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PUPIL PREFERENCE FOR FOUR ART STYLES USED IN PRIMARY READING TEXTBOOKS

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PUPIL PREFERENCE FOR FOUR ART STYLES USED

IN PRIMARY READING TEXTBOOKS

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DEDICATION

This research study is respectfully dedicated to my parents, Mr. and Mrs. A. E. Dawson, in appreciation of the immeasurable contribution they have made to the education of their daughter, and to my children, Vicki Nell, Mary Lynn, and Bradford Earl, for their encouragement and patience throughout the entire program.

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CHAPTER I

INTRODUCTION

Background of the Study

A major concern of the American people today is the maximum education of all children, regardless of sex, intelligence, or socio-economic status. While books are not the only source for the attainment of educational goals, they play a major role in the educative process. In recent years, writers, artists, and editors have worked diligently to improve the quality and quantity of books available for children as well as adults. The annual output is tremendous. However, these books range from the unreliable and trashy to the accurate and permanently significant. The treasures are there, but we need some definite standards by which to judge them.

A significant aspect of good books is illustration, probably the oldest form of the graphic arts. Its history can be divided into three basic periods: (1) before the manuscript, (2) the manuscript, and (3) the printed book.

The first period encompasses all sorts of primitive art--carvings on bones, on stones, in caves, in tombs and other picture messages, including the symbols which now constitute the alphabet. The second period united the miniaturist, the decorator, and the writer to make books that were filled with illustrative beauty but which were available to a select few. The third period followed the invention of the printing press and the advent of printing in the Western World and was characterized by the availability of more books and the introduction of the age of beautiful illustration.[1]

Orbis Sensualium Pictus by John Amos Comenius has been called "the first picture book for children." It evidently pleased the children even though it was a textbook because it was used in translation throughout Europe for more than one hundred years. It was more than a century later before writers and illustrators came to realize that "the use of books for pleasure is the most satisfactory recreation."[2] In actuality, the rise of the picture book, enjoyed by children and adults alike, is a comparatively recent innovation in the field of literature. Even more recently it has been suggested that an effective way to teach art appreciation would be through children's picture books which incorporate all types of art styles and techniques. It certainly cannot be denied that the

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[1]Bertha E. Mahony, Louis Payson Latimer, and Beulah Folmsbee, Illustrators of Children's Books, 1744-1945 (Boston: The Horn Books, Inc., 1947), p. 379.

[2]Ibid.

child's world of books begins with pictures. He is usually able to "read" pictures before he is able to follow a narrative read to him. In essence, pictures exert a profound influence in a child's life, and writers and editors have come to realize this.

Beautiful illustrations are among the most striking characteristics of modern books. Publishers are fully aware of the effect of bright colors, soft pastels, even black and white or pen and ink sketches on the delight and charm that children feel for certain books. Attractive pictures can sell a book with little merit; a potential classic may be overlooked because it lacks attractive art. Since illustrations play such an important role in instilling the love of books in children and satisfying their need for beauty, writers, illustrators, and editors should consider the type of art the children enjoy and appreciate, and the child himself should be the starting point.

Since the beginning of printed material, storytellers have presented every phase of human life, and artists have been moved to reproduce nature and life in a variety of forms. Sometimes illustrations are realistic and lifelike; sometimes they are purely imaginative; sometimes they are allegorical; sometimes they are symbolical. All forms have a definite place in the work of both writer and illustrator.

Certainly then, picture books and illustrations in written material should be closely examined. The likes and dislikes of children should be considered in the style of art

incorporated in these books. All people who work with children's literature should be discerning in their judgment and capable of critically evaluating pictures as well as texts. In view of the importance of illustrations in books, the problem of examining pupil preference for art styles used in reading textbooks with respect to sex, intelligence, and socio-economic status warrants careful investigation.

Need for the Study

For years publishers have considered illustrations of basal readers in the light of subjective criteria. There are endless discussions on what authors "think" the children should enjoy, but the majority of these are written from a purely subjective point of view. There is practically no scientific research for most of the assumptions. The studies available have been concerned with color appeal, the value of illustrations in building concepts, or the effect of pictures in helping children learn to read. Many publishers admit that the criterion they use for selecting illustrations is merely intuitive judgment of authors and editors.[3] Here, again, is another example of the subjective judgment of adults imposed upon children with virtually no concern for their interests, likes, or dislikes.

With so much attention currently focused on culturally or educationally disadvantaged groups and with innumerable remedial reading programs incorporated into the public school curricula,

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[3]Alexander B. Howard, Jr., "Textbook Illustrations: A Visual Aid," Educational Screen, 26 (January, 1947), pp. 27-28.

there is an even greater need for research to determine from the pupils themselves what they like in illustrations. Furthermore, there is a great need for determining the relationship of sex, intelligence, and socio-economic status to pupil preferences for art styles. Such a study is necessary for evaluating the recommendation that special materials be developed for various segments of the population. This information would also be valuable to editors and authors of educational materials, particularly in the case of remedial reading materials.

Statement of the Problem

The problem of this study was the determination of the type of art preferred by second grade pupils when given a choice of the four major art styles of illustrations used in primary reading textbooks. A subproblem was the determination of the relationships of sex, intelligence, and socio-economic status to pupil preferences.

Definition of Terms

For the purposes of this study the following definitions were used:

Realistic art*-- Realistic art is defined as that type of art which depicts people or animals in real life situations with photographic clarity.

Muted realistic art*-- Muted realistic art is defined as that type of realistic art which deliberately softens the color and physical aspect of the subject, giving a somewhat blurred appearance to the picture illustration.

Semi-abstract art*-- Semi-abstract art is defined as that type of art which, still bearing some relation to nature or the natural form of the object, has also departed from it.

Cartoon art*-- Cartoon art is defined as that type of art which is satirical or humorous in design either because of the subject matter or exaggeration.

High intelligence**-- High intelligence is defined as the range of intelligence of those subjects who score between 115 and 125 on the California Test of Mental Maturity.

Average intelligence**-- Average intelligence is defined as the range of intelligence of those subjects who score between 95 and 105 on the California Test of Mental Maturity.

Low intelligence**-- Low intelligence is defined as the range of intelligence of those subjects who score between 75 and 85 on the California Test of Mental Maturity.

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*The definitions of art styles were formulated from those given in Style in Painting by Ray Bethers and through consultation with Bill Mathison, illustrator for the Economy Company, Educational Publishers, Oklahoma City, Oklahoma.

**Classification of pupil intelligence was taken from Lewis M. Terman and Maud A. Merrill, "A Frame of Reference for Classifying IQ's," Stanford-Binet Intelligence Scale, Manual for the Third Revision, Form L-M (Boston: Houghton Mifflin Company, The Riverside Press, 1961), p. 18. This is probably the most acceptable classification in use today. The "islands" were deliberately left in the IQ scale by this author in order to take care of the standard error as well as to establish clear cut divisions of pupil intelligence. IQ's above 125 and below 75 were eliminated in order to delete the extremes at both the upper and lower level of intelligence.

Upper socio-economic status*** -- Upper socio-economic status is defined as the status of those children who score between 12 and 24 as measured by and inferred from the results of the Warner Index of Status Characteristics.

Middle socio-economic status*** -- Middle socio-economic status is defined as the status of those children who score between 25 and 53 as measured by and inferred from the results of the Warner Index of Status Characteristics.

Lower socio-economic status*** -- Lower socio-economic status is defined as the status of those children who score between 54 and 84 as measured by and inferred from the results of the Warner Index of Status Characteristics.

Hypotheses of the Study

One basic hypothesis and nine null hypotheses relating to the main problem of the study were formulated and tested. The hypotheses are listed below.

1.-There is a statistically significant preference by second grade children for realistic art styles when compared with muted realistic, semi-abstract, and cartoon styles.

2. There is no statistically significant difference in pupil preferences for art styles among the high, average, and low intelligence groups in second grade children.

***Socio-economic status classifications were based on the Warner Index of Status Characteristics. This writer assumed that this Index could measure objectively the socio-economic status of individuals in the status structure of the community. Four characteristics of status were computed on each subject. These characteristics were: (1) occupation of the subject's father or other head of the family, (2) source of income, (3) house type, and (4) dwelling area.

3. There is no statistically significant differences in second grade pupil preferences for art style between children with above average and those with average intelligence.

4. There is no statistically significant difference in second grade pupil preferences for art styles between children with high intelligence and those with low intelligence.

5. There is no statistically significant difference in second grade pupil preferences for art styles between children with average intelligence and those with low intelligence.

6. There is no statistically significant sex difference in second grade pupil preference for art style.

7. There is no statistically significant difference in second grade pupil preferences for art style among the upper, middle, and lower socio-economic groups.

8. There is no statistically significant difference in second grade pupil preferences for art style between children in the upper socio-economic group and those in the middle socio-economic group.

9. There is no statistically significant difference in second grade pupil preferences for art styles between children in the upper socio-economic group and those in the lower socio-economic group.

10. There is no statistically significant difference in second grade pupil preferences for art style between

children in the middle socio-economic group and those in the lower socio-economic group.

Limitations of the Study

This investigation was confined to a study of the four major art styles of illustrations used in primary reading textbooks. A check of fifteen basal readers was made to determine the most commonly used methods of illustrations, and the final choices were made with a limited amount of subjectivity. Inasmuch as minor art styles were not considered, this constitutes a limitation of the study.

This study was also limited in choice of subjects in two ways. First, it was limited to second grade pupils because of the need for research involving primary age children. Secondly, all subjects were Caucasian because none of the schools involved had a sufficient number of any one minority group enrolled in the second grade for them to be considered. This constitutes another limitation of the study.

