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ABSTRACT

Measurement of pupil attitudes can be influenced by the pupil's ability and motivation to read, particularly for those students whose ability is below average. To obtain a valid measure of sixth grade pupil attitudes as they related to Family Life education, the reading factor needed to be eliminated as much as possible. A test utilizing situational transparencies combined with a machine-scorable semantic differential instrument was devised. This method for measuring attitudes was tested on sixth grade pupils, checked by individual pupil interviews, and subjected to a series of factor analyses. The pupils responded favorably to the method used, and willingly indicated varying attitudes concerning the situations which were presented. (Author/CK)

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ATTITUDE MEASUREMENT OF PUPILS WITH VARYING READING ABILITIES SEMANTIC DIFFERENTIAL USING CONCEPTS PRESENTED BY TRANSPARANCIES

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ASSESSING ATTITUDES OF PUPILS WITH VARYING READING ABILITIES

SEMANTIC DIFFERENTIAL USING CONCEPTS PRESENTED BY TRANSPARENCIES

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Measurement of pupil attitudes can be influenced by the pupil's ability and motivation to read, particularly for those students whose ability is below average. To obtain a valid measure of sixth grade pupil attitudes as they related to Family Life education, the reading factor needed to be eliminated as much as possible. A test utilizing situational transparencies combined with a machine-scorable semantic differential instrument was devised. This method for measuring attitudes was tested on sixth grade pupils, checked by individual pupil interviews, and subjected to a series of factor analyses.

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OBJECTIVE

Measurement of pupil attitudes can be influenced by the pupil's ability and motivation to read. This is particularily true of those students whose ability is below average and who actively dislike reading any type material.

In order to obtain a valid measure of sixth grade pupil attitudes as they related to a course in Family Life education, it was important to eliminate the reading factor as much as possible. Therefore a test utilizing situational transparancies combined with a machine-scorable semantic differential instrument was devised. This method for measuring pupil attitudes was tested on pupils, checked by individual pupil interviews, and subject to a series of factor analyses.

TECHNIQUE

Nine action-type situations were drawn for use with an overhead projector in the classroom. Pictures involved situations or actions which related to the curriculum being taught in the Family Life instruction. (Appendix A) The two main emphases of the curriculum related to attitudes concerning the pupil's physical growth and development, and feelings about conflict situations which might involve the pupil and other people. Both positive and negative type situations were presented.

A machine-scorable semantic differential answer sheet containing nine adjective pairs was utilized. It included six evaluative adjectives (good-bad, happy-sad, wise-foolish, clean-dirty, kind-cruel, important-unimportant), two potency adjectives (strong-weak, brave-cowardly), and

one activity adjective pair (hot-cold)*. The answer sheet contained five boxes between each pair of adjectives enabling the pupil to respond on a five point scale. (Appendix B)

Pupils were instructed concerning the use of the machine-scorable answer sheet. After the use of the answer sheet was understood, a key concept word was presented to the pupils, spelled for them, and they were instructed to write or print it at the head of a column of adjectives. When the pupils had finished writing the word, the transparancy was shown on a screen and the situation was described in one or two simple sentences. Pupils were encouraged to place a mark in the five spaces between each of the nine adjective pairs as rapidly as possible. (Appendix C)

DATA SOURCE

Validation of the situations presented in the pictures was done with a class of sixth grade pupils who had completed the survey. Pupils were asked to describe what they saw in the pictures and encouraged to discuss the situations and offer several possible interpretations. Several minor changes in the pictures were recommended by the pupils. These were completed and the revised transparancies were tested in a like manner on another class of pupils.

Interviews with individual pupils were conducted to determine their understanding and use of the adjectives to describe the situations. At this time it appeared that the adjective pairs of "important-unimportant" and "hot-cold" were being given a variety of interpretations by the pupils. For all the other adjective pairs, pupils appeared very willing to use negative adjectives to describe the negative situations which were presented as well as the positive adjective to describe the favorable situations.

*Osgood, C.E.; Suci, G., and Tannenbaum, P.H. The Measurement of Meaning. Urbana, Illinois: University of Illinois Press, 1957.

Two factor analyses were run to determine the proper method for scoring the data. First the nine adjective pairs were factored. A score for each pupil (N=679) for each adjective pair was obtained by summing across the nine concepts. For the negative concepts, the scoring was reversed so the negative adjective received the high score.

From this analysis of the adjectives, one factor emerged which included seven of the nine adjective pairs. The two doubtful pairs of "important-unimportant", and "hot-cold" received very low weights and were therefore eliminated from further analysis. (Appendix D)

The second factor analysis involved the concepts. For this analysis each of the pupil's responses were summed using the seven valid adjectives for each of the nine concepts. The factor analysis of these concepts indicated there were two factors involving seven of the nine concepts. (Appendix E) The first factor related to the social situations and was titledSocial Adjustment. It included the following concepts:

-Children teasing an old lady;

-A boy peeking through a partially open window;

-A large boy fighting a small boy;

The second factor related to four of the concepts concerned with physical growth and development, titled Physical Growth, and included the following situations:

-A group of boys and girls of varying heights and weights;

-A boy and girl caring for a baby;

-Children running;

-A girl dreaming of a mother; a boy dreaming of a father.

The other two concepts received low weights on both factors and were therefore to be eliminated in the final scoring.

RESULTS

Thirteen classes of pupils, eight experimental, five control, were tested using this instrument. For the statistical analysis, the classroom was considered the unit of measuremtnt. Attitudes of pupils were summarized by sex and treatment group, and two attitude scores were obtained for the boys and girls in each classroom. Means, standard deviations and independent t-tests were run.

