that in the formation of attitudes the responsibility of parents and teachers can hardly be overestimated. (Klineberg, 1951, p. 44)

Klineberg (1951) further explains that the transmission of attitudes can either be direct or subtle. If a teacher or parent expresses his dislike for a certain race, there is a direct influence on the person listening. Sometimes there is a more subtle approach, however. A slight change in the voice when a certain name or nationality is mentioned may affect the attitude of a child. This subtle approach to the influence of attitudes make it very difficult to find the complete explanation of attitude formation by casually observing the home or school environment. An understanding of this fact should influence the parent and teacher to analyze their own attitudes, and to keep in mind the almost intangible means of their transmission to the child.

Statement of the Problem

Every interested person in education is aware of the fact that educational procedures and curricula can and do change attitudes (Remmers and Gage, 1955). Even if these attitudes are the result of influences outside the school, the educator must be concerned with them. It is for this reason that the introduction of any variant into the teaching process must be studied in relation to what influences this change might have upon the attitudes of the students involved.

Because an individual's attitude is important to mental hygiene (Remmers and Gage, 1955), the attitude change made by a new teaching method might have a direct influence upon his mental health, especially if the teaching procedure caused an adverse effect upon the student's attitude toward his environment—playmates, teachers, and institutions.

Since the introduction of homogeneous grouping into the secondary school, in the decade before 1920, a number of schools have grouped their students according to ability levels. Some studies have reported the achievement level of the students in the ability-grouped schools (Douglass, 1954). Other areas of consideration, in addition to achievement, are the relationship of ability to emotions, social acceptance, and attitudes. Because the situation under which a student is taught may have a lasting effect upon the attitude he has toward various curricula, occupational goals, and our democratic social order (Remmers and Gage, 1955), it is imperative that we compare the attitudes of students in an ability-grouped

school system (toward peers, school, and teacher) with those of students in a random-grouped system.

This study will have as its purpose an evaluation of problems arising in ability grouping in relation to attitude development.

Objectives

The objectives of this study are as follows:

1. To determine whether there is any significant difference between the attitudes toward school, peers, and teachers of students in ability-grouped versus random-grouped school districts who have been placed in classes under a modified system of ability grouping and a system of random or heterogeneous grouping.
2. To determine if there is any significant difference in the attitudes toward school, peers, and teachers of pupils at different ability levels. The three ability levels are superior, average, and slow.
3. To determine if there is any significant difference in attitudes toward school, peers, and teachers between girls and boys in the superior, average, and slow groups.
4. To obtain an over-all comparison between the school related attitudes of ability- and random-grouped students.

HYPOTHESES

In order to fulfill the objectives of this study, the following experimental hypotheses were proposed. Their areas of applicability are identified.

Comparison of Attitude Toward Peers

1. There are no significant district differences in attitudes toward peers between ability-grouped versus random-grouped students.

2. There are no significant differences in attitudes toward peers at different ability levels (superior, average, developmental) within each district.

3. There are no significant sex differences in attitudes toward peers within each district—boys versus girls.

Comparison of Attitudes Toward Teacher

4. There are no significant district differences in attitudes toward teachers between ability-grouped versus random-grouped students.

5. There are no significant differences in attitudes toward teachers at different ability levels (superior, average, developmental) within each district.

6. There are no significant sex differences in attitude toward teachers within each district.

Comparison of Attitude Toward School

7. There are no significant district differences in attitudes toward school between ability-grouped versus random-grouped students.

8. There are no significant differences in attitudes toward school at different ability levels (superior, average, developmental) within each district.

9. There are no significant sex differences in attitudes toward school within each district—boys versus girls.

REVIEW OF LITERATURE

Sources of Attitudes

Attitudes are learned through experience. Remmers, Gage, and Rummel (1960) define an attitude as "an emotionalized tendency, organized through experience, to react positively or negatively toward a psychological object." Allport (1935) has written a summary in which he describes the methods by which an individual may learn an attitude. He states that the first step is "integration." A person's experiences over a long period of time will eventually lead to a definite attitude toward a particular object of value. For instance, if a student failed to pass a grammar examination over a period of time, he may acquire an unfavorable attitude toward grammar. A teacher's unjustified requirement to copy many lines of Shakespeare may lead to a distaste for this type of literature in the student's life. Secondly, Allport explains that attitudes may be developed by a process of "Differentiation." In this case a very specific attitude is developed from a general one. That is, a student builds a dislike for school over a period of years. This dislike for school in general will eventually grow into a specific distaste for teachers, arithmetic, and reading, both in and out of school.

Thirdly, Allport points out that "shock" is the cause of some attitudes. The painful experience of a physician's

needle may leave an unpleasant attitude that will last a lifetime. Finally, attitudes are acquired by "adoption." These are the attitudes that a child would receive from his parents, friends, school, and church. This is probably the greatest source of attitudes. Quite often a teenager's attitude toward race is a "repeat" of his parents.

Dimensions of Attitudes

Attitudes have various dimensions which are important for a teacher to understand when evaluating his students. Reemers (1954) provides a good discussion of these.

Favorableness

Most people are usually for or against an object or value. This is the part of attitudes that is usually measured. A person who talks about someone's attitude toward international events usually thinks of his favorableness toward the event.

Intensity

Whenever we study attitudes, we soon realize there is a difference in the strength of feeling people have toward a subject. A person who has experienced religious prejudice will have much stronger feelings as a result of intoleration than a friend who has never been persecuted.

Salience

When an attitude is easily aroused, it is near the surface

of the mind. If a person is highly salient about his friend's occupation, this will be his first inquiry upon meeting him.

Public versus private attitudes

There are some attitudes that we are willing to share with others, but the attitudes frowned upon by society are kept to ourselves. Our attitudes toward a major political candidate or a new model automobile may be classified as public. Kinsey, however, had to develop a very confidential or anonymous system of ascertaining private attitudes about sex. If an individual feels that society does not accept his attitudes, he is usually unwilling to reveal them.

Common versus individual attitudes

If a person has an attitude toward an object of common interest to many people, he has a common attitude. He may, however, have an attitude toward a pet, a teacher, or a necktie which would constitute an individual attitude.

Evaluation of Attitudes

According to Remmers, Gage, and Rummel (1960) there are three important reasons for studying and evaluating attitudes.

The pupil's fitness for various curricula

A teacher's desire is to acquaint the student with art, music, literature, other races and religions. If a student does not acquire a good attitude toward the learning process,

the objectives of a class cannot be reached. Hence, good attitudes are among the most important assets that a student carries to class.

The pupil's fitness for various occupational goals

If a person is to be successful in an occupation, he must possess a good attitude toward it. He must like his work and his associates. The teacher possesses attitudes that are different from the farmer. An individual working as a doctor must possess attitudes that differ from a policeman. It is, therefore, important to consider attitudes in addition to abilities and interests in setting up educational and vocational aims.

The pupil's fitness for participation in a democratic social order

A good citizen must have correct attitudes toward social groups, social problems, institutions, and society. He must respect the right of every individual and work for social progress.

Types of Scales

One of the first methods used for evaluating attitudes was Thurstone's attitude scaling technique (Thurstone and Chave, 1929). For the purpose of measuring attitudes this method was first used by Chave in 1928 (Chave, 1928) and Croba in 1930 and 1931. Chave applied it to the measurement of attitude toward the church and published his scale in

collaboration with Thurstone in 1929. Dorba used the method for measuring attitudes toward war. Following these studies, the use of this technique spread rapidly.

The scheme used for constructing this scale is one of arranging items on an 11-point scale according to the degree of favorableness or unfavorableness as determined by having a large number of judges sort quite a number of statements into 11 piles. At one end is the most favorable attitude, and at the other, the least favorable. The neutral position is at the center.

As an examinee takes the test, he marks the statements with which he agrees, and his score is the median of the scale values of the checked statements. The manual of each scale contains tables used for the interpretation of the various scores, ranging from strongly favorable to strongly antagonistic.

Other researchers in their reviews of the literature have expressed the opinion that although the Thurstone technique is very laborious and costly, it seems to be the best, the most refined method so far devised for the measurement of attitudes (Nelson, 1939).