This study was also limited geographically. All pupils selected lived and attended school in school districts in Midwest City, Oklahoma. This constituted the last limitation of the study.

Review of Related Research and Literature

Studies germane to the present project can be grouped as follows: (1) investigations of the value of illustrations in building concepts, (2) studies exploring the role of

pictures in helping children learn to read, and (3) studies dealing primarily with color appeal or subject matter of illustrations. This summary deals with the major findings in all three categories. It is evident from professional literature that studies dealing with these aspects of pictorial illustrations are numerous. However, no studies of the type comparable to this investigation were reported in the literature that was surveyed.

Studies Involving Value of Illustrations in Building Concepts

A great deal of research has been conducted and much has been written about the purposes served by textbook illustrations. Malter[4] completed a study in 1950 in which he concluded that the general purposes served by textbook illustrations fall into three groups. First, they may serve as a source of pleasure and interest to the reader. While this interest in pictures decreases with age, it is an important factor in books designed for the beginning reader. Second, illustrations may communicate concepts which are capable of changing pupil behavior. Once a concept is well established, an illustration of this concept may have a more lasting effect than a mere verbal or written statement. And third, illustrations may be useful in making relevant verbal symbols meaningful. In the cases where verbalization fails,

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[4]Morton S. Malter, "The Relationship of Certain Variables to Children's Ability to Estimate the True Size of Picture Objects." Unpublished Doctor's Dissertation, Department of Education, University of Chicago, 1948, pp. 54-56.

pictures may offer a meaningful solution. Pictures often do what words fail to do.

Dale[5] reported that the fundamental purpose of pictures is to serve as substitutes for first-hand experience. When a child has a limited experiential background, vicarious experience is the only possible way to enrich his knowledge. He wrote that pictures may be used for at least nine different purposes in teaching: (1) as a substitute for experience, (2) as a means of making classrooms gay and bright, (3) as an aid to picture study, (4) as motivation for pupil participation, (5) as a method of introduction to a subject or as a way to arouse interest in a subject, (6) as a way to bring far away places to the classroom, (7) as enrichment in reading, (8) as a method of correcting wrong impressions or erroneous ideas, and (9) as a method of increasing retention of what is taught.

Horn[6] stated the values claimed for pictures in the field of social studies research. According to him, pictures are beneficial in the following ways: (1) they contribute to meaning; (2) they combat verbalism; (3) they arouse interest and contribute to the effort put forth by pupils; (4) they stimulate the reader's imagination; (5) they aid retention. He added that these claims have been validated, for the most part, by results of research and experimentation.

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[5]Edgar A. Dale, "Seeing the Meaning," Educational Screen, XXVII (January, 1948), p. 11.

[6]Earnest Horn, Methods of Instruction in the Social Studies (New York: Charles Scribner's Sons, 1937), p. 360.

In the field of geography, Parker[7] stated that pictures are the basic laboratory material. Since geography is a subject in which new concepts must be developed and in which many words with new meanings are introduced, pictures are invaluable.

In the area of reading, Betts[8] commented that interesting and interpretative illustrations are needed. He maintained that a well-illustrated book contributes to concept building and motivation of the slow learner or retarded reader.

Studies Exploring Role of Pictures in Learning to Read

In 1951, Ibison[9] conducted an experimental study involving 114 second grade children. He measured only one factor in reading skill--retention. This study employed for the first time commercially prepared materials consisting of the same stories with text alone, text with black and white illustrations, and text with fully colored illustrations. He used three different stories for the experiment and found that in two of the three stories tested, colored illustrations were measurably helpful in retention. In the case of the third

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[7]Edith P. Parker, "Pictures as Laboratory Material in Geography," Education, 64 (March, 1944), pp. 434-437.

[8]Emmett Albert Betts, The Prevention and Correction of Reading Difficulties (Evanston, Illinois: Row, Peterson and Co., 1936), p. 19.

[9]Richard A. Ibison, "Differential Effects in the Recall of Textual Materials Associated with the Inclusion of Colored and Uncolored Illustrations." Unpublished Doctor's Dissertation, Department of Education, Indiana University, 1951, p. 96.

story, however, there was no significant difference in the effectiveness between the text alone, text with black and white, and text with colored illustrations insofar as was measurable. Ibison points out that the latter story "had enough intrinsic interest that it could carry itself even without illustrations."

Although much of the evidence indicated that pictorial illustrations tend to increase the learning from verbal material, there was conflicting evidence that this is not necessarily true. Miller[10] and Vernon[11] both experimented with pupil instruction by pictorial illustration. Their findings revealed that there was no significant differences in pupil learning without pictures and with pictures. In view of the conflicting evidence, it appears that a great deal of study still needs to be made of the factors within pictorial illustrations that lead to increased learning. The content best communicated by still pictures and techniques of using these pictures in teaching also need further research and experimentation.

Many investigators maintained that pictorial illustrations increase the learning from verbal material. On the other hand, many stated that such is not necessarily true.

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[10]William A. Miller, "Reading with and Without Pictures," Elementary School Journal, XXXVIII (Winter, 1938), pp. 76-82.

[11]M. D. Vernon, "The Instruction of Children by Pictorial Illustration," British Journal of Educational Psychology, XXVI (Winter, 1954), pp. 171-79.

A few went so far as to thoroughly disapprove of illustrating books for children. Mangravite[12], a leading authority of this group, stated that it is virtually impossible to coordinate the mental imagery of the writer, the illustrator, and the child, and refused to allow her children to look at picture books because it distorted their sense of reality. Typical of her opinion is the following comment.

> It is because of my belief in the true creative vision of children that I disapprove of illustrated children's books....Looking at pictures, if it teaches them anything, teaches them the art of imitation.[13]

In 1945, Richards[14] conducted an experiment which was concerned with the effect of illustrations on comprehension of factual material. Three stories from books and one original story were mimeographed and folded in booklet form. Two forms of the material were constructed--in one the first and third forms of the stories were illustrated with simple outline drawings produced by drawing with a stylus on the mimeographed stencil; in one none of the stories were illustrated. Richards concluded that while three-fourths of the cases showed differences in favor of the illustrated stories, this difference was not statistically significant and suggested that future research should use illustrations that are more meaningful and of professional quality.

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[12]Peppino Mangravite, "The Artist and the Child," Progressive Education, III (April, May, June, 1926), p. 124.

[13]Ibid.

[14]Claire E. Richards, "An Evaluation of the Effect of Illustrations on Comprehension in the Fifth and Sixth Grades." Unpublished Master's Thesis, School of Education, Boston University, 1945.

Studies Dealing with Color Appeal or Subject Matter

The value of pictures in textbooks, particularly those designed for the elementary grades, has long been recognized by most authorities. Research studies have been responsible for marked changes in the illustrations used in readers. No longer are books published in drab covers; small pictures scattered sparsely through books have been replaced by large pictures covering a large percentage of the total pages. Available evidence concerning illustrations in children's books has been summarized as follows:

1. Children like books that have at least one quarter of the total page space devoted to pictures;
2. They prefer large pictures;
3. They prefer strong colors to black and white or to delicate pastel colors;
4. They like bold central groups, with few but striking details;
5. They prefer realistic to conventionalized pictures;
6. They prefer pictures which show action or humor and tell a story;
7. Young children like a broader range of subject matter than they usually receive;
8. Young children do not care especially for pictures of child activities;
9. Older children like pictures related to in-school and informational activities.[15]

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[15]B. Goodykoontz, "The Relation of Pictures to Reading Comprehension," Elementary English Review, XIII (January, 1936), pp. 125-28.

In 1930, MacLean[16] completed an experiment designed to discover whether or not colored pictures were pedagogically superior to similar uncolored pictures. The study involved 152 boys from one high school. Six autochromes from The National Geographic Magazine, photographic copies of these, and some colored and uncolored postcards were used. The boys were divided into two groups of equal number. One group was shown a picture in color while the other was shown the same picture uncolored. Two questions were asked about each of the pictures. Total scores were tabulated according to the number of correct responses to the questions. Fifty-seven per cent of the subjects produced a greater range of accuracy of responses when shown the colored pictures. It may thus be concluded that although colored pictures were superior in getting the correct answers more frequently than plain ones, differences were slight.

Every study concerned with the role of color in illustrations has substantiated the fact that young children have a very considerable preference for colored pictures. Kinder stated:

> The introduction of color in textbook illustrations has added to the general appeal of textbook pictures. Color may not always be necessary or appropriate, but its psychological value, its 'eye appeal,' is conspicuous.[17]

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[16]W. P. MacLean, "A Comparison of Colored and Uncolored Pictures," Educational Screen, IX (September, 1930), pp. 196-99.

[17]James A. Kinder, Audio-Visual Materials and Techniques (New York: American Book Company, 1950), p. 109.

The findings of Whipple[18] indicated that illustrations should be large, colorful drawings with a clear center of interest and no extraneous detail. Likewise, Rudisell[19] concluded that children prefer realistic pictures in color, but they will choose a realistic black and white picture over a less realistic colored one.

In the same experiment, Rudisell concluded that pictures were valuable to the extent that they made the material come to life for the reader.

> A perfect visual representation of realism includes color, and color in pictures proves satisfying to the child in proportion to its success in increasing the impression of realism or lifelikeness.[20]

Although picture preference studies vary in conclusions, for the most part they concur in five different aspects, viz.: (1) they should contain action; (2) they should be colored; (3) they should tell a story; (4) they should be related to previous experiences and should be related to places, objects, persons, events, or animals about which the reader is familiar; and (5) they should be large. Along this line, Spaulding,[21] conducted an experiment with newly literate adults in Latin

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[18]Gertrude Whipple, "Appraisal of the Interest Appeal of Illustrations," Elementary School Journal (January, 1953), pp.262-69.