Pupil attitudes related to the group of three concepts on SOCIAL ADJUSTMENT were summarized and attitudes of experimental and control groups of boys and girls were compared. TABLE I presents these data:

TABLE I

Pupil Attitudes toward Social Adjustment Concepts

Treatment Group	Classes N	Boys $\bar{X}$	Boys SD	Girls $\bar{X}$	Girls SD	Total $\bar{X}$	Total SD
Experimental	8	3.9*	0.2	4.1*	0.1	4.0*	0.2
Control	5	3.7	0.3	4.1	0.2	3.9	0.3
Independent t-test		1.7 n.s.		0.7 n.s.		0.9 n.s.	

*Scale: 1 = Very negative; 3 = Neutral; 5 = Very positive.

No significant differences were found in attitudes of either boys or girls between the experimental and control classes in relation to attitudes toward SOCIAL ADJUSTMENT. In general all attitudes were quite positive with the attitudes of girls being more positive than those of the boys.

Pupil attitudes toward the four concepts related to PHYSICAL GROWTH are presented in TABLE II.

TABLE II

Pupil Attitudes toward Physical Growth Concepts

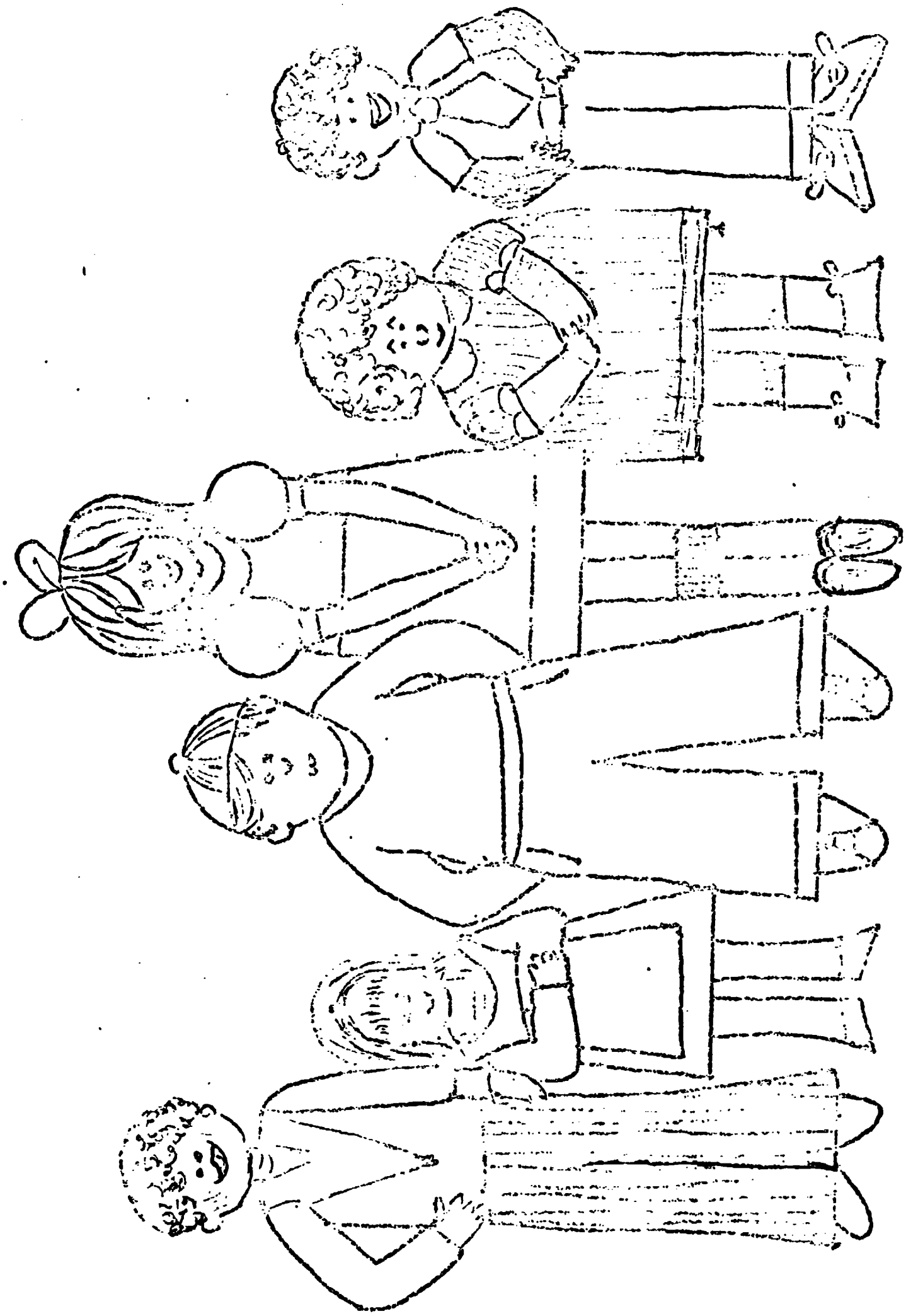
Treatment Group	Classes N	Boys $\bar{X}$	Boys SD	Girls $\bar{X}$	Girls SD	Total $\bar{X}$	Total SD
Experimental	8	3.8*	0.1	3.9*	0.2	3.9*	0.2
Control	5	3.6	0.1	3.9	0.3	3.7	0.3
Independent t-test		3.1 $p < .01$		0.4 n.s.		1.6 n.s.	

*Scale: 1 = Very negative; 3 = Neutral; 5 = Very positive.