A second type of scale to be discussed is called the Likert Scale (Gliford, 1954). Compared to the Thurstone-type scale, the Likert-type scales are fairly easy to construct. The statements in this scale again reflect favorable and unfavorable attitudes about an attitude object. Items or statements which call for checking one of five responses

(strongly approve, approve, undecided, disapprove, strongly disapprove) are prepared. A large number of persons take the test and then an item analysis is made. The final selection or elimination of items does not depend upon subjective judgment, as in the case of the Thurstone scale, but the items that correlate highest with the total score on the scale are selected for the final form. This is the method of internal consistency.

The scales are scored by assigning values of 5, 4, 3, 2, and 1 ranging from "strongly agree" to "strongly disagree" for the favorable items. For the unfavorable items the values go 1, 2, 3, 4, 5, from "strongly agree" to "strongly disagree." A person can obtain a high score by marking the favorable items "strongly agree" and the unfavorable ones "strongly disagree." A subject's score is the total of the value indicated.

The Likert-type scales can be constructed in very much less time than the Thurstone-type scales; they require no judges; and scoring is very easy. Studies (Likert, Roslow and Murphy, 1934) show that as far as reliability and validity are concerned, correlations between the results obtained by both types of scales measuring the same attitude, are high. Because of this fact, the Likert scales have, to a large extent, replaced those of the Thurstone type.

Another method of attitude measurement is called the error-choice technique. This scale is constructed in the form of an achievement test. A multiple-choice type question

with two responses is used (Hammond, 1948). Half of the questions are correct. The remaining items have no correct answers, and the individual reflects his bias when responding to them.

A study was designed by Kubany (1953) in which he demonstrated how this worked with medical students and social-work students as he measured their attitudes on national health insurance. A 50-item test on health, disease, and medical care was constructed. Twenty-two of the fifty questions in this inventory had no correct given answer. It was Kuber's idea that an individual's attitude could be determined by the direction of his choice. The test was administered to medical students in their third year in residence (chosen as the opposing end) and first or second year students in a graduate school of social work (chosen as the favorably disposed end). On the test, a high score reflected an attitude in favor of national health insurance and low one, an opposing attitude. A mean score of 14.6 was scored by the 42 social workers taking the test and the mean for 59 third-year medical students was 5.9. A test of the difference between the two means produced a t ratio of 20.9.

This technique seems to be a useful one and will probably see a lot more use in the future.

Another method used to appraise attitudes is the free-response technique summarized by Smith and Tyler (1942). A person is asked to reveal his attitudes indirectly. After a brief statement is given such as "Canning tomatoes—\$1.00

per hundred pounds," the individual is asked to list all his ideas about the above statement that might seem important.

Smith and Tyler summarize these ideas by listing them in three categories: (1) purely personal association (such as, "I don't like tomatoes"); (2) implications showing personal-social values (such as "If tomatoes are so cheap, we should eat more of them"); and (3) responses showing wider social implications (such as, "If tomatoes are so cheap, how can these growers live with such prices?"). We may use many different situations that will elicit different attitudinal responses when building items of this type.

A fifth technique used in assessing attitudes is that of paired comparisons. An examinee is given a list of pairs of practices, religions, nationalities, or whatever attitudinal object is being measured. Each religion is presented in comparison with every other religion. The examinee must mark the one he prefers in each pairing. Scores appear as a rank-order summary of his religious or practices preference. It is easily apparent that this method—the rater has to compare each possibility with every other possibility—is very time-consuming when there are many practices to be rated. Even though this method is not generally used, Cronbach (1949) feels that it merits a greater consideration as an appraiser of attitudes.

A finer method of attitude scale construction, and one that is frequently used by teachers, is described by Corey

(1943). First, the teacher asks each student to write down three or four statements that express various ideas about the attitude being appraised. If asked to give his attitude toward "Honesty on Examinations" the student might note the following:

Cheating is as bad as stealing.

If a test isn't fair, cheating is all right.

I won't copy, but I often let someone else look at my paper.

A little cheating on daily tests doesn't hurt.

Next, the teacher examines each item to eliminate duplicates and expressions of fact rather than opinion. Cory lists the following qualities that should be characteristic of the items which are selected to remain on the scale:

1. The statement must be debatable.

2. The statement should not be susceptible to more than one interpretation.

3. The statement should be short.

4. Technical terms should be avoided.

In the third step, the test is administered to a group of students. They are asked to put a plus sign in front of the ones they favor and a minus sign before the ones which they consider to be unfavorable. The statements that produce 80 percent agreement whether favorable or unfavorable are used to make the final form. Items below this value may be ambiguous and are, therefore, discarded. The items can

be responded to as was described above for the Likert-type scale—that is, on 5-point scale ranging from "strongly agree" to "strongly disagree." Quantitative scores can be obtained as on Likert-type scales.

Problems of Attitude Appraisal

The one major problem in determining attitudes is how to obtain valid responses. In a study conducted by Corey (1937), the correlation between responses on a paper- and pencil-questionnaire and observed behavior was very low. Corey administered a test to a group of educational psychology students near the end of the week. The class was also given an attitude scale on cheating. This was anonymous but was secretly coded so that the student completing it could be identified later. Copies were made of the students' papers over the week end. The students were then allowed to correct their own papers. The correlation between the attitudes expressed on this scale about cheating and actual cheating behavior was .02.

One study that is repeatedly quoted by social psychologists was conducted by La Piere (1934). During a trip around the United States with two well-dressed Chinese companions, 250 restaurants were visited. Only once were they refused service. Upon his return home, La Piere questioned by mail each of the eating establishments as to their policy on catering to persons of different ethnic origin, such as Chinese. Over 90 percent of the respondents categorically

stated that they would not serve Chinese. His conclusion was that a person's appearance had more to do with the issue at hand than did nationality.

Other investigators (Doob, 1947) have also concluded that there is not a direct and perfect correlation between verbal behavior and real behavior. According to McNemar (1946, p. 289-374) much of the fault lies in the superficiality or shallowness of most attitude measuring techniques. He maintains, however, that:

The statistical issues in attitude-opinion research are not different from those encountered in other social science. Inadequate analyses and statistical errors have been plentiful, but as more statistical sophistication is acquired, one can expect adequate statistical treatment with fewer errors.

He states that attitude scales can be constructed to attain satisfactory reliability and validity if more effort is expended than is usually the case.

Another final problem that is readily apparent is the change of attitude a person might have over a period of years. A person taking Thurstone's attitude scale on war in the 1920's would have a completely different attitude ten years later or following World War II. Before any scale is used it should be examined to see if it fits into today's world.

There is one final word that should be said in respect to these scales and techniques. Even though the correlation between scores on these scales and observed behavior is low, this reviewer feels that the scales are far from useless.

This belief has previously been substantiated by McNemar (1946). When a person states what is supposed to be his attitude, this in itself may be important. If his attitude is not of a private nature, it is probably accurate. Making responses anonymous can help make private attitudes close to the truth. It is important, however, that we know the author of an attitude, especially if we are attempting to provide assistance.

Arndt and Everett (1951, p. 252-256) provide a good summary as they stress the importance of attitude determination.

Attitudes, beliefs, and ways of behaving, like institutions, develop at the local level. They are the produce of local traditions, ways of meeting local problems, and face-to-face relationships. Teachers and citizens seeking to achieve a world society must give attention to unfavorable attitudes which inhibit the development of such a society and to those attitudes which are favorable to a free world.

Obviously the task of replacing fear and prejudice with reason and a larger social understanding is one which cannot be accomplished by the schools alone. It requires the close cooperation of school and community organizations. The school or school system which, alone, seeks to do the fundamental job of social education of children and youth that is required, without a comparable educational program in supporting communities, is bound to fail, for parents and citizens will not long tolerate a type of teaching which goes against their own beliefs.

Summary

The problem regarding attitude evaluation has been centered primarily in the area of scale construction and validation. Very little work has been completed in the

area of "classroom procedures" effect upon the attitudes of students. As a conclusion to this review, the following statements will serve to summarize the literature:

1. Attitudes are learned. They are an accumulation of a person's experiences over a long period of time. They move from a general view of things to very specific attitudes. Such attitudes toward school, books, teachers, and the learning situation in general are often a reflection of home and neighborhood. In the impressionable years of childhood one might say that attitudes are catching. Anderson and Brewer (1946) found that children placed in nursery school under a dominate teacher showed significantly more dominate and aggressive behavior in the classroom and on the playground than children who were placed under more democratic and permissive teachers. The following year, if the children were placed with a teacher with different characteristics, it was not long before the children's play took on these new attributes and attitudes.