[19]Mabel Rudisell, "Children's Preferences for Color versus Other Qualities in Illustrations," Elementary School Journal, LII (1952), pp. 444-51.

[20]Ibid., p. 451.

[21]Seth Spaulding, "Communication Potential of Picture Illustrations," Audio-Visual Communication Review, IV (1955), pp. 31-46.

America. He concluded that illustrations should be presented in terms of the past experience of the intended audience. Furthermore, he stated that they should be simple, should be in color, and captions should be used to generalize, modify, relate, and extend the meaning of the illustrations.

In 1949, Ohlrogge[22] investigated children's preferences for illustrative techniques. In her experiment, she prepared six booklets, each identical in content. However, they differed in illustrative techniques. One used crayon drawing, one design, one finger painting, one line drawings, one sepia, and one water colors. Subjects were second, fourth, and sixth grade levels. As a whole, the groups preferred the crayon type of illustration. The second choice was water color for the second and fourth grade children. The sixth graders chose sepia as a second choice.

Conclusions

A number of tenable conclusions emerge from studies concerned with illustrations in children's readers. The following conclusions can be stated with confidence since they are based upon evidence resulting from carefully conducted research.

1. Illustrations, usually, contribute to the reading success of children when they help children develop an interest in reading activities.

2. Illustrations are beneficial in giving children vicarious experiences they would not otherwise have.

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[22]Elizabeth S. Ohlrogge, Children's Preference in Book Illustrations, Unpublished Master's Thesis, Indiana University, 1949.

3. Illustrations in color are preferred by most children.

4. Illustrations which depict action are preferred by most children.

5. Illustrations which tell a story and build concepts are preferred by most children.

While current research data supporting the above statements are substantial, studies designed to determine the art style preferred by pupils have not been reported. This fact evinces a void in research knowledge and is a weakness which the present study will help to overcome.

Organization of the Report

The report of the study is organized into four chapters as follows:

Chapter I presents the background, need for the research, the problem, definitions of terms, hypotheses of the study, limitations of the study, a summary of relevant research, and organization of the report.

Chapter II is devoted to the procedures of the study.

Chapter III is concerned with the presentation and analysis of data.

Chapter IV contains a summary, conclusions, and recommendations drawn from the study.

CHAPTER II

PROCEDURES OF THE STUDY

This investigation involved four major steps: (1) the selection of the subjects, (2) the construction of an instrument, (3) the administration of the test, and (4) tabulation of the raw data.

Selection of Subjects

Subjects for the study were second grade pupils in three elementary schools in the Midwest City, Oklahoma, public school system. All pupils enrolled in these schools were English speaking Caucasian children. According to the school officials, one school was representative of the lower socio-economic strata of the community, one was representative of the middle socio-economic strata of the community, and one was representative of the upper socio-economic strata of the community. This socio-economic classification by school officials was based on current value of real estate in the areas and on the number of children receiving aid to dependent children attending the schools.

There were three second grade classes in each of the three schools chosen, nine groups in all. Class size ranged from 15 to 28 students with a total enrollment of 207 pupils. (See Table 1.) From this population, 90 subjects were chosen in such a way as to control sex, intelligence, and socio-economic status.

All nine classes were organized as self-contained units, each under the direction of a regularly employed certified teacher. It was the policy in each of the three schools to assign students to classes on an achievement basis which was called levels. According to the school officials, an attempt was made to group the second grade pupils homogeneously according to intelligence and/or achievement.

TABLE 1

ENROLLMENT IN NINE SECOND GRADE CLASSES FURNISHING SUBJECTS FOR THE STUDY

Schools and Classes		Enrollment		
		Boys	Girls	Total
School A	Class 1	12	16	28
	Class 2	16	11	27
	Class 3	6	9	15
School B	Class 4	10	12	22
	Class 5	14	10	24
	Class 6	10	16	26
School C	Class 7	10	12	22
	Class 8	11	9	20
	Class 9	11	12	23
		100	107	207

All second grade children enrolled in the three schools were given the California Short-Form Test of Mental Maturity.

The tests were checked and pupils classified according to high, average, and low IQ, according to classifications set down by Terman and Merrill.[23] This level of classification is probably the most acceptable classification in use today. The latest revision and classifications were used.

Second grade pupils who scored between 115 and 125 on the test were classified in the high intelligence group; those pupils who scored between 95 and 105 on the test were classified in the average intelligence group. Those who scored between 75 and 85 on the test were classified in the low intelligence group.

The "islands" of 105-115 between the average and high intelligence groups and 85-95 between the average and low intelligence groups were deliberately omitted in order to take care of the standard margin of error as well as to establish clear cut divisions of pupil intelligence. Furthermore, IQ's above 125 and those below 75 were eliminated in order to delete the extremes at both the upper and lower levels of the intelligence scale.

Four characteristics of status were computed for all subjects falling in each of the intelligence groups. These characteristics were: (1) occupation of the subject's father or other person serving as head of the family, (2) source of

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[23]Lewis M. Terman and Maud A. Merrill, "A Frame of Reference for Classifying IQ's," Stanford-Binet Intelligence Scale, Manual for the Third Revision, Form L-M (Boston: Houghton Mifflin Company, The Riverside Press, 1961), p. 18.

income, (3) house type, and (4) dwelling area. The children were then rated on each of the four characteristics according to Warner's seven point scales. (See Appendix A, Tables 5 and 6.) Once the scale ratings had been determined, each status factor was multiplied by the appropriate weight which expressed the importance of that particular status characteristic in the socio-economic status prediction. The weighted ratings for each subject were then totaled and the numerical result was considered to be the index of socio-economic status as developed in Warner's Index of Status Characteristics. (See Appendix A, Table 7.) According to this method of socio-economic rating, the lower the rating, the higher the status; the higher the rating, the lower the status. The calculation for a pupil in each of the three groups appears in Tables 2, 3, and 4. These sample indices were based on actual statistics of three different subjects. The first one lived in a poor condition house located in a run-down area and his father was a laborer, receiving his major income from weekly wages, depending on the number of hours worked. The second one lived in a good house in an above average neighborhood. His father was a business man receiving a good monthly salary. The third one lived in a very good house in a better suburban area. His father was a medical doctor who received his money from fees and services. It was assumed that this yielded an objective index of the

socio-economic status of individuals in the status structure of the community.

In each school the children falling into each intelligence-social status group were then subgrouped according to sex. Five subjects from each intelligence-social status-sex group were then randomly selected. Therefore, each subject met four criteria: school attended, Warner's Index of Status Characteristics, intelligence level, and sex. Of the 90 subjects selected for the experiment, one third of the subjects were selected from a school serving a low socio-economic area; one-third were selected from a school serving a middle socio-economic area; one-third were selected from a school serving a high socio-economic area. One-third of the subjects from each school was of high intelligence; one-third was of average intelligence; one-third was of low intelligence. One-half of each sub-group based on intelligence was boys; one-half of each sub-group based on intelligence was girls (see Appendix B).

TABLE 2[a]

DETERMINATION OF A SUBJECT'S INDEX OF SOCIO-ECONOMIC STATUS BASED ON STATUS CHARACTERISTICS OF THE FAMILY HEAD

Status Characteristics	Scale Value	Weight of Characteristics	Partial Rating[b]
Occupation (Heavy Labor)	7	4	28
Source of Income (Hourly Wage)	5	3	15
House Type (Poor)	6	3	18
Dwelling Area (Low)	6	2	12
Numerical Index of Socio-Economic Status[c]			73

[a]This particular Index indicates that subject is low socio-economic status.

[b]The partial rating is the scale value multiplied by the weight of the characteristic.

[c]The number is the weighted total score from which the composite Index of Socio-Economic Status was derived.

TABLE 3[a]

DETERMINATION OF A SUBJECT'S INDEX OF SOCIO-ECONOMIC STATUS BASED ON STATUS CHARACTERISTICS OF THE FAMILY HEAD

Status Characteristics	Scale Value	Weight of Characteristics	Partial Rating[b]
Occupation (Office Manager)	2	4	8
Source of Income (Monthly Salary)	4	3	12
House Type (Good)	3	3	9
Dwelling Area (Above Average)	3	2	6
Numerical Index of Socio-Economic Status[c]			35

[a]This particular Index indicates that subject is middle socio-economic status.

[b]The partial rating is the scale value multiplied by the weight of the characteristic.

[c]The number is the weighted total score from which the composite Index of Socio-Economic Status was derived.

TABLE 4[a]

DETERMINATION OF A SUBJECT'S INDEX OF SOCIO-ECONOMIC STATUS BASED ON STATUS CHARACTERISTICS OF THE FAMILY HEAD

Status Characteristics	Scale Value	Weight of Characteristics	Partial Rating[b]
Occupation (Doctor)	1	4	4
Source of Income (Profits and Fees)	3	3	9
House Type (Very Good)	2	3	6
Dwelling Area (High)	2	2	4
Numerical Index of Socio-Economic Status[c]			23

[a]This particular Index indicates that subject is high socio-economic status.

[b]The partial rating is the scale value multiplied by the weight of the characteristic.

[c]The number is the weighted total score from which the composite Index of Socio-Economic Status was derived.

The Instrument

Description

An assumption basic to this study is that pupil preferences for one art style over others can best be determined by giving children a series of pictures for comparison and asking them to select the one they like best. Four different art styles from eight different basal reader series textbooks were selected for investigation. All of the series used in this study were widely used primary reading textbooks. Permission was granted by the publishers for the use of the illustrations shown from their particular series.

Four sets of four pictures each were constructed. Set I depicted people in real life situations; Set II depicted animals in real life situations; Set III depicted people in fantasy situations; Set IV depicted animals in fantasy situations.

