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ABSTRACT

This pilot study addressed tension and anxiety states that may accompany reading readiness training in the kindergarten. Seventy-two children (36 boys and 36 girls) were randomly selected from three urban elementary schools. Six kindergarten classes were included, representing: (1) 2 classes conducting systematic reading programs; (2) 2 classes with regular but informal reading readiness training; and (3) 2 classes with essentially no reading or reading readiness programs in effect. Data gathering included naturalistic observations with time sampling throughout ten weeks and structured interviews in the classroom involving human figure drawings, questionnaires and behavior ratings. Frequency data for the naturalistic observations were analyzed using a factorial design of analysis of variance with schools, classes, and sex of child as factors. Similar analyses were done on weighted scores for human figure drawings and on the rating data for the interview behaviors. Results were mixed, suggesting that relationships between reading readiness training and tension states in the children are masked by the larger questions of teacher effects and more complex developmental factors. (Author/KM)

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FINAL REPORT

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EMOTIONAL CONCOMITANTS OF READING READINESS TRAINING IN KINDERGARTEN

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Abstract of the Study

This pilot study addressed itself to tension and anxiety states that may accompany reading readiness training in the kindergarten. Seventy-two children (36 boys and 36 girls) were randomly selected from three elementary schools in an urban community. From these schools, six kindergarten classes were included in this study to represent the following:

(1) Two classes conducting systematic reading programs.

(2) Two classes with regular, but informal reading readiness training and

(3) Two classes with essentially no reading or reading readiness programs in effect.

The data gathering took place over a period of ten weeks and included.

(1) Naturalistic observations with time sampling throughout the ten weeks, so that active and passive periods could be tapped, and

(2) Structured interviews in the classroom involving human figure drawings, questionnaires, and behavior ratings.

Independent observers collected the data in the schools, and separate independent judges rated and analyzed the data. The resultant frequency data for the naturalistic observations were analyzed using a factorial design of analysis of variance with schools, classis, and sex of child as factors. Similar analyses were done on the weighted scores for the human figure drawings and on the rating data for the interview behaviors.

The results were mixed, suggesting that relationships between reading readiness training and tension states in the children are marked by the larger questions of teacher effects and more complex developmental factors.

Acknowledgments

The investigators are indebted to the valuable guidance of Dr. Rolph LaForge who gave unstintingly of his time to help develop a viable experimental design; to Max Silver, M.D., whose sage perceptions of childhood emotion and understanding of the complexities of human anxiety helped clarify some of the entanglements in the data.

To Mrs. Anne Allahyari and Mr. Terry Watts, graduate research assistants, we give thanks for their dedicated effort in the early stages of project preparation and their careful, systematic work with the children and their teachers in the study; to Jim Jacobs for his help in the judging and classification role. To Miss Kathryn Green we owe a special debt of gratitude for her help in the statistical treatment and computerization of the data.

Finally, we wish to pay tribute to the teachers and children who permitted us to work with them in bringing further insights into this area of human development.

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Thomas D. Spencer

Summary of Major Findings

1. Manifest anxiety or tension behavior, as determined through naturalistic observations was exhibited significantly less frequently in the school using systematic reading readiness training than in the two contrast schools. Teacher effects were noted.
2. Dependent behavior, particularly toward the teacher, was exhibited significantly more frequently in the school using systematic reading readiness training.
3. One of the contrast schools exhibited more independent (self-esteem as defined in this study) behavior than did the school using systematic reading readiness training.
4. Aggressive behavior appeared more frequently in boys than in girls.
5. Boys had significantly more omissions and lower arm placement in their human figure drawings than did the girls, suggesting less maturity in the drawings.
6. Tension behavior was exhibited in an interview with the adult observer significantly more frequently on four out of ten indices by the school conducting systematic reading readiness training when compared with the contrast school using informal reading training, and on three indices when compared with the contrast school having no reading readiness training at all.
7. Tension behavior was exhibited significantly more frequently on only one index by one of the contrast schools.
8. Hypotheses were developed as recommendations for more systematic, longitudinal assessments of the problem.

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INTRODUCTION

The Problem

This report describes the results of a pilot study to determine the emotional concomitants associated with reading readiness training in kindergarten.

Much attention to early reading preparation, particularly in the kindergarten, has been generated in the recent past (Durkin, D. 1966; Harris, T. & Barrett, T., 1967; McKee, P. & Brzeinski, J., 1966; Mood, D. 1967; Morrison, C., et al., 1968; and Personske, C., 1968). A spate of materials has begun to appear on the educational market for use in pre-primary classes (Distar System, SRA; Kindergarten Keys, the Economy Company; and Discovery Reading, Psychotechnics, Inc.). The likelihood that reading readiness training in the kindergarten is going to increase is great. Moreover, there are data in existence that suggest the value of such preparation training on future reading effectiveness.