2. Attitudes have various dimensions. People are generally for or against something. Attitudes can have great strength or they can be weak and void of feelings. Usually people are willing to share their attitudes with others, but some attitudes are not acceptable to the public and are, therefore, held in private.

3. Of the many methods used to evaluate attitudes, Thurstone's attitude scaling technique is considered to be the most laborious and costly. It requires a number of

judges who sort many statements into eleven piles. McNemar (1946, p. 289-374) gives his opinion on this technique as he compares it to the Likert scale:

The writer is inclined to believe that some combination of these two competing techniques for scale construction (Thurstone and Likert) would be better than either one alone. It would seem logical to expect that more reliable scales would result if the Likert method were modified to assure the selection of some items in the middle range of the favorable-unfavorable continuum, or if the equal appearing used for item selection and the median check scoring were dropped in favor of the simpler scoring technique of Likert.

4. The Likert Scale is fairly easy to construct. A final selection of items is determined by an item analysis. The scoring is very simple because of only five values being assigned to each question. Gliford (1954, p. 456-462) appears to favor the Likert approach because a summation score is required. He says that the

Thurstone method lacks good indices of validity of items. For this reason some investigators recommend that an item analysis of usual kinds be made of items. If one is going to use the Thurstone method of scale administration, neutral items would have to be retained in spite of their invalidity The responses (on the Likert scale) may be weighed not on a priori basis, but on the basis of item-analysis data.

5. Other methods of attitude measurement include the error-choice technique described by Kubany, the free-response technique summarized by Smith and Tyler, the paired comparisons method recommended by Cronbach, and the teacher scale

designed by Corey. While these techniques have not been used as extensively as the Thurstone and Likert scales, they do have value and will probably receive much more attention in the future.

6. The big problem in evaluating attitudes has been the low correlation between verbal and real behavior. It is understood that no one who is actually observing would maintain that the correlation is perfect. However, over a long period of observing and testing it seems quite possible that the opinion-action correlation could be high. It is often very valuable knowing what a person's attitude is even though the predictability of a particular action is low. To know the average attitudes of a group is also valuable in working with social, political, and economic problems.

Although the foregoing research did not all directly relate to this particular study, it should provide the reader with a guide through which he can intelligently look at the attitude evaluation problem. For the most part, attitude research has been concerned primarily with the construction and validation of attitude scales. Very little work has been done in area of mass attitude analysis, except for the opinion polls used to determine political and economic trends.

The conclusions from the literature in this field certainly seem to indicate that some additional work should be done in the area of attitude change brought about by the alteration of school curricula or procedure. This study

describes one attempt to provide information in this very important area.

METHODS AND MATERIALS

Subjects

For the sake of clarification and simplicity, the school districts in this study will be referred to as District A, which represents an ability-grouped district, and District R, which signifies a random-grouped district. Both districts have similar social and economic backgrounds since County School District A encircles City School District R.

In 1958, County School District A began a program of homogeneously grouping pupils. This presented an excellent opportunity to further the work of educational research in the area of ability grouping since the students in District R were heterogeneously grouped. Under the direction of Dr. Walter R. Borg, of the Utah State University, a research study was designed that would compare the problems involved in random- versus ability-grouped situations. Upon approval of the superintendents involved, a research grant was obtained that provided for a four year study of this important subject.

The schools that participated in the study were carefully chosen to insure that comparable information would be secured. Because of the similar backgrounds of the school districts, it was easy to find schools with similar living and teaching conditions. School District A became the

experimental group, and School District R was used as the control group.

The students used in this part of the study were in the sixth grade. They had been grouped into the following groups according to their scores on the California Achievement Test, Form WXYZ, in addition to teacher judgment:

<u>District A</u>		<u>District R</u>	
Sup. Boys	Sup. Girls	Sup. Boys	Sup. Girls
Ave. Boys	Ave. Girls	Ave. Boys	Ave. Girls
Slow Boys	Slow Girls	Slow Boys	Slow Girls

The number of students in each group is as follows:

<u>District A</u>		<u>District R</u>	
Superior Boys	48	Superior Boys	138
Average Boys	83	Average Boys	98
Slow Boys	31	Slow Boys	88
Superior Girls	47	Superior Girls	143
Average Girls	88	Average Girls	108
Slow Girls	14	Slow Girls	42
Total	351	Total	617

To establish the ability level of District R pupils, the mean scores of the three designated District A groups were found. The District R students with scores above the halfway point between the means of the superior and average scores were placed in the District R superior group. The District R students in the medium group were designated as

those whose scores fell halfway between the means of the District A superior pupils and average pupils to a point halfway between the means of the average and slow students. The remainder of the students were placed in a slow group.

The Attitude Scale

The first step in developing the study was to find an adequate attitude scale that would test the students' opinion of three areas: attitude toward the school situation, attitude toward peers, and attitude toward the teacher. Our review of the standardized scales in the field of attitude evaluation did not provide us with a satisfactory test. Thus, when this study was undertaken there arose the need for preparing some instrument for evaluating the attitudes of students in the areas mentioned above. It is, therefore, deemed wise to include a brief explanation as to the formulation of the attitude scale.

First, a number of statements expressing various ideas about an attitude were collected. All of these statements expressed an attitude for or against the single object which was to be measured. The rules outlined by Wang (1932) were kept in mind during the preparation of the statements. The statements were written in question form and could be answered Yes, No, or ?. Of the many statements collected, 109 were finally selected to be included in the pretest.

Validity

The U. S. U. School Inventory (Appendix C) was developed in the following way: First, the original list of 109 items was given to 130 sixth grade students in four Logan City Schools. (These students were comparable in social and economic background to the students in the study). After the tests had been scored, an item analysis was made (see Tables 1, 2, and 3, Appendix A) to determine the difficulty of the item (the percentage of the examinees who marked the item correctly), and the measure of discrimination between the two groups (the two groups are the students with good attitudes as compared to the students with poor ones). The index of discrimination used was a correlation coefficient that showed the relationship between total score on the test and the response to every single item. Flanagan's (1939) short labor-saving chart provided these correlation coefficients directly from the chart by entering them with our percentages correct in the upper and lower groups.

The item analysis was based upon the highest 27 percent of the papers and lowest 27 percent as recommended by Kelly (1939), who showed that maximum discrimination indices were obtained when these percentages were used. After the papers were selected, an item count was made to find out exactly how many individuals in the upper group responded in a given direction to each item; the same was done for the lower group. Only those items that clearly differentiated between these two extreme groups were included in the final form of

the Inventory.

Reliability

The coefficient of reliability for the pretest was determined by correlating the odd-even items and applying the Spearman-Brown formula (Garrett, 1958). This procedure (Split-Half Method) consisted of administering the test, then dividing the test into two presumably equivalent parts (all odd-numbered items in one part and all even-numbered items in the other). The parts were scored separately, and a coefficient of correlation between the part scores was determined. Since reliability is generally a function of the length of the complete test, the reliability coefficient obtained by this method was corrected so as to be comparable to the coefficient that might have been obtained from correlating the two parts had they each been the length of the complete test. This correction was made by using the Spearman-Brown Prophecy Formula. The reliability coefficient for the Inventory is .94.

It should be noted again that the Inventory (Appendix C) was made up of three subtests (attitudes toward teacher, school, and peers). This same procedure (Split-Half Method) was used to determine the coefficient of reliability for each of the subtests. After applying the Spearman-Brown Prophecy Formula, the reliability coefficient for the attitude toward teacher subtest was .95. The coefficients of reliability for the school and peer subtests were .91 and .82, respectively.

A Pearson Product-Moment Coefficient of Correlation was run between each of the subtests to determine if each was moderately independent. The correlation coefficient for school attitudes versus the friends is .54. A correlation of the teacher and friend attitudes indicated a coefficient of .46, while the correlation coefficient for the teacher-school attitudes is .57.

STATISTICAL ANALYSIS

The results of the study are presented in their relationship to the following three areas:

1. A comparison of the district, ability level, and sex differences of Experimental District A and Control District R in relation to the students' attitudes toward their peers.

2. A comparison of the district, ability level, and sex differences of Experimental District A and Control District R in relation to the students' attitudes toward their teachers.

3. A comparison of the district, ability level, and sex differences of Experimental District A and Control District R in relation to the students' attitudes toward the school.

When consideration has been given to the comparability of the control and experimental groups by means of an analysis of variance, the separate district, ability level, and sex differences in the two districts are discussed by presenting the results of the t tests.