The illustrations selected were parallel in content and exemplified a pure form of the art in order to minimize extraneous factors that might be involved in pupil choice. Each set contained one illustration each of realistic, muted realistic, semi-abstract, and cartoon art as defined in another part of this paper. All illustrations were in four-part color and were mounted on an eight- by ten-inch piece of white sign board to help give the effect of uniformity of size. (See Appendix C for a list of illustrations used in the instrument.)

Validity

Since no instrument suitable for testing pupil preference for art-styles was available, this experimenter was obligated to construct one. And since there was no existing instrument against which the validity of the instrument could be checked, the experimenter conducted the following two-part investigation.

First, two commercial artists who have been involved in illustrating children's books for several years and two authors who have been involved in writing children's readers for a number of years were called in to examine the instrument. These four people, all closely associated with the development of children's basal readers, agreed that (1) the four art styles used in the instrument were the major forms of art employed in the publication of current basal readers; (2) the four pictures selected for each set were parallel in content; (3) the four pictures selected for each set contained no external factors which might tend to give any one subject in a picture an advantage over another; and (4) the pictures selected were representative of the styles of art that were defined as realistic, muted-realistic, semi-abstract, and cartoon.

It was further agreed that the selection of pictures from basal readers was a good choice of illustrations inasmuch as basal readers constitute the greater part of the pupul's instructional reading materials at the second grade level. These four people unanimously agreed that the instrument was so designed that it would test pupil preference for art style when the test was administered on an individual basis. The

individual testing situation eliminated the influence of one pupil's choice on the choice of another.

This constituted the first test of validity.

Secondly, a rating scale was devised whereby the judges were asked to rate each picture. This rating scale had five possible ratings--excellent, highly representative, representative, suitable, and unrepresentative. The judges were individually interviewed and asked to check a rating for each picture, according to their individual appraisal of the pictures' representation of the art styles as defined in Chapter I of this study. (See Table 9, Appendix E.)

The judges were instructed to keep the evaluation as purely objective as possible and minimize their personal preference for any particular style of art or subject matter.

The data from the rating scales were tabulated, and a proportions test[24] was used to determine the judges' choices by rank. The formula used was:

$$Z = \frac{p - P}{\sqrt{\frac{PQ}{N}}}$$

The results of this test showed that the choice of ordered ranks was highly significant with all proportions achieving at least the .01 level of significance and all but one proportion achieving the .05 level of significance. (See Table 10, Appendix E.)

It should be noted that this second test of validity was extremely critical inasmuch as it had previously been agreed

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[24] H. M. Walker and Joseph Lev, Statistical Inference (New York: Holt, Rinehart and Winston, 1953), p. 37.

by the judges that all pictures were acceptable as adequate representations of the art styles as defined by the experimenter. Thus, this second test further substantiated the validity of the instrument designed for this study.

Reliability

The question of reliability was basic to this study. It could not be assumed that second grade pupils are capable of making a valid preferential choice of art style. The test re-test procedure was used to test reliability.

Twenty-two second graders, all pupils not considered for the study, were selected. Each one was tested individually by the examiner, using the instrument designed for the study. The order of choices made by each pupil was recorded on a form. (See Appendix D.) One week later, the same pupils were re-tested with the same instrument and the pupil preferences were again recorded. The test and re-test were compared in an effort to determine whether or not second grade pupils could be relied upon to make the same choices each time.

The test re-test reliability check was conducted using Tau. The range of Tau was from .7564 to 1. The level of significance of these Taus ranged from a Z of 5.043 to 6.667. All sixteen Z scores were significant beyond the .001 level. Therefore, this instrument may be considered highly reliable. (See Table 11, Appendix F. Raw data, Appendix G.)

Method of Testing

Each child was tested in a room of the school building with only the subject and the examiner present. The test was

administered in a face-to-face relationship since children appear to be more comfortable and respond more freely in this setting. All four sets of the pictures constituting the testing instrument were used and were placed face down until presented set at a time to the child. The order in which the picture sets were placed in front of the pupils was varied from subject to subject. The pictures in each set were also placed in front of the subjects in varied order so that the possibility of choice because of position could be eliminated.

The following verbal instructions were given:

(1) You will be shown four sets of pictures. Each set has four pictures in it.

(2) Look at each of the four pictures in each set very carefully and tell me which one you like best.

(3) Then tell me which one you like second best.

(4) Then tell me which one you like third best.

The pictures in each set were not placed in any particular order. They were lined up across a table and the pupil pointed to the picture of his choice. None of the pupils tested made any corrections in their choices, but occasionally a pupil would hesitate. For the most part, however, choices were made without undue hesitation.

The choices in the order in which they were selected were then recorded on a form for recording pupil choices. Each pupil was given a number, and the pupil's sex, IQ, and socio-economic group were also recorded on the individual form. (See Appendix D.)

Treatment of Raw Data

When each pupil at the three schools had been tested, the results were tabulated. The individual results of the testing of the ninety subjects used in the study are recorded in Appendix H for examination. The raw data tabulation was then analyzed statistically in order to test the hypotheses of the study. The analysis is presented and discussed in Chapter III.

CHAPTER III

ANALYSIS OF THE DATA

This study was conducted to determine whether or not a particular art style is preferred by second grade pupils when they are given a choice of four art styles of illustrations used in primary reading textbooks. The experiment was designed specifically to test second grade pupil preferences for a particular art style and the relationships of sex, intelligence, and socio-economic status to pupil preference.

The basic data used to make the statistical evaluation of second grade pupil preferences were pupil responses to four sets of pictures, all taken from widely used basal readers. These responses were recorded and tabulated for each subject. (See Table 18, Appendix H.) The Chi square test for independence was used to test the differences in pupil preferences for art style in the following ways: (1) across the high, average, and low intelligence groups; (2) the sex differences in pupil preference for art style; and (3) differences in second grade pupil preference for art style across the upper, middle, and lower socio-economic groups. The Mann-Whitney U test was used to test the differences in pupil preferences in the following ways: (1) the range of significance between children with high intelligence and those with average intelligence; (2) between children with high intelligence and those with low intelligence;

(3) between children with average intelligence and those with low intelligence; (4) between children in the upper socio-economic group and those in the middle socio-economic group; (5) between those in the upper socio-economic group and those in the lower socio-economic group; (6) between those in the middle socio-economic group and those in the lower socio-economic group; and (7) between the sexes. The Chi square Goodness of Fit test was used to determine the overall pupil preference for a particular art style.

Analysis of Data

The Chi square Goodness of Fit test was used to test hypothesis 1 which states: There is a statistically significant preference by second grade children for the realistic art style used in the illustrations of basal readers. Using the X^2 test for significance, realistic art styles were preferred at a X^2 of 594.3. Muted realistic art styles were preferred at a X^2 of 499.6. A cross check of first choice of realistic art style showed a X^2 of 591.6. A cross check of second choice of muted realistic art style showed muted realistic preferred with a X^2 of 501.8. This is highly significant beyond the .001 level of significance with 3 degrees of freedom. Therefore, hypothesis 1 was accepted as stated. (See Table 12, Appendix G.)

A Chi square test for independece was used to test null hypothesis 2 which states: There is no statistically significant difference in pupil preferences for art style across the high, average, and low intelligence groups in second grade

children. The range of significance for X^2 was from 10.586 to 21.608. Realistic, semi-abstract, and cartoon art styles were significant at or above the .05 level of significance with 6 degrees of freedom. Therefore, for the realistic, semi-abstract, and cartoon art styles the null hypothesis 2 was rejected. (See Table 13, Appendix G.)

The Mann-Whitney U test was used to test null hypothesis 3 which states: There is no statistically significant differences in second grade pupil preferences for art style between children with above average intelligence and those with average intelligence. The range of significance for U scores was -2.511 to 3.867. The most significant Z was a level of significance of .013. Realistic and semi-abstract art styles were significant at or above the .05 level of significance. Therefore, null hypothesis 3 for realistic and semi-abstract art styles was rejected. (See Table 14, Appendix G.)

The Mann-Whitney U test was used to test null hypothesis 4 which states: There is no statistically significant difference in second grade pupil preferences for art styles between children with high intelligence and those with low intelligence. The range of significance with U scores was -1.152 to 1.522. The most significant Z was a level of significance of .121. None of the art styles was significant at the .05 level of significance. Therefore, the null hypothesis 4 was accepted. (See Table 14, Appendix G.)

The Mann-Whitney U test was used to test null hypothesis 5 which states: There is no statistically significant difference

in second grade pupil preferences for art styles between children with average intelligence and those with low intelligence. The range of significance for U scores was -2.232 to 1.798. The most significant Z was a level of significance of .025. Semi-abstract art styles were significant at or above the .05 level of significance. Therefore, the null hypothesis 5 was rejected for the semi-abstract style. (See Table 14, Appendix G.)

The Chi square test of independence was used to test null hypothesis 6 which states: There is no statistically significance sex difference in second grade pupil preference for art style. The range of significance for X^2 was from 3.852 to 8.124. The muted realistic art style was significant at or above the .05 level of significance with 3 degrees of freedom. Therefore, null hypothesis 6 was accepted for muted realistic art style. (See Table 13, Appendix G.)

In support of the Chi square test of independence, a Mann-Whitney U test was completed for each art style to determine whether or not any significant sex differences exist. The most highly significant U was for the semi-abstract art style where the Z was 1.315 with a significance level of .095. This is not significant at the .05 level of significance. Therefore, it was assumed that there were no statistically significant sex differences in second grade pupil preferences for art styles. (See Table 15, Appendix G.)

A Chi square test for independence was used to test null hypothesis 7 which states: There is no statistically significant

difference in second grade pupil preferences for art style across the upper, middle, and lower socio-economic groups. The range of significance for X^2 was from 17.744 to 42.31. All of these are significant at or above the .05 level of significance with 6 degrees of freedom. Therefore, null hypothesis 7 was rejected. (See Table 13, Appendix G.)