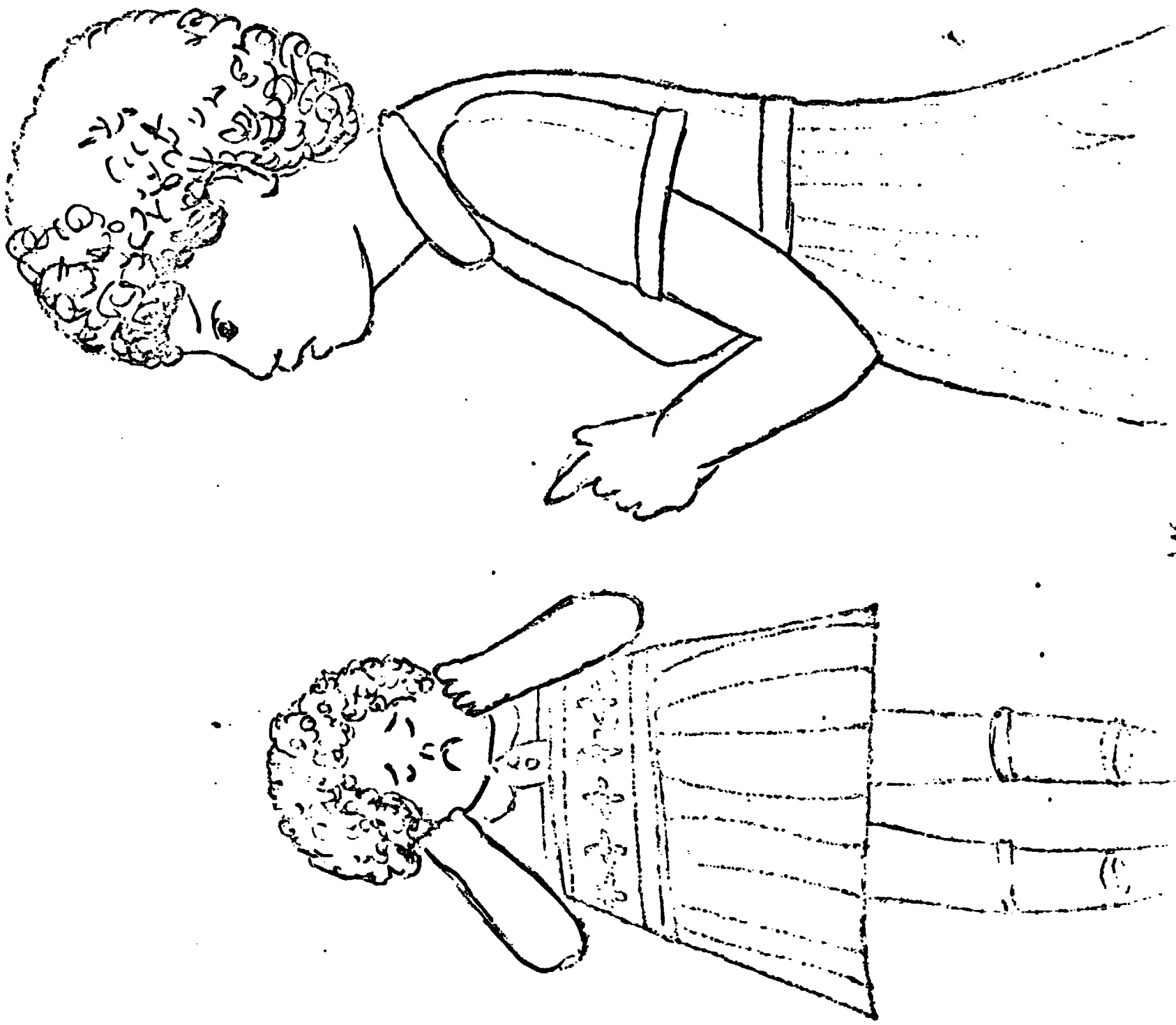
Data indicated there were significant differences in attitudes between boys in the experimental and control classes, with more positive attitudes being reported from the experimental classes. However there were no significant differences in attitudes of girls between the experimental and control classes.