But what are the effects of such programs, however well-intentioned, on the emotional well-being of the child? There are those who suggest that unless reading readiness training is highly individualized, the experience may be too pressured for the children of kindergarten ages, and casualties are likely to occur in the form of various disabilities (Lavatelli, 1970; Hefferman, 1964). Indeed, kindergarten teachers themselves tend to differentiate between those children deemed to be ready for reading experiences and those not ready.

Such stresses, it would seem, are likely to be manifested in various forms of anxiety expression. Though the sources accounting for anxiety in young children are understandably complex and difficult to track

down. The study of anxiety in young children by Sarason (1958) still serves as the major contribution to methodology and analysis of the problem, but even he found the lack of well-defined methods to be critical handicaps. Kanner (1957) also reported the same difficulties in arriving at generalities about anxiety in children due to the lack of effective measurement procedures.

It is to these two related questions that this study addressed itself:

(1) The problem of developing methods to identify, track, and assess manifest anxiety in kindergarten children, and

(2) Relating such expressions of tension states to reading readiness training.

This study took place in an urban community in the San Francisco Bay Area which has 13 elementary schools. The school district has been experimenting with a systematic reading readiness training program in the kindergarten of a selected school during the past three years. Validating data attest to the effectiveness of the program, with the children in the experimental groups scoring equal to the 80th percentile (medn. = 79, S.D. = 12.36) on the Metropolitan Reading Readiness Test at the end of the kindergarten year, while the scores from the other schools average around the 61st percentile (medn. = 65, S.D. = 13.30). The children receive approximately 20 minutes per day of reading training.

METHOD

Subjects

Seventy-two children (36 boys and 36 girls) were randomly selected from six different kindergarten classes in three elementary schools. The schools, all in the same school district, were chosen to represent three kinds of kindergarten experiences involving reading:

School 1 - Two classes in which systematic reading readiness programs were used.

School 2 - Two classes where reading readiness training occurred on an informal basis.

School 3 - Two classes where no reading or reading readiness programs existed.

The children ranged in age from 5-6 to 6-5 with a mean age of 5-11; they came predominantly from working-class Caucasian homes.

Procedure

All of the children were studied in their respective classrooms. Two different techniques of data collection were employed:

Naturalistic observations. Two adult observers (male and female) independently recorded three five-minute running records on each child for a total of 30 minutes of naturalistic observations per child.[1] The records were collected at different times during the school day and across a ten-week period in order to give some indication of each child's behavior under a variety of conditions, i.e., quiet and organized activities as well as more active and spontaneous ones. The records were descriptive accounts of what the children were doing rather than interpretive accounts

[1] Observers had been trained to record running record data and had achieved agreement rates of 90 percent or better before beginning the collection of data for the study itself.

of their behaviors. A sample record is reproduced in Appendix A. The observers attempted to record as much of the child's behavior as possible including bodily movement, facial responses, gestures, speech, and reactions to the child by other children and adults.

Structured interviews. During the course of the ten-week naturalistic observation period, each adult observer also conducted individual interviews with one-half of the children. The interview, which took place in a quiet corner of the classroom, consisted of three parts:

(1) Human figure drawing. To begin the interview session, the child was given a piece of art paper and a crayon and asked to "draw a picture of a person."

(2) Questionnaire. Next, the child was asked to respond to a number of questions relating to his attitudes about school (particularly reading). Appendix B gives a complete list of the questions.

(3) Observer ratings of interview behaviors. Upon completion of the questionnaire, the child was returned to his class activities. The observer immediately proceeded to rate the child's behavior during the interview on ten scales (Table 1).

Scoring

Naturalistic observations. Each of the 432 five-minute running records was coded to ensure the anonymity of the child and the school. Then all of the records were submitted to three adult judges (two males and one female) to be scored independently of each other. Each judge read through all of the records and compared the observed behaviors against a check list (Appendix C)

TABLE 1

Rating [illegible] Interview Behaviors

	Never				Always
Avoids eye contact	1	2	3	4	5
Rigid posture	1	2	3	4	5
Bites lips	1	2	3	4	5
Speaks extremely softly	1	2	3	4	5
Coys or whines	1	2	3	4	5
Frowns	1	2	3	4	5
Bites finger nails	1	2	3	4	5
Turns away from interviewer	1	2	3	4	5
Pulls at nose or ears	1	2	3	4	5
Fidgets	1	2	3	4	5

covering four areas of functioning: anxiety, dependency, aggression, and self-esteem. After all of the running records were scored in this manner, judge comparisons were made. Only those behaviors that had been agreed upon independently by all three judges were included in the final scores. Finally, the scores for the six running records on each child were combined to provide total scores across all 30 minutes of observation. All subsequent data analyses were based upon the combined 30-minute scores.