The Mann-Whitney U test was used to test null hypothesis 8 which states: There is no statistically significant difference in second grade pupil preferences for art style between children in the upper socio-economic group and those in the middle socio-economic group. The range of significance for U scores was from -.850 to 1.76. The most significant Z was a level of significance of .077. Therefore, the null hypothesis 8 was accepted at the .05 level of significance. (See Table 16, Appendix G.)

The Mann-Whitney U test was used to test null hypothesis 9 which states: There is no statistically significant difference in second grade pupil preferences for art styles between children in the upper socio-economic group and those in the lower socio-economic group. The range of significance for U scores was -2.69 to 3.511. The most significant Z was a level of significance of $.0^346$. Therefore, the null hypothesis 9 was rejected at or above the .05 level of significance for realistic, semi-abstract, and cartoon art styles. (See Table 16, Appendix G.)

The Mann-Whitney U test was used to test null hypothesis 10 which states: There is no statistically significant difference

in second grade pupil preferences for art style between children in the middle socio-economic group and those in the lower socio-economic group. The range of significance for U scores was -2.695 to 4.143. The most significant Z was a level of significance of $.0^{4}4$. Therefore, the null hypothesis 10 was rejected at or above the .05 level of significance for realistic, muted realistic, and cartoon styles. (See Table 16, Appendix G.)

Discussion of Data

When the subjects used in this experiment were asked to select the art style they preferred, they overwhelmingly selected realistic. Since the 90 subjects were given four art styles from which to choose the one they preferred, there were 360 possible choices. The expected frequency of each choice was 90 in each category. The raw data disclosed that the subjects chose the realistic art style 289 times. Thirty choices fell under the muted realistic art style with 17 and 24 under semi-abstract and cartoon art styles, respectively. It was therefore concluded that second grade children prefer realistic art over any other form of art taken from basal readers and used in the instrument for this study.

The X^2 test for independence was used to test the overall differences in pupil preferences for art style in relationship to the socio-economic classes of the subjects. This test revealed an .01 level of significance. The

analysis of the component elements through the use of the Mann-Whitney U test suggested that the difference which occurred can be attributed to the lower socio-economic sample tested. There was no difference in the upper and middle ($p = .229$), but the lower class was significantly different from both the upper ($p = .0038$) and the middle ($p = .028$).

The X^2 test for independence was also used to test the overall sex differences in second grade pupil preference for art style. In support of the X^2 test, a Mann-Whitney U test was completed. There were no sex differences found in order of choice or preferences for different art styles. This indicated that by holding the IQ and the socio-economic classes constant, there were no differences in picture preferences between the sexes in second grade.

The X^2 test for independence was used to test the overall differences in pupil preference for art style in relationship to the IQ classes of all subjects. This test revealed that the realistic, semi-abstract, and cartoon art styles were significantly different at the .05 level, and semi-abstract and cartoon were significantly different at the .01 level. The analysis of the component elements through the use of the Mann-Whitney U test suggested that the greatest differences occurred on the semi-abstract art style where the average IQ group scored significantly lower than either the high or low intelligence groups. There were indications which suggested that the average intelligence

group also was significantly different from the high intelligence group for realistic art style and was nearly significant with a $p = .071$ between the average and low intelligence groups.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was designed to determine the type of art preferred by second grade pupils when they were given a choice of the four major art styles of illustrations used in primary reading textbooks. A subproblem was the determination of the relationships of sex, intelligence, and socio-economic status to pupil preferences. The subjects were ninety second grade pupils from nine classrooms in the Midwest City, Oklahoma, elementary schools. All pupils enrolled in these classes and selected as subjects were English speaking Caucasian children. One-third of the subjects from each school was of high intelligence; one-third was of average intelligence; one-third was of low intelligence. One-half of each subgroup based on intelligence was boys; one-half was girls. The pupils from one school were from the upper socio-economic level; the pupils from one school were from the middle socio-economic level; the pupils from one school were from the lower socio-economic level.

Thus, the variables of sex, intelligence, and socio-economic level were controlled.

All subjects had been administered the California Short-Form Test of Mental Maturity. These tests were checked and pupils classified according to high, average, and low intelligence. Records of all subjects were checked and socio-economic status of each subject was determined through the use of Warner's Index of Status Characteristics which considers these four characteristics: (1) occupation of the subject's father or other person serving as head of the family, (2) source of income, (3) house type, and (4) dwelling area.

An instrument consisting of four sets containing four pictures each was constructed for use in determining pupil preference for art style. Set I depicted people in real life situations; Set II depicted animals in real life situations; Set III depicted people in fantasy situations; Set IV depicted animals in fantasy situations. Each set contained one illustration each of realistic, muted realistic, semi-abstract, and cartoon art as defined in Chapter I of this paper. The illustrations selected were parallel in content and exemplified a pure form of the art in order to minimize extraneous factors that might be involved in pupil choice. All illustrations were in four-part color. Tests of validity and reliability as described in Chapter II were used to test the instrument.

The primary statistical treatment employed to evaluate

the data obtained for this study was a Chi square test for independence, a Chi square Goodness of Fit test, and the Mann-Whitney U test. The findings which resulted from the evaluation are summarized below. Each statement corresponds in number to a hypothesis in the study.

1. There was a statistically significant preference by second grade children for the realistic art style used in the illustrations of basal readers.

2. There was a statistically significant difference for the realistic, semi-abstract, and cartoon art styles among the high, average, and low intelligence groups in second grade children.

3. There was a statistically significant difference in second grade pupil preferences for realistic and semi-abstract art styles between children with high intelligence and those with average intelligence.

4. There was no statistically significant difference in second grade pupil preferences for art styles between children with high intelligence and those with low intelligence.

5. There was no statistically significant difference in second grade pupil preferences for realistic, muted realistic, and cartoon art styles between children with average intelligence and those with low intelligence; however, there was a significant difference in the semi-abstract art style.

6. There was no statistically significant sex difference in second grade pupil preferences for art styles.

7. There was a statistically significant difference in second grade pupil preferences for art style among the upper, middle and lower socio-economic groups.

8. There was no statistically significant difference in second grade pupil preferences for art style between children in the upper socio-economic group and those in the middle socio-economic group.

9. There was a statistically significant difference in second grade pupil preferences for realistic, semi-abstract, and cartoon art styles between children in the upper socio-economic group and those in the lower socio-economic group.

10. There was a statistically significant difference in second grade pupil preferences for realistic, muted realistic, and cartoon art styles between children in the middle socio-economic group and those in the lower socio-economic group.

Conclusions

On the basis of the results obtained in this study of the type of art preferred by second grade pupils when they were given a choice of four art styles of illustrations used in primary reading textbooks, certain conclusions were warranted:

1. Second grade children are highly consistent in their rating of preferences for art style used in basal readers.

2. Second grade children rate realistic art, regardless of the picture content, as an overwhelming first choice.

3. Second grade children rate muted-realistic art, regardless of the picture content, as an overwhelming second choice.

4. Intelligence and socio-economic status influence second grade children's rating of cartoon and semi-abstract art styles only. Although the variables of intelligence and socio-economic level may influence the third and fourth choices of pupils, they have no effect on first and second choices.

Recommendations

The findings of this study help to substantiate much of what is currently known and believed about art styles in children's books. On the other hand, they repudiate many of the hypotheses advanced by people concerned with the publication of children's books. From the findings of this study, it seems justifiable to recommend the following:

1. Until more research in this area is done, realistic art should be used in second grade basal readers.

2. A replication of this study should be made in an attempt to substantiate the findings herein.

3. Parallel studies should be conducted with other age groups.

4. Similar studies should be conducted using illustrations from trade books and textbooks other than basal readers.

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APPENDIX A

QUESTIONNAIRE COMPLETED ON EACH SUBJECT

SCALES FOR RATING STATUS CHARACTERISTICS

REVISED SCALE FOR RATING OCCUPATION

SCALE FOR CONVERTING THE NUMERICAL INDEX OF STATUS CHARACTERISTICS TO SOCIAL-CLASS EQUIVALENTS

QUESTIONNAIRE COMPLETED ON EACH SUBJECT

Name _____ Sex B G Name of School _____

Teacher's Name _____ Father's Occupation _____

Mother's Occupation _____ Guardian's Occupation _____

1. Check source of income.

___ Inherited wealth ___ Earned wealth ___ Profits--Fees

___ Salary on monthly or yearly basis ___ Wages on daily or hourly basis ___ Private relief ___ Public relief or non-respectable income.

2. Check the type of house in which subject lives.

___ Excellent ___ Very good ___ Good ___ Average

___ Fair ___ Poor ___ Very poor

3. Check the one that best describes the dwelling area in which the subject lives.

___ Very exclusive ___ High ___ Above average

___ Average ___ Below average ___ Low ___ Very low

4. Check the one that best describes the educational level of parents or guardian.

___ College ___ High School ___ Elementary School

___ Trade

TABLE 5

SCALES FOR MAKING PRIMARY RATINGS OF FOUR STATUS CHARACTERISTICS[a]

Status Characteristic and Rating	Definition of the Ratings
Occupation	See Table 6
Source of Income	
1	Inherited wealth
2	Earned wealth
3	Profits and fees
4	Salary on monthly or yearly basis
5	Wages on daily or hourly basis
6	Private relief
7	Public relief and non-respectable income
House Type	
1	Excellent houses
2	Very good houses
3	Good houses
4	Average houses
5	Fair houses
6	Poor houses
7	Very poor houses
Dwelling Area	
1	Very exclusive
2	High; the better suburbs and apartment house areas, houses with spacious yards, etc.
3	Above average; areas all residential, larger than average space around houses; apartment areas in good condition, etc.
4	Average; residential neighborhoods, no deterioration in the area

TABLE 5--Continued

Status Characteristic and Rating	Definition of the Ratings
Dwelling Area	
5	Below average; area not quite holding its own, beginning to deteriorate, business entering, etc.
6	Low; considerable deteriorated, run-down and semi-slum
7	Very low; slum

[a]This scale was used by the permission of W. Lloyd Warner, University Professor of Social Research, Michigan State University, East Lansing, Michigan. For a more extended description of these scales and qualifications as to their use, see: W. Lloyd Warner, Marchia Meeker, and Kenneth Eells, Social Class in America: Manual of Procedure for the Measurement of Social Status (Harper Torchbook ed.; New York: Harper & Brothers, Publishers, 1960), pp. 121-158.