Comparison of Attitude Toward Peers

A single classification analysis of variance (Garrett, 1958) was employed to determine whether there was any significant differences among the attitudes of District A and District R students toward their peers. The F ratio

for the test means was 3.28, which was significant at the .01 level of probability (see Table 4, Appendix B). Because the F ratio is larger than required for the .01 level, it would occur by chance in less than once in 100 trials.

The F ratio provides an over-all test of the significance of the differences among means, but it does not indicate which means differ significantly, only that at least one of them is reliably different from some others. The mean difference could exist in one of three areas: district, ability level, or sex. For example, we could surmise that the mean difference lies at the ability levels. That is, the developmental students in District A have less favorable attitudes toward their peers than do the superior students in District A. This can only be an assumption, however, until a t test is employed to test the separate differences. The results of the t tests, as an analysis of the first three hypotheses, are discussed in the following hypotheses section.

Hypotheses

For each of the following analyses, using 916 degrees of freedom, the t requirements for significance at the .05 and .01 levels are 1.96 and 2.59, respectively.

These were the first three hypotheses:

1. There are no significant district differences in attitudes toward peers between ability-grouped versus random-grouped students.

2. There are no significant differences in attitudes toward peers at different ability levels (superior, average, slow) within each district.

3. There are no significant sex differences in attitudes toward peers within each district—boys versus girls.

These hypotheses are discussed to show the separate differences among certain means in a comparison of the district, ability level, and sex differences in attitudes of students toward peers in the ability-grouped and random-grouped systems. Tables 7, 8, and 9 summarize data involved.

First hypothesis, Table 7. A t test was employed (Garrett, 1958) to determine the significance of the difference between means in the attitudes of the students toward their peers in School District A versus School District R. Of the six comparisons in this group, none showed a significant difference (Table 7). The average boys in District R showed a slightly better attitude than the same group in District A. The t value, however, was only 1.55 and fell below being significant at the .05 level. Therefore, the null hypothesis is accepted, and it can be concluded that homogeneous grouping neither increased nor decreased a negative attitude toward friends.

Second hypothesis, Table 8. A t test was used to determine if there was a significant ability level difference in attitude toward peers. Of the twelve comparisons in this group, five were significant (Table 8). The superior boys in District R showed significantly better attitudes over

Table 7. Are there significant district differences in attitudes toward peers between ability-grouped versus random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	16.61			
A	Sup Boys	16.13	.58	.90	.64
R	Sup Girls	16.94			
A	Sup Girls	16.79	.15	.99	.16
R	Ave Boys	15.90			
A	Ave Boys	14.66	1.24	.80	1.55
R	Ave Girls	14.61			
A	Ave Girls	15.32	.71	.77	.92
R	Slow Boys	13.98			
A	Slow Boys	15.10	1.12	1.12	1.00
R	Slow Girls	14.36			
A	Slow Girls	13.36	1.00	1.66	.60

Table 8. Are there significant ability level differences in attitudes toward peers between ability-grouped and random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	16.61			
R	Ave Boys	15.90	.71	.70	1.01
R	Sup Boys	16.61			
R	Slow Boys	13.98	2.63	.73	3.60*
R	Ave Boys	15.90			
R	Slow Boys	13.98	1.92	.78	2.43**
R	Sup Girls	16.94			
R	Ave Girls	14.61	2.33	.68	3.42*
R	Sup Girls	16.94			
R	Slow Girls	14.36	2.58	.94	2.74*
R	Ave Girls	14.61			
R	Slow Girls	14.36	.25	.98	.26
A	Sup Boys	16.13			
A	Ave Boys	14.66	1.47	.92	1.52
A	Sup Boys	16.13			
A	Slow Boys	15.10	1.03	1.24	.83
A	Ave Boys	14.66			
A	Slow Boys	15.10	.44	1.13	.39
A	Sup Girls	16.79			
A	Ave Girls	15.32	1.47	.96	1.53
A	Sup Girls	16.79			
A	Slow Girls	13.36	3.43	1.64	2.09**
A	Ave Girls	15.32			
A	Slow Girls	13.36	1.96	1.55	1.26

* Significant at the .01 level of probability

** Significant at the .05 level of probability

the slow boys beyond the .01 level. There was also a positive attitude toward peers of the superior girls in District R over the average and slow girls at the .01 level. A comparison involving District R average boys and District R slow boys showed a t value of 2.43, which was significant at the .05 level. These trends seem consistent with the thought that better students usually foster better attitudes in the school situation. In each case the students of higher ability represented better attitudes toward their peers.

Of the five groups in this comparison that were significantly different, four of them fell in District R. There was one comparison in District A that showed significance: the superior girls indicated better attitudes than the slow girls beyond the .05 level. It is of value to note that most of the significant differences are found in the random-grouped district. The students who are grouped with peers of their own ability seem to develop more closely aligned friendships. This seems consistent with the idea that students who are grouped, according to their ability, may represent better attitudes toward each other, especially at the lower levels, because their interests and objectives may be similar. It could also be noted that students who are grouped at the superior mental level would show better attitudes toward each other because their goals and interests may be in the same direction, causing a closer relationship to develop.

The null hypothesis is rejected, and we conclude that significant ability level differences do exist. We can also

conclude that a trend shows a greater number of differences in attitudes among the two lower ability levels of the random-grouped students.

Third hypothesis, Table 9. A t test was employed to determine whether there existed a significant sex difference in attitude scores toward peers. The six groups compared showed no significant difference (see Table 9). The District R average boys showed a more favorable attitude than did the District R average girls. The t value of 1.72 however, was not significant at the 5 per cent level. These results indicate no tendency for boys and girls in the three ability levels to differ in attitudes toward their friends.

Comparison of Attitude Toward Teacher

An analysis of variance (Garrett, 1958) was used to determine whether significant differences existed among the attitudes of District A and District R students toward their teacher. The F ratio for the test means was 5.50, which was significant well beyond the .01 level of probability (see Table 5, Appendix B). It is again noted that this F ratio would occur by chance in less than once in 100 trials. It can thus be concluded that certain means do in fact differ.

This finding is valuable, because it indicates the need for further analysis. The t test if, therefore, employed to test the separate differences. The results of the t tests, as a further analysis of the fourth, fifth, and sixth hypotheses, are discussed in the following hypotheses section.

Table 9. Are there significant sex differences in attitudes toward peers between ability-grouped and random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	16.61			
R	Sup Girls	16.94	.33	.64	.52
R	Ave Boys	15.90			
R	Ave Girls	14.61	1.29	.75	1.72
R	Slow Boys	13.98			
R	Slow Girls	14.36	.38	1.02	.37
A	Sup Boys	16.13			
A	Sup Girls	16.79	.66	1.10	.57
A	Ave Boys	14.66			
A	Ave Girls	15.32	.66	.82	.80
A	Slow Boys	15.10			
A	Slow Girls	13.36	1.74	1.69	1.03

Hypotheses

The next three hypotheses are listed as follows:

4. There are no significant district differences in attitudes toward teachers between ability-grouped versus random-grouped students.

5. There are no significant differences in attitudes toward teachers at different ability levels (superior, average, slow within each district.

6. There are no significant sex differences in attitude toward teachers within each district.

These hypotheses are presented to show the separate differences among certain means in a comparison of the district, ability level, and sex differences in attitudes of students toward the teacher in the ability-grouped and random-grouped systems. Tables 10, 11, and 12 have been prepared to aid the reader in more readily understanding the differences. For each of the following analyses, using 916 degrees of freedom the t requirements for significance at the .05 and .01 levels are 1.96 and 2.59, respectively.

Fourth hypothesis, Table 10. The t test used to determine if there existed a significant district difference in student attitudes toward the teacher. The six comparisons in this group indicated three significant differences (see Table 10): the District A superior boys had a more favorable attitude than did the District R superior boys resulting in a t score of 2.04, which was significant beyond the .05 level of probability; the District A superior girls showed an

Table 10. Are there significant district differences in attitudes toward the teacher between ability-grouped versus random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	40.06			
A	Sup Boys	43.14	3.08	1.51	2.04**
R	Sup Girls	40.82			
A	Sup Girls	45.74	4.92	1.51	3.26*
R	Ave Boys	37.46			
A	Ave Boys	37.39	.07	1.35	.05
R	Ave Girls	38.30			
A	Ave Girls	37.87	.43	1.30	.33
R	Slow Boys	36.63			
A	Slow Boys	41.64	5.01	1.88	2.66**
R	Slow Girls	38.83			
A	Slow Girls	39.21	.38	2.79	.14

* Significant at the .01 level of probability

** Significant at the .05 level of probability

improved attitude over the District R superior girls beyond the .01 level of probability; among slow boys, District A showed better attitudes toward the teacher than did District R with a t score of 2.66, which was significant at the 1 per cent level of probability.