Structured interviews

Human figure drawing. The children's drawings were scored independently by four judges (two males and two females) using a system adapted from Fox, et al. (1958). The scoring procedures are outlined in Appendix D. The judges' scores were combined using a weighting procedure based upon judge agreement as follows:

All judges agree that characteristic is present	- 5 points
Three judges agree that characteristic is present	- 4 points
Judges split two to two on scoring	- 3 points
Three judges agree that characteristic is absent	- 2 points
All judges agree that characteristic is absent	- 1 point

All of the analyses on the human figure drawings were based upon the weighted scores. As with the naturalistic observation records, all of the children's drawings had been coded prior to the judging in order that judges would be unaware of the particular child or school involved.

Questionnaire. The responses to each of the questions were collated and frequency counts were made. Since most of the questions elicited either "yes" or "no" responses, analyses were conducted using this two-way frequency classification.

Observer ratings of interview behaviors. The observer's ratings of the child's behaviors during the interview on the ten scales (avoids eye contact, rigid posture, bites lips, speaks extremely softly, coys or whines, frowns, bites finger nails, turns away from interviewer, pulls at nose or ears, and fidgets) were the basis for the subsequent analyses.

RESULTS

The effects of school, sex of child, and teacher nested within school were assessed using 2 x 2 x 2 analyses of variance (Winer, 1962). Since one of the teachers taught a class in School 2 and in School 3, analyses have been limited to School 1 (systematic reading program) versus School 2 (informal reading program), and to School 1 versus School 3 (no reading program). No comparisons have been made between Schools 2 and 3.

Naturalistic Observations

Mean frequency scores for each of the four behavioral areas (anxiety, dependency, aggression and self-esteem) were analyzed separately. Table 2 summarizes the F-ratios for the four analyses of variance comparing School 1 vs. School 2, and School 1 vs. School 3. (Mean frequency scores and standard deviations for each class, sexes separately, are presented in Appendix E.)

The analyses revealed that children in School 1 showed significantly fewer anxiety behaviors in the classroom than children in either School 2 or 3 ($p < .01$ and $p < .001$) and fewer self-esteem behaviors than did the children in School 2 ($p < .05$). However, School 1 children behaved significantly more often in a dependent manner than either School 2 children ($p < .05$) or School 3 children ($p < .01$).

An examination of sex differences indicated only one statistically significant finding. When Schools 1 and 3 were compared, boys showed more aggressive behaviors than girls ($p < .05$).

TABLE 2

Analysis of Variance on
Naturalistic Observations

Variable	F-Test				
	Sex	School	Sex/School	Teacher/ School	Sex/ Teacher/ School
Anxiety					
Schools 1 vs. 2	.27	11.12**	.13	7.46**	.69
Schools 1 vs. 3	1.46	18.08***	1.15	1.28	.34
Dependency					
Schools 1 vs. 2	2.40	5.93*	.05	1.23	1.42
Schools 1 vs. 3	1.27	11.44**	1.27	1.59	2.70
Agression					
Schools 1 vs. 2	.66	.10	.00	2.23	.77
Schools 1 vs. 3	7.21*	.03	2.28	2.38	.35
Self-esteem					
Schools 1 vs. 2	.12	4.95*	.67	3.63*	.62
Schools 1 vs. 3	.06	.94	.94	5.44**	.15

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

Tests of the nested effect of teachers within schools showed significant differences in both analyses on the dimension of self-esteem ($p < .05$ and $p < .01$) and also in anxiety behaviors in the School 1, School 2 comparison ($p < .01$).

Sturctured Interviews

Human figure drawings. Mean weighted scores for each of the six human figure drawing scales were analyzed separately. Table 3 summarizes

the analyses of variance findings for Schools 1 vs. 2 and Schools 1 vs. 3. (Mean weighted scores and standard deviations for each separate class and sex are included in Appendix F.)

Significant differences emerged on two of the six scales scored. In both of the analyses, boys showed significantly more omissions and distortions of parts of the body than did girls ($p < .001$ and $p < .05$ respectively). In addition, a statistically significant School X Sex of Child effect occurred on the omission scale in the School 1 versus School 3 analysis ($p < .05$). On the arm position scale, boys show more arm position down than girls ($p < .05$).

Incidental to the analyses of variance of the weighted scores reported above, interjudge agreements were computed for each of the six scales. The percentage of agreement among judges over all six scales was .77. This ranged from a low agreement of .62 on the rigidity scale to a high agreement of .92 on the shading scale. Appendix G lists the judge by judge comparisons for all six scales.