TABLE 6

REVISED SCALE FOR RATING OCCUPATION[a]

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks and Kindred Workers, Etc.	Manual Workers	Protective and Service Workers	Farmers
1	Lawyers, doctors, dentists, engineers, judges, high school superintendents, veterinarians, ministers (graduated from divinity school) chemists, etc. with post-graduate training, architects	Businesses valued at $75,000 and over	Regional and divisional managers of large financial and industrial enterprises	Certified Public Accountants			Gentlemen Farmers
2	High-school teachers, trained nurses, chiropodists, chiropractors, undertakers, ministers (some training), newspaper editors, librarians (graduate)	Businesses valued at $20,000 to $75,000	Assistant managers and office department managers of large businesses, assistants to executives, etc.	Accountants, salesmen of real estate, of insurance, post-masters			Large farm owners, farm owners

TABLE 6--Continued

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks and Kindred Workers, Etc.	Manual Workers	Protective and Service Workers	Farmers
3	Social workers, grade-school teachers, optometrists, librarians (not graduate), undertaker's assistants, ministers (no training)	Businesses Valued at $5,000 to $20,000	All minor officials of businesses	Auto salesmen, bank clerks and cashiers, postal clerks, secretaries to officials, supervisors of railroad, telephone, etc, justices of the peace	Contractors		
4		Businesses valued at $2,000 to $5,000		Stenographers, bookkeepers, rural mail clerks, railroad agents, sales people in dry goods store, etc.	Factory foremen, electricians, plumbers, carpenters, watchmakers (own business)	Dry cleaners, butchers, sheriffs, railroad engineers and conductors	

TABLE 6--Continued

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks and Kindred Workers, Etc.	Manual Workers	Protective and Service Workers	Farmers
5		Businesses valued at $500 to $2,000		Dime store clerks, hardware salesmen, beauty operators, telephone operators	Carpenters, plumbers, electricians (apprentice), timekeeper, linemen, telephone or telegraph, radio repairmen, medium-skill workers	Barbers, firemen, butcher's apprentice, practical nurses, policemen, seamstresses, cooks in restaurant, bartender	Tenant farmers
6		Businesses valued at less than $500			Moulders, semi-skilled workers, assistant to carpenter, etc.	Baggage men, night policemen and watchmen, taxi and truck drivers, gas station attendants, waitresses in restaurant	Small tenant farmers

TABLE 6--Continued

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks and Kindred Workers, Etc.	Manual Workers	Protective and Service Workers	Farmers
7					Heavy labor, migrant work, odd-job men, miners	Janitors, scrubwomen, newsboys	Migrant farm laborers

[a]This scale was used by permission of W. Lloyd Warner. It may be found in Social Class in America, Ibid., pp. 140-141.

TABLE 7

SCALE FOR CONVERTING THE NUMERICAL INDEX OF STATUS CHARACTERISTICS TO SOCIAL-CLASS EQUIVALENTS[a]

Range Weighted Total of Ratings	Social-Class Equivalents
12 - 17	Upper Class
18 - 22	Upper Class probably, with some possibility of Upper-Middle Class
23 - 24	Indeterminate: either Upper or Upper-Middle Class
25 - 33	Upper-Middle Class
34 - 37	Indeterminate: either Upper-Middle or Lower-Middle Class
38 - 50	Lower-Middle Class
51 - 53	Indeterminate: either Lower-Middle or Upper-Lower Class
54 - 62	Upper-Lower Class
63 - 66	Indeterminate: either Upper-Lower or Lower-Lower Class
67 - 69	Lower-Lower Class probably, with some possibility of Upper-Lower Class
70 - 84	Lower-Lower Class

[a]This scale was used with the permission of W. Lloyd Warner, University Professor of Social Research, Michigan State University, East Lansing, Michigan and senior author of Social Class in America, Ibid., p. 127.

APPENDIX B

DISTRIBUTION OF SUBJECTS USED IN THE STUDY

TABLE 8

DISTRIBUTION OF SUBJECTS USED IN THE STUDY

Socio-Economic Status	IQ	Sex	Number	Total
Upper	High	Boys	5	
		Girls	5	
	Average	Boys	5	
		Girls	5	
	Low	Boys	5	
		Girls	5	30
Middle	High	Boys	5	
		Girls	5	
	Average	Boys	5	
		Girls	5	
	Low	Boys	5	
		Girls	5	30
Lower	High	Boys	5	
		Girls	5	
	Average	Boys	5	
		Girls	5	
	Low	Boys	5	
		Girls	5	30
TOTAL NUMBER OF SUBJECTS USED				90

Subjects used in the study were randomly selected from all pupils falling into any one classification.

APPENDIX C

LIST OF ILLUSTRATIONS USED IN THE INSTRUMENT

PICTURES USED IN INSTRUMENT

Set I. People in Real Life Situations.

Realistic. Odille Ousley and David H. Russell. My Little Green Story Book. Boston: Ginn and Co., 1966, p. 54.

Muted Realistic. Bill Martin, Jr. Sounds of the Storyteller. New York: Holt, Rinehart and Winston, Inc., 1966, p. 232.

Semi-Abstract. Bill Martin, Jr. Sounds of the Storyteller. New York: Holt, Rinehart and Winston, Inc., 1966, p. 116.

Cartoon. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Sunny and Gay. New York: Bobbs-Merrill Co., Inc., 1961, p. 155.

Set 2. Animals in Real Life Situations.

Realistic. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Fun All Around. New York: Bobbs-Merrill Co., Inc., 1961, p. 55.

Muted Realistic. Helen M. Robinson, Marion Monroe, A. Sterl Artley, and Charlotte S. Huck. More Roads to Follow. Dallas: Scott, Foresman and Company, 1964, p. 8.

Semi-Abstract. Albert J. Harris and Mae Knight Clark. Lands of Pleasure. New York: The Macmillan Co., 1966, p. 151.

Cartoon. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Sunny and Gay. New York: Bobbs-Merrill Company, Inc., 1961, p. 96.

Set 3. People in Fantasy Situations.

Realistic. Helen M. Robinson, Marion Monroe, A. Sterl Artley, and Charlotte S. Huck. More Roads to Follow. Dallas: Scott, Foresman and Company, 1964, p. 191.

Muted Realistic. Albert J. Harris and Mae Knight Clark. Enchanted Gates. New York: The Macmillan Co., 1965, p. 200.

Semi-Abstract. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Sunny and Gay. New York: Bobbs-Merrill Company, Inc., 1961, p. 136.

Cartoon. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Sunny and Gay. New York: Bobbs-Merrill Company, Inc., 1961, p. 102.

Set 4. Animals in Fantasy Situations.

Realistic. Bill Martin, Jr. Sounds of a Storyteller. New York: Holt, Rinehart and Winston, Inc., 1966, p. 154.

Muted Realistic. A. J. Harris and Mae Knight Clark. Shining Bridges. New York: The Macmillan Co., 1965, p. 131.

Semi-Abstract. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Sunny and Gay. New York: Bobbs-Merrill, Inc., 1961, p. 97.

Cartoon. Nila B. Smith, Hazel C. Hart, and Clara Belle Baker. Sunny and Gay. New York: Bobbs-Merrill, Inc., 1961, p. 97.

APPENDIX D

FORM USED FOR RECORDING PUPIL CHOICES FOR ART STYLES

FORM FOR RECORDING PUPIL CHOICES

Number: _____

Sex: M F

IQ L A H

S-E Group: L M U

ORDER OF CHOICES

People-Real Life	Animal-Real Life	People-Fantasy	Animal-Fantasy
Set 1	Set 2	Set 3	Set 4
R ____	R ____	R ____	R ____
MR ____	MR ____	MR ____	MR ____
SA ____	SA ____	SA ____	SA ____
C ____	C ____	C ____	C ____

APPENDIX E

JUDGES' RATINGS OF PICTURES

TABLE 9

JUDGES' RATING SCALE FOR ILLUSTRATIONS

Judge No.	Set No.	Picture No.	Excellent	Highly Representative	Representative	Suitable	Unrepresentative
			1	2	3	4	5
1	1 - People in Real Life Situations	1 - R	x				
		2 - MR		x			
		3 - SA	x				
		4 - C			x		
	2 - Animals in Real Life Situations	1 - R	x				
		2 - MR	x				
		3 - SA	x				
		4 - C		x			
	3 - People in Fantasy Situations	1 - R		x			
		2 - MR	x				
		3 - SA		x			
		4 - C	x				
	4 - Animals in Fantasy Situations	1 - R		x			
		2 - MR		x			
		3 - SA			x		
		4 - C		x			
2	1 - People in Real Life Situations	1 - R	x				
		2 - MR	x				
		3 - SA		x			
		4 - C		x			
	2 - Animals in Real Life Situations	1 - R	x				
		2 - MR	x				
		3 - SA			x		
		4 - C	x				