This comparison showed very little difference among the average students in the two districts. There are very definite trends, however, among the superior and slow students, with the better attitudes centering themselves with the homogeneous grouped students. This indicates a better teacher-student relationship in School District A. The teacher may be able to meet the needs and problems of an ability grouped class with more efficiency, thus gaining the attention and respect of the students to a greater degree. It may be that in a heterogeneous situation the superior student feels some resentment toward the teacher for being held to an average class load; he may feel a lack of challenge. Slow students under the same system may feel the pressure of preparation placed on them by the teacher. This pressure is often beyond their capability, which would account for their negative attitude toward the teacher. Most teaching in a heterogeneous class is geared to the average teacher. This fact may account for there being no significant difference among these groups of students. It can be concluded, therefore, that significant differences do exist between the two districts. Thus, the null hypothesis is rejected.

Fifth hypothesis, Table 11. The comparison involving ability level differences in attitudes toward the teacher showed significant difference between seven of the twelve groups considered (see Table 11). A t test was used to determine that the District R superior boys had more favorable attitudes toward the teacher, beyond the .05 level, than did the District R average boys. There was also a significant difference at the .01 per cent level between the District R superior and slow boys, with the former showing the better attitude. A comparison of the District R girls indicated a more favorable attitude among the superior girls when compared with the average ones. This difference was significant at the 5 per cent level.

The homogeneous grouped superior boys also showed a better attitude toward the teacher than did the average boys, a difference that was significant at the .01 level. In another comparison of boys in District A, the slow group indicated better attitudes beyond the 5 per cent level than did the average boys. The superior girls in the homogeneous group were more favorable toward the teacher than were the average ones. This difference was significant at the 1 per cent level. The superior girls were also more inclined toward the teacher than slow girls—a difference that went beyond the .05 level of probability.

Some interesting relationships between the random- and ability-grouped boys might be noted. The superior boys in both groups showed more favorable attitudes than were

Table 11. Are there significant ability level differences in attitudes toward the teacher between ability-grouped and random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	40.06			
R	Ave Boys	37.46	2.60	1.19	2.18**
R	Sup Boys	40.06			
R	Slow Boys	36.63	3.43	1.23	2.79*
R	Ave Boys	37.46			
R	Slow Boys	36.63	.83	1.32	.63
R	Sup Girls	40.82			
R	Ave Girls	38.30	2.52	1.15	2.19**
R	Sup Girls	40.82			
R	Slow Girls	38.83	1.99	1.59	1.25
R	Ave Girls	38.30			
R	Slow Girls	38.83	.53	1.59	.33
A	Sup Boys	43.14			
A	Ave Boys	37.39	5.75	1.64	3.51*
A	Sup Boys	43.14			
A	Slow Boys	41.64	1.50	2.08	.72
A	Ave Boys	37.39			
A	Slow Boys	41.64	4.25	1.90	2.24**
A	Sup Girls	45.74			
A	Ave Girls	37.87	7.87	1.63	4.83*
A	Sup Girls	45.74			
A	Slow Girls	39.21	6.53	2.75	2.37**
A	Ave Girls	37.87			
A	Slow Girls	39.21	1.34	2.61	.51

* Significant at the .01 level of probability

** Significant at the .05 level of probability

expressed by the average boys; but in a comparison of these superior groups with the slow boys, the District R superior boys showed a significant difference that was lacking among the ability-grouped boys. This divergence may have been due, in part, to the fact that ability-grouped boys are competing with students at their same level, and are, therefore, less inclined to look unfavorably upon a teacher. That is, the teacher of a slow class of boys will cause them to work within the ability of the class and will not be pressuring them to achieve at a superior boy's level. This lack of pressure and the added attention that might come with it may cause a slow boy to like his teacher better.

An interesting fact concerning these comparisons is that the better students in each case indicated a more favorable attitude. This trend seems to be in line with the thought that more capable students will develop better attitudes toward the teacher. One exception to this trend, however, is a comparison of the District A slow and average boys. Here the slow boys showed the more favorable attitude. It may be pointed out again that in the ability-grouped system, the slow boys may receive enough additional guidance and attention that their attitudes toward the teacher might improve considerably.

The differences between the random- and ability-grouped girls are very slight. In both cases the superior girls have better attitudes than the average ones. There is one important difference: The District A superior girls indicate

better attitudes toward the teacher than do the slow girls. This difference did not exist among the boys in this same comparison. It may be that slow girls feel more keenly their lack of ability, which might reflect a less favorable attitude toward the teacher.

The null hypothesis can be rejected, and it can be concluded that significant differences do exist among ability levels as reported in their attitudes toward the teacher.

Sixth hypothesis, Table 12. The t test was used to find if a significant sex difference existed in attitudes toward the teacher. The six boy-girl groups compared showed no significant difference (see Table 12). There appears to be no tendency for boys and girls at the three ability levels to differ in attitudes toward the teacher. The null hypothesis is, therefore, accepted, and it can be concluded the homogeneous grouping neither improves or hampers unfavorable attitudes toward the teacher when boys are compared with girls.

Comparison of Attitude Toward School

An analysis of variance was used to determine whether a significant difference existed among the attitudes toward school of the students in District A and District R. The F ratio for the test means was 7.47, which was significant well beyond the .01 level of probability (see Table 6, Appendix B). Because this F ratio would occur by chance in less than once in 100 trials, it can be concluded that certain means

Table 12. Are there significant sex differences in attitudes toward the teacher between ability-grouped and random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	40.06			
R	Sup Girls	40.82	.76	1.08	.70
R	Ave Boys	37.46			
R	Ave Girls	38.30	1.16	1.26	.92
R	Slow Boys	36.63			
R	Slow Girls	38.83	2.20	1.71	1.29
A	Sup Boys	43.14			
A	Sup Girls	45.74	2.60	1.86	1.40
A	Ave Boys	37.39			
A	Ave Girls	37.87	.48	1.38	.35
A	Slow Boys	41.64			
A	Slow Girls	39.21	2.43	2.84	.86

in District A and District R do differ significantly. The t test is, therefore, employed to test the separate differences. The results of the t tests, as a further analysis of the seventh, eighth, and ninth hypotheses, are discussed in the following hypotheses section.

It is of value to note that the F ratio for the test means of the students' attitudes toward their school (7.47) and their teacher (5.50) are well beyond that of the peers (3.28). There are obviously more distinct differences between the homogeneous- and random-grouped students as they express their attitudes toward school than in the other two areas. This trend seems consistent with the thought that a peer adjustment may be much easier to foster than are the school and teacher adjustments.

Hypotheses

The final three hypotheses follow:

7. There are no significant district differences in attitudes toward school between ability-grouped versus random-grouped students.

8. There are no significant differences in attitudes toward school at different ability levels (superior, average, slow) within each district.

9. There are no significant sex differences in attitudes toward school within each district—boys versus girls.

These three hypotheses were tested to determine if there existed district, ability level, and sex differences in

attitudes of students toward the school. To aid the reader in more readily understanding the differences, Tables 13, 14, and 15 have been prepared. As in the case of the previously tested hypotheses, the t requirements for significance, using 916 degrees of freedom, are 1.96 and 2.59 at the 5 per cent and 1 per cent levels, respectively.

Seventh hypothesis, Table 13. Of the six groups compared, using the t test, only one had a significant difference in attitudes toward school (see Table 13). The District A slow boys showed a more favorable attitude toward the school than did the District R slow boys. This significance was beyond the .01 level of probability. The other five groups indicated no definite trend.

It is of interest to note that this same difference was indicated among the same slow boys in their attitude toward the teacher (see Table 10). Apparently the teacher of homogeneous grouped slow boys is able to gain their confidence to a greater degree. We may attribute this trend to the idea that the teacher challenges these students at their own level without the requirement of working at the level of the average or superior student, which is often the case in the heterogeneous class. The homogeneous-grouped slow boy competes with students within his own ability level. It may be possible in the heterogeneous class. These factors may be the reasons for his improved attitude toward school.