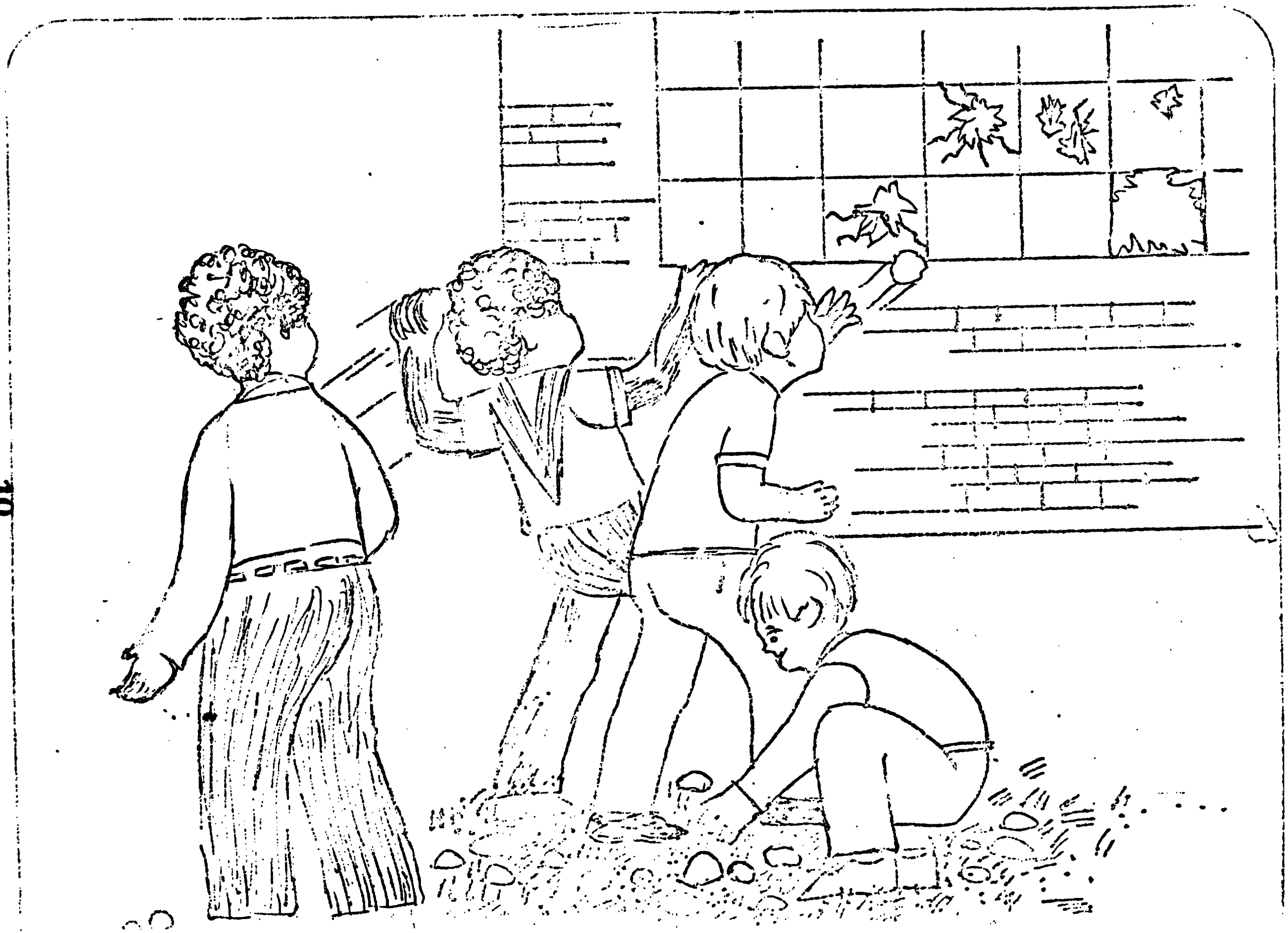
EDUCATIONAL IMPORTANCE

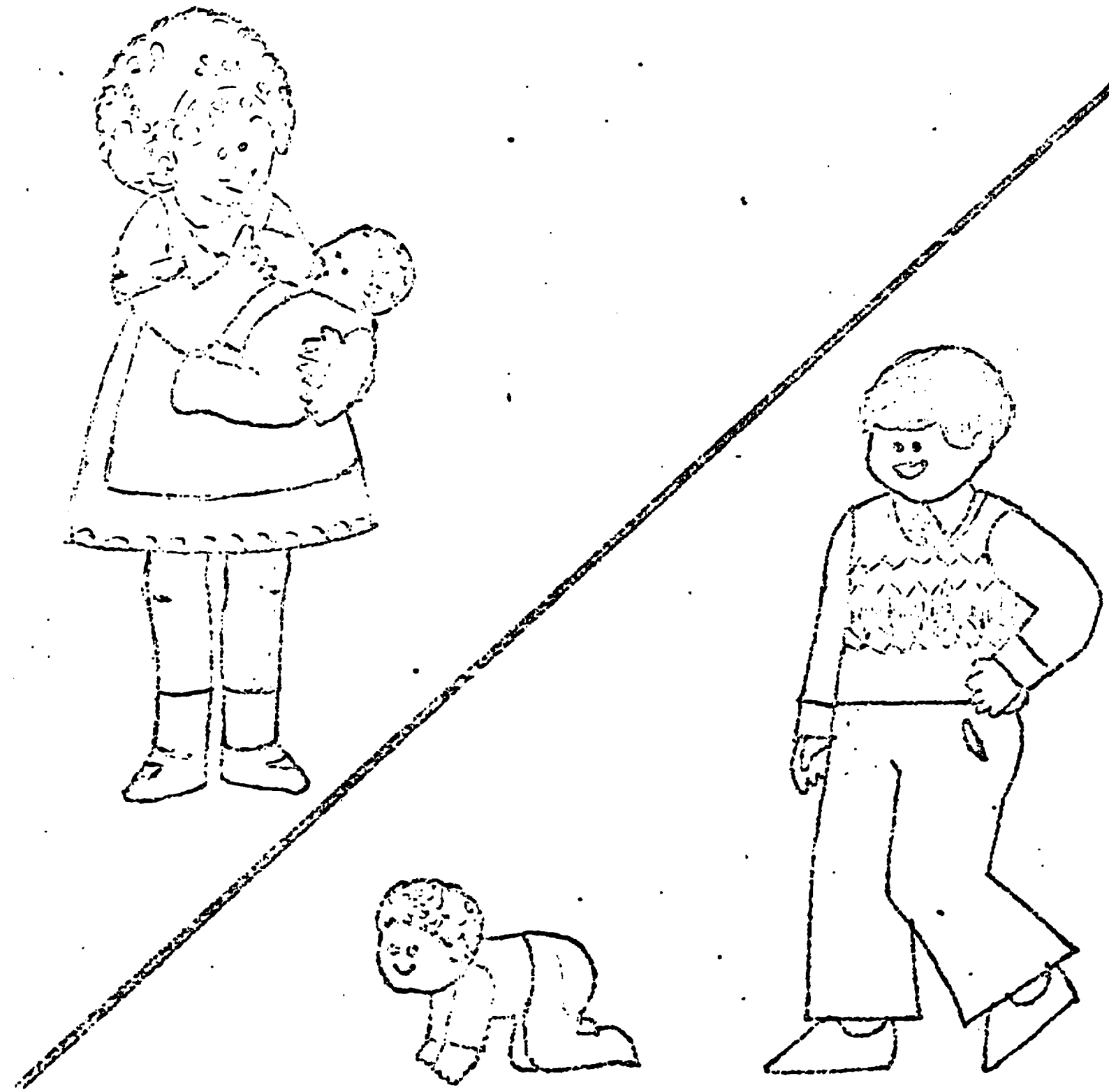
Method of measuring pupil attitudes which can be dissociated from the level of reading is of utmost importance in urban elementary schools. The technique of presenting situations through the use of overhead transparancies together with a semantic differential answer sheet for the pupil to record attitudes appears to have merit. Sixth grade pupils responded favorably to the method used, and willingly indicated varying attitudes concerning the situations which were presented.