TABLE 9--Continued

Judge No.	Set No.	Picture No.	Excellent	Highly Representative	Representative	Suitable	Unrepresentative
			1	2	3	4	5
	3 - People in Fantasy Situations	1 - R	x				
		2 - MR	x				
		3 - SA	x				
		4 - C	x				
	4 - Animals in Fantasy Situations	1 - R	x				
		2 - MR		x			
		3 - SA			x		
		4 - C	x				
3	1 - People in Real Life Situations	1 - R	x				
		2 - MR	x				
		3 - SA		x			
		4 - C	x				
	2 - Animals in Real Life Situations	1 - R	x				
		2 - MR	x				
		3 - SA	x				
		4 - C	x				
	3 - People in Fantasy Situations	1 - R	x				
		2 - MR	x				
		3 - SA	x				
		4 - C	x				
	4 - Animals in Fantasy Situations	1 - R	x				
		2 - MR		x			
		3 - SA		x			
		4 - C	x				

TABLE 9--Continued

Judge No.	Set No.	Picture No.	Excellent	Highly Representative	Representative	Suitable	Unrepresentative
			1	2	3	4	5
4	1 - People in Real Life Situations	1 - R	x				
		2 - MR			x		
		3 - SA			x		
		4 - C	x				
	2 - Animals in Real Life Situations	1 - R	x				
		2 - MR		x			
		3 - SA	x				
		4 - C	x				
	3 - People in Fantasy Situations	1 - R		x			
		2 - MR	x				
		3 - SA		x			
		4 - C	x				
	4 - Animals in Fantasy Situations	1 - R	x				
		2 - MR		x			
		3 - SA	x				
		4 - C	x				

TABLE 10

JUDGES' RATINGS OF PICTURES BY RANK[a]

Judges Ratings of Pictures	M[b]	P	p	p-P	$\frac{PQ}{N}$	$\frac{p-P}{\frac{PQ}{N}}$	Probability for Z occurring (# rejection region)
1	41	.2	.64	.44	.05	8.8	$0.0^{13}51482$
2	17	.2	.266	.066	.05	1.32	0.093425
3	6	.2	.094	-.106	.05	-2.12	0.016997
4	0	.2	.000	-.2000	.05	-4.00	$0.0^{4}3562$
5	0	.2	.000	-.2000	.05	-4.00	$0.0^{4}3562$

[a]H. M. Walker and Joseph Lev, Statistical Inference (New York: Holt, Rinehart, and Winston, 1953), p. 37.

[b]N = 64
M = number of successful choices
P = probability by chance
p = observed probability = M/N (total possible)
$\frac{PQ}{N}$ = sd. of the probability distribution

$$Z = \frac{p-P}{\sqrt{\frac{PQ}{N}}}$$

APPENDIX F

T AND Z SCORES ON TEST OF RELIABILITY

TABLE 11

T AND Z SCORES ON TEST OF RELIABILITY

Art Style	T	Z
Set 1. People in Real Life Situations		
Realistic	1	6.667
Muted Realistic	1	6.667
Semi-Abstract	.8868	5.912
Cartoon	.8152	5.435
Set 2. Animals in Real Life Situations		
Realistic	.9015	6.01
Muted Realistic	.9917	6.611
Semi-Abstract	.8085	5.39
Cartoon	.7564	5.043
Set 3. People in Fantasy Situations		
Realistic	.9967	6.645
Muted Realistic	.9673	6.4487
Semi-Abstract	.9819	5.546
Cartoon	.8298	5.532
Set 4. Animals in Fantasy Situations		
Realistic	1	6.667
Muted Realistic	.9994	6.663
Semi-Abstract	1	6.667
Cartoon	.9935	6.623

TABLE 12

X^2'S FOR TOTALS ALL SUBJECTS--GOODNESS OF FIT

Picture Class		Choices				X^2
		1	2	3	4	
Realistic	O	289	45	11	15	440 + 22.5 + 69.3 + 62.5
		199	-45	-79	-75	X^2 = 594.3
	E	90	90	90	90	
Muted Realistic	O	30	273	41	16	40 + 372.1 + 26.7 + 60.8
		-60	183	-49	-74	X^2 = 499.6
	E	90	90	90	90	
Semi-Abstract	O	17	13	186	144	59.2 + 65.9 + 102.4 + 32.4
		-73	-77	96	54	X^2 = 259.9
	E	90	90	90	90	
Cartoon	O	24	29	124	183	48.4 + 41.3 + 12.8 + 96.1
		-66	-61	34	93	X^2 = 198.6
	E	90	90	90	90	
		440	22.5	69.3	62.5	
		40	372.1	26.7	60.8	
		59.2	65.9	102.4	32.4	
		48.4	41.3	12.8	96.1	
		591.6	501.8	211.2	251.8	

Df. = 3, N = 360, $X^2_{.05}$ = 7.82, $X^2_{.01}$ = 11.34, $X^2_{.001}$ = 16.27

TABLE 13

X^2'S FOR ALL GROUPS BY ART STYLES

Group	Art Style	X^2
Socio-Economic	Realistic	17.744
	Muted Realistic	25.996
	Semi-Abstract	33.771
	Cartoon	26.169
Sex Differences	Realistic	3.852
	Muted Realistic	8.124
	Semi-Abstract	6.546
	Cartoon	6.512
Intelligence	Realistic	15.059
	Muted Realistic	10.586
	Semi-Abstract	21.608
	Cartoon	20.348

Df. = 3, N = 360, $X^2_{.05}$ = 7.82, $X^2_{.01}$ = 11.34, $X^2_{.001}$ = 16.27

APPENDIX G

X^2'S AND Z AND U SCORES FOR ALL GROUPS

TABLE 14

Z AND U SCORES FOR INTELLIGENCE DIFFERENCES

IQ Ranks	Art Style	Z	p	U[1]
High and Low	Realistic	-.659	.5	6859.5
	Muted Realistic	-1.152	.121	6600
	Semi-Abstract	1.522	.128	8008
	Cartoon	.173	.128	7292
Average and Low	Realistic	1.798	.071	8143.5
	Muted Realistic	.230	.818	7321
	Semi-Abstract	-2.232	.025	6016.5
	Cartoon	.884	.378	7668
High and Average	Realistic	-2.511	.012	5882.5
	Muted Realistic	-1.329	.18	6500.5
	Semi-Abstract	3.867	$.0^{3}12$	9253
	Cartoon	-.850	.37	6750

TABLE 15

Z AND U SCORES FOR SEX DIFFERENCES

Sex	Art Style	Z	p	U^1
Male and Female	Realistic	.848	.19756	17012
	Muted Realistic	-1.156	.12302	15093
	Semi-Abstract	1.315	.095106	17482.5
	Cartoon	-.720	.23576	15499.5

TABLE 16

Z AND U SCORES FOR SOCIO-ECONOMIC DIFFERENCES

Classes	Art Style	Z	p	U^1
Upper and Lower	Realistic	-2.692	.007	5768.5
	Muted Realistic	-2.553	.011	5853.5
	Semi-Abstract	- .031	.976	7183.5
	Cartoon	3.511	$.0^346$	9058.5
Middle and Lower	Realistic	-1.907	.056	6198.5
	Muted Realistic	-2.695	.0068	5778.5
	Semi-Abstract	-1.496	.1336	6407
	Cartoon	4.143	$.0^44$	9387
Upper and Middle	Realistic	- .746	.458	6814.5
	Muted Realistic	.285	.778	7348
	Semi-Abstract	1.766	.077	8133
	Cartoon	- .850	.394	6751.5

APPENDIX H

RAW DATA FOR TEST OF RELIABILITY AND STATISTICAL ANALYSIS

TABLE 17

TEST-RETEST RAW DATA OF TWENTY-TWO PUPILS FOR THE RELIABILITY TEST OF THE INSTRUMENT

Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
1 Test	1	2	4	3	1	2	3	4	2	4	3	1	1	2	4	3
Retest	1	2	4	3	1	2	4	3	1	2	4	3	1	2	4	3
2 Test	2	1	4	3	1	2	4	3	1	2	3	4	1	2	4	3
Retest	2	1	4	3	1	2	4	3	1	2	4	3	1	2	4	3
3 Test	1	3	4	2	1	2	4	3	2	1	4	3	1	2	4	3
Retest	1	3	4	2	1	2	4	3	2	1	4	3	1	2	4	3
4 Test	1	2	3	4	1	2	4	3	1	4	3	2	1	2	3	4
Retest	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
5 Test	1	3	2	4	1	3	2	4	1	2	3	4	1	2	4	3
Retest	1	3	2	4	1	3	2	4	1	2	3	4	1	2	4	3
6 Test	2	3	4	1	3	4	1	2	4	3	1	2	4	3	2	1
Retest	2	3	1	4	3	4	1	2	4	3	1	2	4	3	1	2

TABLE 17--Continued

Pupil No.		People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
		R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
7	Test	1	2	3	4	1	2	4	3	1	3	2	4	1	2	4	3
	Retest	1	2	3	4	1	2	3	4	1	3	2	4	1	2	4	3
8	Test	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
	Retest	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
9	Test	2	1	4	3	2	1	3	4	1	2	3	4	1	2	4	3
	Retest	2	1	4	3	2	1	4	3	1	2	3	4	1	2	4	3
10	Test	1	2	4	3	1	2	4	3	2	1	4	3	1	2	4	3
	Retest	1	2	3	4	1	2	3	4	2	1	4	3	1	2	4	3
11	Test	1	2	3	4	1	2	3	4	1	2	4	3	1	2	3	4
	Retest	1	2	3	4	1	2	3	4	1	2	4	3	1	2	3	4
12	Test	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	Retest	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
13	Test	1	2	4	3	1	2	4	3	1	2	3	4	1	2	4	3
	Retest	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