Interestingly enough this difference that exists among the boys does not appear in a comparison of the slow girls.

Table 13. Are there significant district differences in attitudes toward school between ability-grouped versus random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	12.32			
A	Sup Boys	12.38	.06	.65	.092
R	Sup Girls	13.74			
A	Sup Girls	14.38	.64	.65	.99
R	Ave Boys	11.60			
A	Ave Boys	10.80	.80	.57	1.40
R	Ave Girls	11.56			
A	Ave Girls	11.37	.19	.55	.35
R	Slow Boys	10.09			
A	Slow Boys	12.23	2.14	.80	2.68*
R	Slow Girls	12.19			
A	Slow Girls	11.78	.41	1.19	.34

* Significant at the .01 level of probability

The attitudes of the two districts are very similar, with the District R girls indicating a slightly better attitude. The slow girl may feel her lack of ability to a greater degree. The boy might be able to gain recognition in other areas of the school program, but the slow girl may not have this same opportunity. Therefore, this could cause her attitude toward the school to be less favorable.

There are significant differences between the two districts in students attitudes toward the school. The null hypothesis is thus rejected.

Eighth hypothesis, Table 14. The t test was employed to determine if any significant differences of attitudes toward the school existed between ability levels. This comparison showed a significant difference between seven of the twelve groups (see Table 14). The superior boys in District R showed a significantly better attitude over that of the developmental boys at the .01 level. A comparison of the girls in District R showed the superior girls with more favorable attitudes than the average and slow girls—the significant differences were at the .01 and .05 levels, respectively.

The homogeneous grouped students showed a difference between the superior and average boys at the .05 level—the superior boys showing the better attitude. A comparison of the girls indicated differences between the superior and average ones, with the superior girls showing the better attitude at the .01 level of probability. A comparison of

Table 14. Are there significant differences in attitudes toward school at different ability levels between ability-grouped and random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	12.32			
R	Ave Boys	11.60	.72	.51	1.41
R	Sup Boys	12.32			
R	Slow Boys	10.09	2.23	.53	4.21*
R	Ave Boys	11.60			
R	Slow Boys	10.09	1.51	.57	2.65*
R	Sup Girls	13.74			
R	Ave Girls	11.56	2.18	.49	4.45*
R	Sup Girls	13.74			
R	Slow Girls	12.10	1.56	.68	2.99**
R	Ave Girls	11.56			
R	Slow Girls	12.19	.63	.71	.89
A	Sup Boys	12.38			
A	Ave Boys	10.80	1.58	.70	2.26**
A	Sup Boys	12.38			
A	Slow Boys	12.23	.15	.89	.17
A	Ave Boys	10.80			
A	Slow Boys	12.23	1.43	.81	1.77
A	Sup Girls	14.38			
A	Ave Girls	11.37	3.01	.70	4.30*
A	Sup Girls	14.38			
A	Slow Girls	11.78	2.60	1.16	2.20**
A	Ave Girls	11.37			
A	Slow Girls	11.78	.41	1.11	.37

* Significant at the .01 level of probability

** Significant at the .05 level of probability

the superior and slow girls indicated a better attitude among the superior group at the .05 level.

The foregoing results indicate that the better students have developed more favorable attitudes toward school. This trend is consistent with the thought that the more capable a student is, the better his attitude will be and provides some evidence of concurrent validity for this scale. An interesting feature of these comparison is that the superior and average boys in District R show very favorable attitudes over the slow boys, while the same comparison in District A shows no significant differences. As in the case of the two previous level comparisons (Table 8 and 11), the slow boys in District A show very favorable attitudes toward the school situation. These attitudes are more favorable than the attitudes of the District R slow boys. It should be pointed out again that the homogeneous grouped slow boys appear to benefit a great deal from this circumstance, as far as attitude development is concerned.

The developmental girls in both districts show less favorable attitudes toward the school than the superior ones. A slight difference exists here in that the difference in District R is at the .01 per cent level, while the District A girls are more closely aligned at the .05 level. There is also a difference between the District R superior and average girls, while the same groups in District A indicate similar attitudes. It is again apparent that homogeneous grouping tends to improve attitudes toward school, in an over-all

comparison. It can be concluded that significant level differences do exist as we compare attitudes toward the school. The null hypothesis can be rejected.

Ninth hypothesis, Table 15. In previous boy-girl comparisons (Tables 9 and 12), no significant differences were found in attitudes toward peers and teachers. However, as we compared the students' attitudes toward the school, by use of the t test, three of the six groups showed significant differences (see Table 15). The District R superior boys showed less favorable attitude toward the school than did the superior girls—a difference beyond the .01 level of probability. This same comparison between the District A superior students indicated the girls with better attitudes at the .05 level of probability. In District R, the slow girls showed a significantly better attitude over the slow boys, beyond the 1 per cent level.

It should be noted that a significant difference in attitudes toward the school lies with the superior students. It may be that superior boys are more inclined toward activities, other than academic, which would cause them to reflect an attitude different from the girls. At this age school may be less important to the boys. The girls, however, may find it very challenging and rewarding.

A good comparison between the District R slow boys and girls notes that the girls have more favorable attitudes. This is in contrast with the District A slow students, who are very similar in this area. This difference in attitude

Table 15. Are there significant sex differences in attitudes toward school between ability-grouped and random-grouped students?

District	Sample	Mean	Mean difference	SE _D	<u>t</u> value
R	Sup Boys	12.32	1.42	.46	3.09*
R	Sup Girls	13.74			
R	Ave Boys	11.60	.04	.53	.08
R	Ave Girls	11.56			
R	Slow Boys	10.09	2.10	.72	2.92*
A	Slow Girls	12.19			
A	Sup Boys	12.38	2.00	.79	2.53*
A	Sup Girls	14.38			
A	Ave Boys	10.80	.57	.59	.97
A	Ave Girls	11.37			
A	Slow Boys	12.23	.45	1.22	.37
A	Slow Girls	11.78			

* Significant at the .01 level of probability

** Significant at the .05 level of probability

indicates that in a homogeneous situation the school environment may be a factor in aligning the attitudes of slow boys and girls. It is again pointed out that the trend throughout this study has been an improved attitude among the slow boys in District A, when compared with other boys and girls at the same ability level.

There are significant boy-girl differences in attitudes toward school. The null hypothesis is thus rejected.

SUMMARY, FINDINGS, AND CONCLUSIONS

Summary

The objectives of this study were to determine if there were any district, ability level, or sex differences in attitudes toward peers, teachers, and school in an ability-grouped versus random-grouped situation. The following hypotheses were used to evaluate these differences:

Comparison of attitude toward peers

1. There are no significant district differences in attitudes toward peers between ability-grouped versus random-grouped students.
2. There are no significant differences in attitudes toward peers at different ability levels (superior, average, slow) within each district.
3. There are no significant sex differences in attitudes toward peers within each district—boys versus girls.

Comparison of attitude toward teacher

4. There are no significant district differences in attitudes toward teachers between ability-grouped versus random-grouped students.
5. There are no significant differences in attitudes toward teachers at different ability levels (superior, average, slow) within each district.

6. There are no significant sex differences in attitudes toward teachers within each district—boys versus girls.

Comparison of attitude toward school

7. There are no significant district differences in attitudes toward school between ability-grouped versus random-grouped students.

8. There are no significant differences in attitudes toward school at different ability levels (superior, average, slow) within each district.

9. There are no significant sex differences in attitudes toward school within each district—boys versus girls.

The students used in this study came from school districts that were very similar in social and economic background. Sixth grade students were used: 311 from experimental District A; and 697 from control District R. The District A students were grouped into superior, average, and developmental classes, by the district according to their scores on the California Achievement Test, Form WXYZ. The District R students were classified by the investigator in a similar manner to provide a basis for comparisons.

The procedure of this study was to develop and validate an attitude scale. The pretest was given to 130 students of similar living conditions to those in the study. Each attitude response was analyzed, and only those responses with high correlations were used. The scale was then

administered to students in experimental District A and control District R to determine their attitudes toward peers, teachers, and school.

An analysis of variance was employed as a test of significance of the differences between means. This comparison between the district indicated very definite differences. The t test was then used to determine the separate differences between means.

Findings

1. There are no significant boy-girl differences between District A and District R in the student attitudes toward peers.