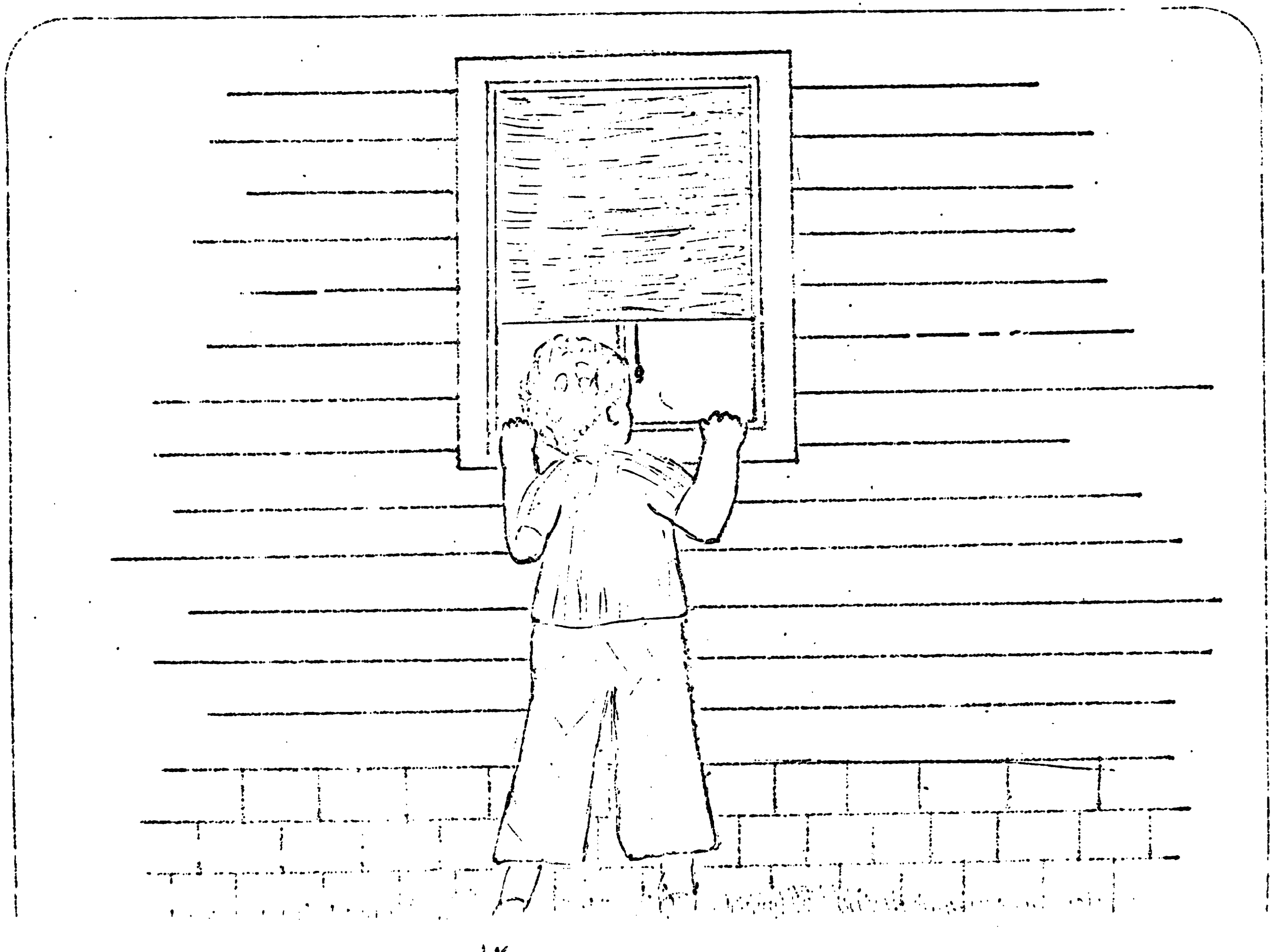


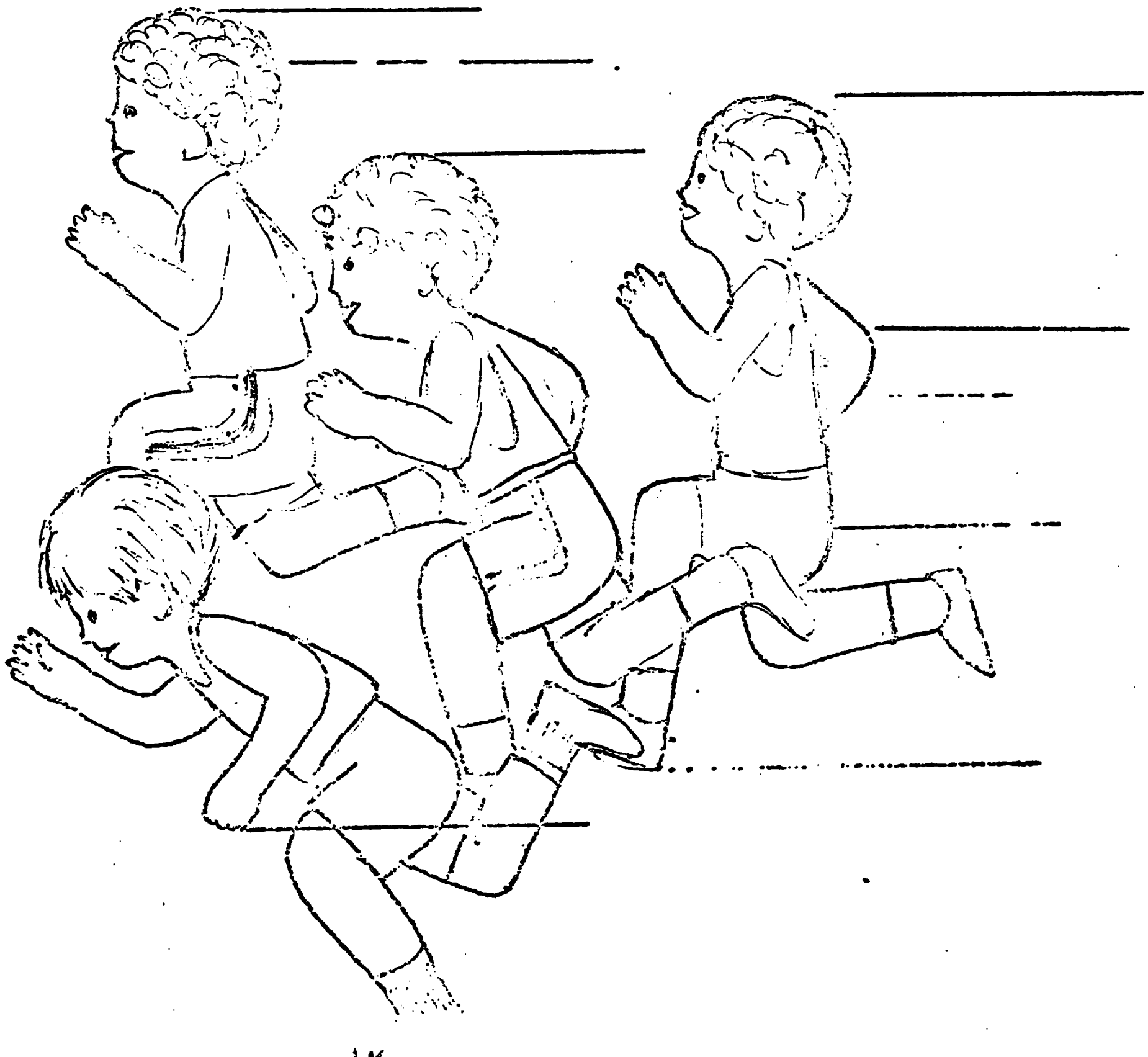
MAD



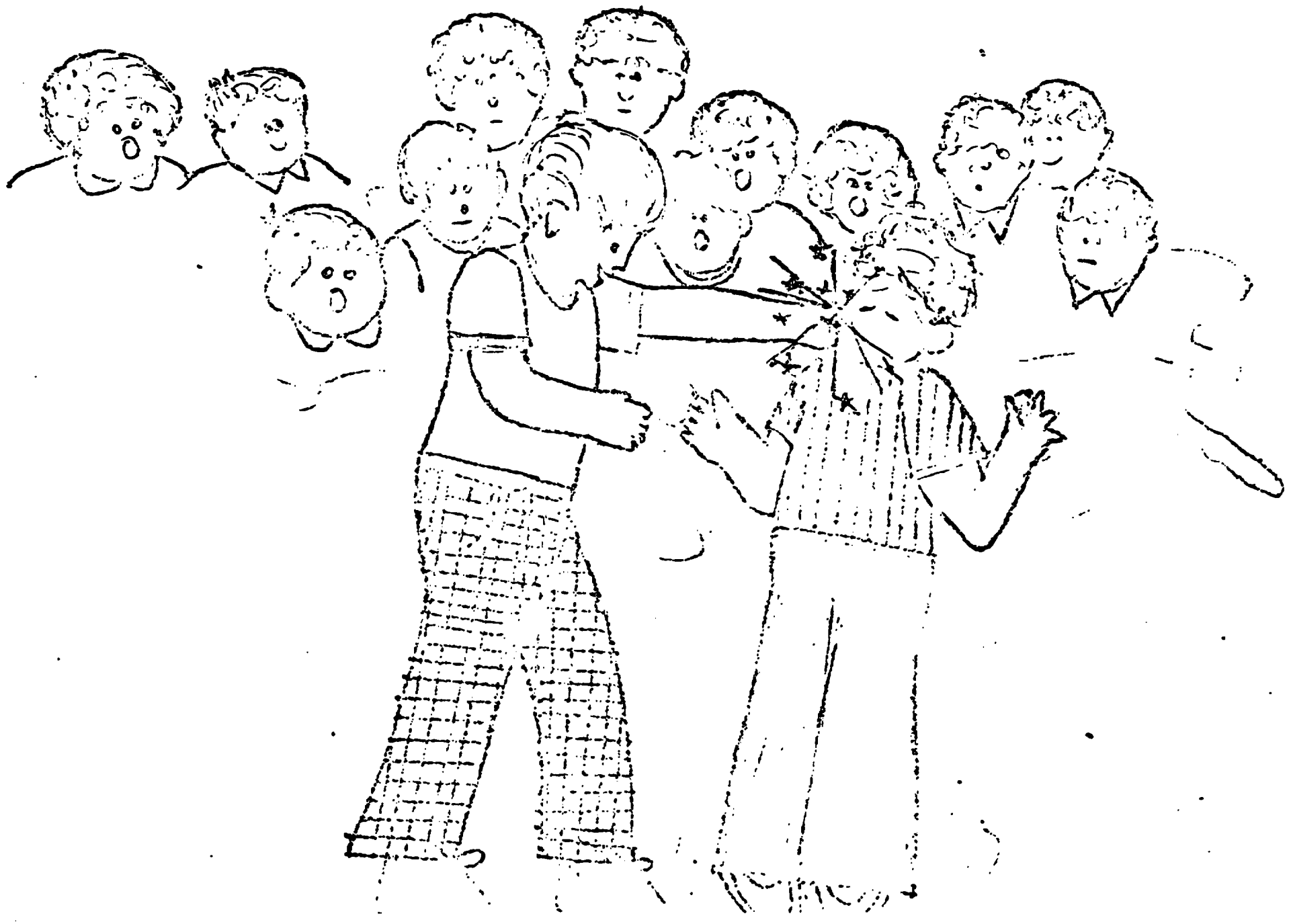


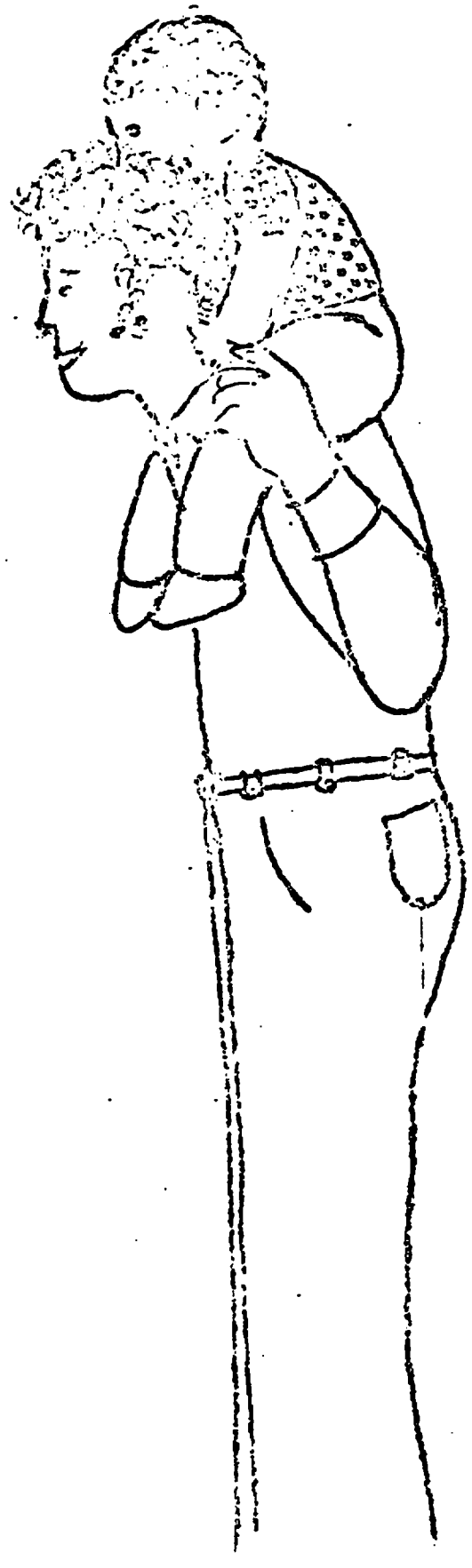






FIGHT





APPENDIX B

CLEVELAND PUBLIC SCHOOLS
Semantic Differential

LAST NAME | FIRST AND MIDDLE INITIAL | STUDENT NUMBER

FALL | SPRING

SCHOOL NUMBER | PROJECT NUMBER | GRADE | BIRTH DATE | SEX | STUDENT NUMBER

DIRECTIONS:

1. This survey is to let you describe how you feel or what you think.
2. The teacher will tell you what words to write on the line heading each section.
3. Show what you think by placing a mark in one of the five boxes between each set of adjectives (from Very Good to Very Bad, etc).
4. Use only one mark for each pair of adjectives.
5. There are no right or wrong answers. Your first thought is usually the best one to record.
6. Use only pencil.