TABLE 17--Continued

Pupil No.		People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
		R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
14	Test	1	2	3	4	1	2	4	3	1	2	4	3	1	2	3	4
	Retest	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
15	Test	1	2	4	3	1	2	4	3	1	2	3	4	1	2	3	4
	Retest	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
16	Test	1	2	4	3	1	2	4	3	2	1	4	3	3	4	1	2
	Retest	1	2	3	4	1	2	3	4	2	1	4	3	3	4	1	2
17	Test	4	3	1	2	4	3	1	2	3	4	2	1	3	4	1	2
	Retest	4	3	1	2	4	3	1	2	4	3	2	1	3	4	1	2
18	Test	1	2	4	3	1	2	4	3	1	4	2	3	1	3	4	2
	Retest	1	2	4	3	1	2	4	3	1	4	2	3	1	3	4	2
19	Test	1	2	4	3	1	3	2	4	1	4	2	3	1	2	3	4
	Retest	1	2	4	3	1	3	2	4	1	4	2	3	1	2	3	4
20	Test	1	4	2	3	1	2	4	3	2	1	3	4	1	3	2	4
	Retest	1	4	2	3	1	2	4	3	2	1	4	3	1	3	2	4

TABLE 17--Continued

Pupil No.		People-Real Life				Animals-Real Life				People-Fantasy				Animals-Fantasy			
		R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
21	Test	1	3	2	4	1	4	2	3	1	4	3	2	2	3	1	4
	Retest	1	3	2	4	1	3	2	4	1	4	3	2	2	3	1	4
22	Test	1	2	3	4	1	2	3	4	1	4	3	2	1	4	2	3
	Retest	1	2	3	4	1	2	3	4	1	4	3	2	1	4	2	3

TABLE 18

RAW DATA FOR THE SUBJECTS IN THE PRIMARY STUDY OF SECOND GRADE PUPIL PREFERENCES FOR ART STYLES IN BASAL READERS

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
Ridgewood	Upper	High	Boy 1	1	2	3	4	1	3	4	2	1	2	3	4	1	2	4	3
			2	1	2	3	4	1	2	3	4	1	2	3	4	1	2	4	3
			3	1	2	4	3	1	2	3	4	1	2	3	4	1	2	4	3
			4	1	2	3	4	2	1	3	4	1	3	4	2	1	2	3	4
			5	1	2	3	4	1	2	3	4	1	2	4	3	1	2	4	3
		Average	6	1	2	3	4	1	2	4	3	1	3	4	2	1	2	4	3
			7	1	2	3	4	2	1	3	4	2	1	3	4	1	2	3	4
			8	1	2	3	4	1	2	3	4	1	3	4	2	1	2	3	4
			9	1	2	3	4	1	2	4	3	1	2	4	3	4	2	3	1
			10	2	4	1	3	1	2	3	4	2	1	4	3	1	2	3	4
		Low	11	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
			12	1	2	4	3	1	2	3	4	1	2	3	4	1	2	3	4
			13	2	1	3	4	1	2	4	3	1	2	4	3	1	2	4	3
			14	1	2	4	3	1	2	3	4	1	2	3	4	1	2	4	3

TABLE 18--Continued

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
			15	1	2	4	3	1	2	4	3	1	2	4	3	1	2	3	4
		High	Girl 16	1	2	3	4	1	2	3	4	1	2	4	3	1	2	3	4
			17	1	2	4	3	1	2	3	4	1	2	3	4	1	2	4	3
			18	1	2	3	4	1	2	4	3	1	2	4	3	1	2	3	4
			19	1	2	4	3	1	2	4	3	2	1	3	4	1	2	4	3
			20	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
		Average	21	1	2	3	4	1	2	3	4	1	2	3	4	4	1	3	2
			22	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			23	1	2	3	4	2	3	1	4	1	2	3	4	1	2	3	4
			24	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			25	1	2	4	3	1	2	3	4	2	3	4	1	4	3	2	1
		Low	26	1	2	3	4	1	2	4	3	1	2	3	4	1	2	3	4
			27	1	2	3	4	1	2	4	3	1	2	3	4	1	2	4	3
			28	2	1	3	4	1	4	3	2	1	3	4	2	1	2	3	4

TABLE 18--Continued

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
			29	1	3	4	2	1	2	3	4	1	2	4	3	1	2	3	4
			30	2	1	4	3	1	2	3	4	1	2	4	3	1	2	4	3
Traub	Middle	High	Boy 31	1	4	3	2	1	3	2	4	1	2	3	4	1	2	3	4
			32	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			33	2	1	3	4	1	2	3	4	2	1	4	3	1	3	4	2
			34	1	2	4	3	2	1	4	3	1	2	3	4	4	2	3	1
			35	1	2	4	3	1	2	4	3	1	2	3	4	1	2	3	4
		Average	36	1	2	3	4	1	2	3	4	2	1	3	4	1	2	3	4
			37	1	3	2	4	4	3	1	2	2	1	3	4	1	2	3	4
			38	2	1	3	4	1	2	3	4	1	2	3	4	3	2	4	1
			39	3	2	4	1	2	1	3	4	3	2	4	1	4	3	1	2
			40	1	2	4	3	1	2	4	3	1	2	3	4	1	2	3	4
		Low	41	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
			42	1	2	3	4	2	1	4	3	1	2	4	3	1	2	3	4

TABLE 18--Continued

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
			43	1	2	4	3	1	2	4	3	1	2	4	3	1	2	3	4
			44	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
			45	1	2	3	4	1	2	4	3	1	2	4	3	2	1	3	4
		High	Girl 46	1	2	3	4	1	2	3	4	1	2	4	3	1	2	4	3
			47	1	2	3	4	1	2	4	3	1	2	3	4	1	2	4	3
			48	1	2	3	4	1	2	4	3	1	2	3	4	1	2	3	4
			49	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			50	1	2	3	4	1	2	3	4	1	2	4	3	1	2	3	4
		Average	51	1	4	3	2	1	2	3	4	1	2	3	4	1	2	3	4
			52	1	2	4	3	1	2	3	4	1	2	3	4	1	2	3	4
			53	2	1	4	3	1	2	3	4	1	2	4	3	1	2	3	4
			54	1	2	3	4	1	2	3	4	4	3	2	1	2	1	4	3
			55	1	2	3	4	1	2	3	4	1	2	3	4	1	2	4	3
		Low	56	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

TABLE 18--Continued

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
			57	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
			58	1	4	2	3	1	2	3	4	1	2	3	4	1	4	2	3
			59	1	2	3	4	3	1	4	2	1	2	3	4	1	2	3	4
			60	1	2	3	4	1	2	3	4	3	4	2	1	1	2	3	4
Barnes	Lower	High	Boy 61	1	2	3	4	1	2	4	3	1	2	4	3	1	2	4	3
			62	1	2	3	4	1	2	3	4	2	1	3	4	2	1	4	3
			63	1	2	4	3	1	2	3	4	1	2	4	3	3	4	2	1
			64	1	2	4	3	2	1	4	3	1	2	4	3	1	2	4	3
			65	1	2	4	3	1	2	4	3	1	2	4	3	1	2	4	3
		Average	66	1	2	3	4	1	2	4	3	1	2	3	4	2	3	4	1
			67	1	2	3	4	2	4	1	3	1	2	4	3	1	2	3	4
			68	2	1	3	4	1	2	3	4	4	3	1	2	2	3	4	1
			69	1	2	4	3	2	3	1	4	1	2	4	3	4	3	2	1
			70	1	2	4	3	1	2	3	4	4	3	1	2	1	2	3	4

TABLE 18--Continued

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
		Low	71	1	2	3	4	1	2	3	4	1	2	4	3	1	2	3	4
			72	1	2	3	4	1	3	4	2	2	1	3	4	1	2	3	4
			73	1	2	3	4	2	1	3	4	1	3	4	2	1	3	4	2
			74	1	2	4	3	4	2	1	3	1	3	4	2	2	3	1	4
			75	1	2	4	3	1	3	4	2	4	3	1	2	4	3	1	2
		High	Girl 76	1	2	3	4	1	2	4	3	1	2	4	3	2	4	3	1
			77	1	2	4	3	2	3	4	1	1	2	4	3	1	2	4	3
			78	1	2	3	4	1	2	4	3	1	2	4	3	3	2	4	1
			79	2	3	4	1	1	2	4	3	2	4	3	1	1	2	4	3
			80	1	2	4	3	1	2	4	3	1	2	4	3	1	2	4	3
		Average	81	1	2	3	4	1	2	3	4	1	2	3	4	3	4	2	1
			82	1	2	3	4	1	2	3	4	1	2	4	3	1	3	4	2
			83	2	4	1	3	2	1	3	4	1	2	4	3	2	3	4	1
			84	3	4	1	2	2	1	3	4	1	3	2	4	1	3	2	4

TABLE 18--Continued

School	Socio-Economic Class	IQ Rank	Pupil No.	People-Real Life				Animal-Real Life				People-Fantasy				Animal-Fantasy			
				R	MR	SA	C	R	MR	SA	C	R	MR	SA	C	R	MR	SA	C
			85	1	2	3	4	1	2	3	4	2	3	4	1	1	3	2	4
		Low	86	1	2	3	4	1	2	4	3	1	2	3	4	1	2	3	4
			87	3	4	1	2	1	2	4	3	1	2	3	4	4	3	2	1
			88	1	2	3	4	2	1	3	4	4	1	2	3	2	1	4	3
			89	1	2	3	4	3	4	1	2	1	2	4	3	1	2	4	3
			90	2	3	1	4	1	2	3	4	1	2	3	4	1	2	4	3