2. There are no significant district differences in District A versus District R in the students' attitudes toward peers.

3. There are significant ability level differences in student attitudes toward peers in an ability-grouped versus random-grouped school district. That is, significant differences existed between four of six comparisons in District R, while District A had one significant difference in six.

There are no significant boy-girl differences in student attitudes toward teachers in an ability-grouped school district versus a random-grouped district.

5. There are significant district differences in student attitudes toward the teacher. The District A

superior boys, girls, and slow boys had significantly better attitudes over the same students in District R. There was a definite trend for District A students to have better or very similar attitudes toward the teacher in comparison to the students in District R.

6. There are significant ability level differences in student attitudes toward the teacher. It was found that three of the six compared groups in District R showed significant differences. Of the six groups compared in District A, four indicated significant differences. One trend that was apparent in both District A and District R was that between the average and slow girls no significant difference was found.

7. There were three out of six significant boy-girl differences in attitudes toward school. The District R and District A superior boys versus girls indicated significantly better attitudes among the girls. The slow boys and girls in District R also showed significant differences. The average students in these comparisons showed very little difference in addition to the District A slow boys and girls who indicated similar attitudes.

8. There was a significant district difference in attitude toward the school between the District R and District A slow boys, with the slow District A boys showing the better attitude. However, this was the only significant factor in the district comparisons.

9. There were seven significant level differences in attitude toward the school among a comparison of twelve groups. Four of these differences appeared in District R, three in District A. There seemed to be very little difference in attitudes as the average and slow students were compared. An exception to this fact was the District R slow and average boys who showed significant differences. There was a definite trend for the attitudes of the boys and girls in District A to be more closely aligned. The one exception to the trend was the difference between the superior and slow girls.

10. In an overall comparison it was found that very few boy-girl differences existed in attitudes toward peers, teachers, and school. The only major areas of significant difference were between District R superior boys versus girls and District R slow boys versus girls. These two groups showed differences in their attitudes toward the teacher.

11. In an overall comparison of the district attitude differences toward peers, teachers, and school, the trend indicated more favorable attitudes among the District A students. Especially was this true in a comparison of the two district's slow boys.

12. An overall comparison of the ability level differences toward peers, teachers, and school found more favorable attitudes among the superior students than among the average or slow groups. It was also found that few differences exist

between the average and developmental students. The one exception to this fact showed a significant difference between the District R average and developmental boys in their attitudes toward peers and school.

Conclusions

On the basis of the findings of this study, the following conclusions are drawn from a comparison of the ability-versus random-grouped districts:

1. Similar attitudes toward peers appear to develop in ability- or random-grouped situations.

2. Ability grouping appears to bring about better attitudes toward the teacher among both superior and slow students.

3. Ability grouping appears to develop better attitudes toward the school among slow boys.

In an ability level comparison within ability- and random-grouped districts, it is concluded that:

1. Ability grouping appears to closely align superior and slow boys, and average and slow girls in their attitudes toward the teachers.

2. Ability grouping appears to closely align the superior and average boys, average and slow boys, and average and slow girls in their attitudes toward school.

3. Ability grouping appears to more closely align student attitudes toward their peers at the different ability levels than does random-grouping.

A boy-girl comparison within ability- and random-grouped districts indicated the following conclusions:

1. No significant differences exist between boys and girls in their attitudes toward their teachers and peers.

2. Ability- or random-grouping appears to bring about better attitudes toward school among superior girls than among superior boys.

3. Ability grouping closely aligns the attitudes toward school of slow boys and girls, while this same comparison in the random-grouped system indicated a significant difference.

4. In ability and random-grouped systems, superior students appear to have more favorable attitudes toward peers, teachers, and school than do the average and slow students.

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APPENDIXES

Appendix A

In column (1) we have recorded the number in the highest group who answered the item incorrectly. In column (2) we have the number in the lowest group who responded incorrectly. Column (3) contains the difficulty of the item, which is the per cent of examinees who answered an item correctly. Column (4) gives an indication of how well an item separates the good students from the poor students. In this analysis, an item will be assumed to be discriminating if there is a difference of at least 8 between the upper and lower groups. Of the 109 items analyzed, ninety-five proved satisfactory for the final form. These ninety-five items are analyzed on the following pages. The items analyzed in this Appendix appear in the U. S. U. School Inventory, Appendix C.

Table 1. Summary of the item analysis of twenty-five items chosen to test a student's attitude toward his friends

Item #	% right in the top 27%	% right in the bottom 27%	Difficulty Index	Validity Index
8	1.00	.65	12	.58
9	1.00	.74	9	.51
13	.97	.60	13	.61
16	1.00	.22	27	.80
17	1.00	.48	18	.68
22	.94	.37	20	.64
29	.83	.57	9	.28
37	1.00	.49	18	.68
39	1.00	.74	9	.51
43	1.00	.71	10	.55
51	1.00	.63	13	.61
56	1.00	.77	8	.48
58	1.00	.65	12	.58
61	.97	.48	17	.68
62	1.00	.83	6	.43
64	.94	.31	22	.68
68	.97	.37	21	.73
71	.97	.57	16	.63
75	.97	.37	21	.73
78	.91	.40	18	.54
82	1.00	.74	9	.51
86	.97	.54	51	.66
92	.97	.40	20	.73
94	.91	.34	20	.60
95	1.00	.71	10	.55

Table 2. Summary of the item analysis of twenty items chosen to test a student's attitude toward his school

Item #	% right in the top 27%	% right in the bottom 27%	Difficulty Index	Validity Index
1	.97	.31	23	.77
5	.34	.02	11	.58
11	.86	.17	24	.67
15	.97	.71	9	.55
21	1.00	.51	17	.68
24	.91	.60	11	.41
33	1.00	.31	24	.77
34	.97	.63	12	.61
35	.94	.63	11	.47
44	1.00	.40	21	.72
46	1.00	.28	25	.79
48	.74	.02	30	.79
55	1.00	.40	21	.73
66	.37	.08	11	.47
69	.94	.57	13	.50
74	1.00	.37	22	.73
80	1.00	.57	15	.63
84	1.00	.43	20	.72
87	.51	.23	10	.31
90	.86	.51	12	.42

Table 3. Summary of the item analysis of fifty items chosen to test a student's attitude toward his teacher

Item #	% right in the top 27%	% right in the bottom 27%	Difficulty Index	Validity Index
2	1.00	.51	17	.68
3	1.00	.54	16	.66
4	1.00	.80	7	.43
6	.97	.63	12	.61
7	.97	.80	6	.48
10	1.00	.66	12	.58
12	1.00	.54	16	.66
14	.94	.37	20	.64
18	1.00	.51	17	.68
19	.97	.40	20	.73
20	.97	.71	9	.55
23	1.00	.60	14	.63
25	1.00	.63	13	.61
26	.94	.54	14	.53
27	.86	.63	9	.31
28	1.00	.31	24	.77
30	1.00	.89	4	.30
31	.91	.17	26	.71
32	1.00	.54	16	.66
36	.97	.37	21	.73
38	.97	.63	12	.61
41	.97	.69	10	.55
42	1.00	.37	22	.73
45	1.00	.54	16	.66
47	1.00	.49	18	.68
49	1.00	.49	18	.68
50	.94	.37	20	.64
52	1.00	.63	13	.61
53	1.00	.40	21	.73
54	1.00	.74	9	.51
57	1.00	.34	23	.75
58	.91	.17	26	.71
59	.97	.74	8	.51
60	1.00	.66	12	.58
63	1.00	.34	22	.75
65	1.00	.77	8	.48
67	1.00	.63	13	.61
70	1.00	.28	25	.79
72	.97	.66	11	.58
73	1.00	.37	22	.73
76	1.00	.34	23	.75
77	1.00	.54	16	.66
79	.97	.40	20	.73

Table 3. Continued

Item #	% right in the top 27%	% right in the bottom 27%	Difficulty Index	Validity Index
81	1.00	.31	24	.77
83	.97	.40	20	.73
85	.91	.17	26	.81
88	1.00	.77	8	.48
89	1.00	.49	18	.68
91	1.00	.26	26	.79
93	1.00	.28	25	.79

Table 4. Summary: Analysis of Variance. Is there a significant difference among the mean scores of District A as compared to District R in relation to a student's attitude toward his peers?