DOGS

GOOD ▯ ▯ ▯ ▯ ▯ BAD

VERY GOOD ▯ ▯ ▯ ▯ ▯

MODERATELY GOOD ▯ ▯ ▯ ▯ ▯

SO-SO ▯ ▯ ▯ ▯ ▯ SO-SO

▯ ▯ ▯ ▯ ▯ MODERATELY BAD

▯ ▯ ▯ ▯ ▯ VERY BAD

ICE CREAM

GOOD ▯ ▯ ▯ ▯ ▯ BAD

SAD ▯ ▯ ▯ ▯ ▯ HAPPY

DOCTORS

WISE ▯ ▯ ▯ ▯ ▯ FOOLISH

COLD ▯ ▯ ▯ ▯ ▯ HOT

1. _____	2. _____	3. _____
GOOD ▯ ▯ ▯ ▯ ▯ BAD	GOOD ▯ ▯ ▯ ▯ ▯ BAD	GOOD ▯ ▯ ▯ ▯ ▯ BAD
WEAK ▯ ▯ ▯ ▯ ▯ STRONG	WEAK ▯ ▯ ▯ ▯ ▯ STRONG	WEAK ▯ ▯ ▯ ▯ ▯ STRONG
SAD ▯ ▯ ▯ ▯ ▯ HAPPY	SAD ▯ ▯ ▯ ▯ ▯ HAPPY	SAD ▯ ▯ ▯ ▯ ▯ HAPPY
WISE ▯ ▯ ▯ ▯ ▯ FOOLISH	WISE ▯ ▯ ▯ ▯ ▯ FOOLISH	WISE ▯ ▯ ▯ ▯ ▯ FOOLISH
BRAVE ▯ ▯ ▯ ▯ ▯ COWARDLY	BRAVE ▯ ▯ ▯ ▯ ▯ COWARDLY	BRAVE ▯ ▯ ▯ ▯ ▯ COWARDLY
DIRTY ▯ ▯ ▯ ▯ ▯ CLEAN	DIRTY ▯ ▯ ▯ ▯ ▯ CLEAN	DIRTY ▯ ▯ ▯ ▯ ▯ CLEAN
KIND ▯ ▯ ▯ ▯ ▯ CRUEL	KIND ▯ ▯ ▯ ▯ ▯ CRUEL	KIND ▯ ▯ ▯ ▯ ▯ CRUEL
IMPORTANT ▯ ▯ ▯ ▯ ▯ UNIMPORTANT	IMPORTANT ▯ ▯ ▯ ▯ ▯ UNIMPORTANT	IMPORTANT ▯ ▯ ▯ ▯ ▯ UNIMPORTANT
COLD ▯ ▯ ▯ ▯ ▯ HOT	COLD ▯ ▯ ▯ ▯ ▯ HOT	COLD ▯ ▯ ▯ ▯ ▯ HOT
_____ ▯ ▯ ▯ ▯ ▯ _____	_____ ▯ ▯ ▯ ▯ ▯ _____	_____ ▯ ▯ ▯ ▯ ▯ _____

SIDE 1

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APPENDIX C

CHILD-FAMILY-SOCIETY RELATIONSHIPS PROJECT

DIRECTIONS FOR ADMINISTERING

Transparancies + Semantic Differential

To Test Administrator:

Coordination and timing in presenting these materials is very important. Please follow the directions in the exact order as given. If you vary the order, your results will not be comparable to other testers.

Say to the Pupils

I am going to give you a KEY WORK to write on the blank space at the top of each column. Write the work I tell you, then wait before you mark any answers. I will show you a picture and ask a question. After I finish the question, you are to mark your answers on the pink sheet.

Are there any questions?

To the Test Administrator:

-Give the KEY WORD. Spell it for them. Wait for pupils to write it on their sheets.

-Put transparancy on projector and ask question. DO NOT show transparancy until pupils have finished writing the KEY WORD.

-Give pupils about 30 seconds to mark their responses. Encourage them to work quickly. Then procede to the next KEY WORD.

---

1. Key Word: GLANDS: G L A N D S; glands

   Glands make people grow differently. How you feel about this?

2. MAD: M A D; mad

   Mother yelled at you. You got mad. Then you ate supper. How did you feel after supper?

   (Say to pupils: Be sure you are placing one mark between every pair of adjectives.)

3. ROBERT: R O B E R T; Robert

These four boys are friends. Robert, in the green shirt, is walking away. What do you think about Robert's leaving?

4. BABY: B A B Y; baby

You have to come home after school to take care of the baby. How do you feel about this?

5. BOYS: B O Y S; boys

How do you feel about what these boys are doing?

6. WINDOW: W I N D O W; window

How do you feel about what this boy is doing?

7. HEART: H E A R T; heart

You are running a race. Your heart beats fast. Is this---?

8. FIGHT: F I G H T; fight

Michael often starts fights with smaller boys. How do you feel about this?

9. SOME DAY: (This is two words) S O M E D A Y, some day

You are a girl. Some day you might become a mother.
You are a boy. Some day you might become a father.
How do you feel about this?

APPENDIX D

Factor Coefficients for Adjective Pairs on Semantic Differential Summed Across Action-type Concepts

Adjective Pair	Factor	h^2
Good-Bad	.6910	.4775
Strong-Weak	.7281	.5301
Happy-Sad	.7531	.5672
Wise-Foolish	.7865	.6186
Brave-Cowardly	.7857	.6173
Clean-Dirty	.7759	.6021
Kind-Cruel	.8174	.6681
Important-Unimportant	.2746	.0754
Hot-Cold	.2570	.0661
Cumulative Proportion of Total Variance	.4692	

APPENDIX E

Factor Coefficients for Concepts on Semantic Differential Measuring Attitudes toward action-type Situations

Concept	Factor 1	Factor 2	h^2
GLANDS	.0858	.6710	.4576
MAD	.3591	.1141	.1419
ROBERT	.1781	.4234	.2110
BABY	.1491	.5444	.3187
BOYS	.8039	.1344	.6643
WINDOW	.7682	.0867	.6288
HEART	-.1480	.6376	.4285
FIGHT	.8155	.0412	.6667
SOME DAY	.3780	.5341	.4282
Cumulative Proportion of Total Variance	.2918	.4384	