Source of variation	df	Sums of squares	Mean squares (variance)	SD
Among the means of conditions	11	1,046	95	
Within conditions	916	26,716	29	5.38
Total	927	27.762		

$$F = \frac{95}{29} = 3.28*$$

$$df_1 = 11 \text{ and } df_2 = 916$$

$$F \text{ at } .05 = 1.83$$

$$F \text{ at } .01 = 2.30$$

* Significant at .01 level of probability

Table 5. Summary: Analysis of Variance. Is there a significant difference among the mean scores of District A as compared to District R in relation to a student's attitude toward his teacher?

Source of variation	df	Sums of squares	Mean squares (variance)	SD
Among the means of conditions	11	4,967	451	
Within conditions	916	75,488	82	9.06
Total	927	80,453		

$$F = \frac{451}{82} = 5.50*$$

$$df_1 = 11 \text{ and } df_2 = 916$$

$$F \text{ at } .05 = 1.83$$

$$F \text{ at } .01 = 2.30$$

* Significant at .01 level of probability

Table 6. Summary: Analysis of Variance. Is there a significant difference among the mean scores of District A as compared to District R in relation to a student's attitude toward his school?

Source of variation	df	Sum of squares	Mean square (variance)	SD
Among the means of conditions	11	1,237	112	
Within conditions	916	13.826	15	3.87
Total	927	15,063		

$F = \frac{112}{15} = 7.47^*$

$df_1 = 11$ and $df_2 = 916$
 F at .05 = 1.83
 F at .01 = 2.30

* Significant at .01 level of probability

Appendix C

THE U. S. U. SCHOOL INVENTORY

NAME		TEACHER'S NAME	
GRADE	SCHOOL	DATE	

BOY GIRL
(Circle one)

DIRECTIONS TO STUDENT

On the following pages you will find a list of questions concerning things about this school that you may or may not like. We should like to know what things about the school you like and what you dislike. Your answers will be secrets to yourself, and only those of us who are here giving the test will have a chance to see your answers. They will not affect your grade in any way. Your teachers will not see your answers. If you will answer these questions honestly and thoughtfully, the school will work to improve the conditions which your answers indicate need improvement.

There are no right or wrong answers. Indicate your answer by drawing a circle around "Yes," "No," or "?". Try to answer all questions either "Yes" or "No". If you are certain that you cannot answer "Yes" or "No," then use the question mark.

There is no time limit, but work rapidly.

Page 2

- Yes No ? 1. Do you like all of the subjects you are now taking in this school?
- Yes No ? 2. Does your teacher expect you to do too much work?
- Yes No ? 3. Is it easy to make friends with your teacher?
- Yes No ? 4. Does your teacher act as if she likes her work?
- Yes No ? 5. Do you wish you could get better grades in school?
- Yes No ? 6. Does your teacher tell you when you've done a good job?
- Yes No ? 7. Does your teacher encourage you to do your best work?
- Yes No ? 8. Do you have a hard time making new friends?
- Yes No ? 9. Have you been able to get into the school activities that you like best?
- Yes No ? 10. Have you found your teacher to be too strict?
- Yes No ? 11. Would you like to study different things than the ones you are now studying?
- Yes No ? 12. Are you proud of your teacher?
- Yes No ? 13. Do you find it easy to make friends in this school?
- Yes No ? 14. Does your teacher get upset over small matters?
- Yes No ? 15. Are the things you are learning in school interesting?
- Yes No ? 16. Do you feel you are popular with boys?
- Yes No ? 17. Do you feel you are popular with girls?
- Yes No ? 18. Can your teacher explain the lessons clearly?
- Yes No ? 19. Do your principal and teacher act as if they are always right and you are always wrong?
- Yes No ? 20. Are you frightened by the way your teacher calls on you in classes?

- Yes No ? 21. Have you found it hard to prepare your lessons for your classes?
- Yes No ? 22. Are you usually a leader in your group?
- Yes No ? 23. Does your teacher require too much homework?
- Yes No ? 24. If you were able to do so, would you like to attend some other school than the one you are now attending?
- Yes No ? 25. Do you dislike your teacher?
- Yes No ? 26. Is your principal too strict with students?
- Yes No ? 27. Do you like your teacher's speaking voice?
- Yes No ? 28. Do you feel that some of your teachers have held a "grudge" against you?
- Yes No ? 29. Is there a small group of students who always plan class activities?
- Yes No ? 30. Is your teacher lazy?
- Yes No ? 31. Does your teacher have "pets" in this class?
- Yes No ? 32. Is your teacher a good friend to the students?
- Yes No ? 33. Do you have trouble keeping your mind on what you are studying?
- Yes No ? 34. Are your lessons too long?
- Yes No ? 35. Would you like to quit school now?
- Yes No ? 36. Does your teacher play favorites?
- Yes No ? 37. Are there any groups of children who won't let you play with them?
- Yes No ? 38. Are you afraid of your teacher?
- Yes No ? 39. Do the other students like you?
- Yes No ? 40. Do you think the students in this school are "stuck-up?"
- Yes No ? 41. Do you think that some of the women teachers in this school show favoritism towards boys in their classes?
- Yes No ? 42. Is your teacher hard to understand?

- Yes No ? 43. Are the students in this school fair in their play?
- Yes No ? 44. Does school make you unhappy?
- Yes No ? 45. Does your teacher make lesson assignments easy to understand?
- Yes No ? 46. Are you smart in school?
- Yes No ? 47. Is it easy to get to know your teacher?
- Yes No ? 48. Are some of your lessons very boring to you?
- Yes No ? 49. Does your teacher treat you fairly?
- Yes No ? 50. Does your teacher admit it when she is wrong?
- Yes No ? 51. Are the boys and girls in this school usually nice to you?
- Yes No ? 52. Does your teacher give grades fairly?
- Yes No ? 53. Is your teacher interested in you?
- Yes No ? 54. Does your teacher show a lack of interest in class and school activities?
- Yes No ? 55. Do you have difficulty keeping your mind on what goes on in class?
- Yes No ? 56. Do your friends trust you?
- Yes No ? 57. Does your teacher like to make you feel embarrassed before the class?
- Yes No ? 58. Do you wish your teacher liked you better?
- Yes No ? 59. Does your teacher really care whether you learn something in this class?
- Yes No ? 60. Have you found that your teacher does not like to be with the boys and girls?
- Yes No ? 61. Do you think that the boys and girls in this school like you as well as they should?
- Yes No ? 62. Are you proud of your friends?
- Yes No ? 63. Is your teacher often mean and unfair to you?
- Yes No ? 64. Do your classmates usually feel that they know more than you?
- Yes No ? 65. Do you feel that your teacher dislikes her job?

- Yes No ? 66. Do you wish you could study better?
- Yes No ? 67. Does your teacher treat you like you were a small child?
- Yes No ? 68. Are you often left out of things other kids do?
- Yes No ? 69. Do you think that this school is run as if it were a prison?
- Yes No ? 70. Does your teacher understand you?
- Yes No ? 71. Do your classmates seem to think you are not a good friend?
- Yes No ? 72. Do you think your school requires too much homework?
- Yes No ? 73. Is your teacher cheerful and pleasant?
- Yes No ? 74. Do you like your lessons?
- Yes No ? 75. Do you find it hard to be as popular as the other kids?
- Yes No ? 76. Does your teacher give you enough individual help in your school work?
- Yes No ? 77. Does your teacher lack a sense of humor?
- Yes No ? 78. Do your classmates think you are smart?
- Yes No ? 79. Is your teacher usually nice to you?
- Yes No ? 80. Do you hate school?
- Yes No ? 81. Is your teacher "bossy?"
- Yes No ? 82. Do you prefer to be alone?
- Yes No ? 83. Does your teacher like you?
- Yes No ? 84. Do you find your school work dull and uninteresting?
- Yes No ? 85. Do you often think that your teacher does not like you?
- Yes No ? 86. Are your feelings hurt easily?
- Yes No ? 87. Do you wish you were smarter in school?

- Yes No ? 88. Do your parents like your teacher?
- Yes No ? 89. Is your teacher honest in her dealings with you?
- Yes No ? 90. Do students who are not good at school work get treated fairly in this school?
- Yes No ? 91. Do you often wish you had some other teacher?
- Yes No ? 92. Do you worry about losing your friends?
- Yes No ? 93. Is your teacher often so unkind or unfair that it makes you feel bad?
- Yes No ? 94. Are there some students who do not like you?
- Yes No ? 95. Are you lonesome in school?