Questionnaire. No significant differences emerged on any of the questions asked of the children during the interview. A few of the results were nonetheless interesting to note. In regard to the question, "Do you like school?" 70 children responded affirmatively. On question 8, "Are you learning to read in school?" 63 children said they were learning to read in school. Those who said they were not learning to read were distributed across all three schools. When asked on question 10 if they would rather read or play games, 35 children chose reading, 28 chose playing games and the remainder said they would do either, or they chose some other activity altogether.

TABLE 3

Analysis of Variance on
Human Figure Drawings

Variable	F-Test				
	Sex	School	Sex/School	Teacher/ School	Sex/ Teacher/ School
Omission					
Schools 1 vs. 2	14.53***	.00	.45	.20	.65
Schools 1 vs. 3	4.57*	3.70	4.57*	.18	.59
Smile					
Schools 1 vs. 2	1.58	1.10	2.81	.18	1.80
Schools 1 vs. 3	.19	1.73	.77	.38	1.54
Shading					
Schools 1 vs. 2	1.18	.06	.01	.34	.59
Schools 1 vs. 3	.22	2.43	.22	.61	.05
Arm Position					
Schools 1 vs. 2	1.12	.06	.17	1.76	1.01
Schools 1 vs. 3	4.54*	1.81	.00	1.84	1.28
Rigidity					
Schools 1 vs. 2	2.73	.30	.60	.79	.16
Schools 1 vs. 3	2.26	3.00	1.08	1.14	.97
Playfulness					
Schools 1 vs. 2	1.23	.00	.78	.12	.02
Schools 1 vs. 3	.23	.06	.52	1.76	.38

*p < .05
**p < .01
***p < .001

Observer ratings of interview behaviors. Mean ratings for each of the ten scales were analyzed separately. Table 4 summarizes the series of F-tests comparing Schools 1 vs. 2 and Schools 1 vs. 3. (Appendix H lists mean ratings and standard deviations for each separate class and sex.)

In comparing school differences, a number of significant findings emerged. Children in School 1 were found to speak more softly in the interview situation than children in School 2 ($p < .01$) and showed more lip biting. turning away from adults and fidgeting than children in School 2 ($p < .05$ in all cases). In comparing Schools 1 and 3, children in School 1 bit their lips and frowned more often than School 3 children ($p < .05$ in each case) and fidgeted more ($p < .001$). However, School 1 children showed significantly less rigid posture than School 3 children ($p < .01$).

In comparing boys and girls, only two significant results emerged and both were in the School 1 vs. School 2 analysis. Boys avoided eye contact more often than girls ($p < .05$), but girls bit their lips more often during the interview situation than the boys ($p < .01$).

Two School X Sex of Child differences were found in the School 1 vs. School 3 analysis. Both were significant at the .05 level and were on the dimensions of eye contact and lip biting.

TABLE 4

Analysis of Variance on
Interview Ratings

Variable	F-Test				
	Sex	School	Sex/School	Teacher/ School	Sex/ Teacher/ School
Avoids Eye Contact					
Schools 1 vs. 2	4.39*	.74	1.84	.14	.56
Schools 1 vs. 3	1.24	.14	5.53*	.02	.93
Rigid Posture					
Schools 1 vs. 2	.91	1.51	.46	.54	.54
Schools 1 vs. 3	1.24	11.16**	.31	2.86	1.32
Bites Lips					
Schools 1 vs. 2	7.66**	5.62*	.16	1.25	2.03
Schools 1 vs. 3	.53	4.74*	4.74*	.66	1.18
Speaks Softly					
Schools 1 vs. 2	.01	8.23**	.55	1.68	.55
Schools 1 vs. 3	.23	.45	1.12	.45	.79
Whines					
Schools 1 vs. 2	.43	2.33	.43	1.19	.05
Schools 1 vs. 3	.43	2.33	.43	1.19	1.19
Frowns					
Schools 1 vs. 2	3.13	3.13	.23	.03	.23
Schools 1 vs. 3	1.72	5.27*	.97	.27	.27
Bites Fingers					
Schools 1 vs. 2	.88	1.99	1.38	.03	1.46
Schools 1 vs. 3	.09	.09	.00	.61	2.10
Turns Away					
Schools 1 vs 2	.93	7.00*	.93	.75	.46
Schools 1 vs. 3	1.28	1.28	.26	.59	.18
Pulls Nose					
Schools 1 vs. 2	.13	3.28	.13	1.18	.13
Schools 1 vs. 3	.09	.82	.82	.82	.09
Fidgets					
Schools 1 vs. 2	1.02	5.16*	1.02	1.08	1.27
Schools 1 vs. 3	.48	18.55**	.48	1.25	.48

* p = .05
**p = .01

Discussion and Conclusions

The intent of this study was to determine ways to identify emotional factors associated with introducing a formal abstract skill such as reading into the curriculum of a kindergarten. As previously reported, concerns have been raised over the past several decades about introducing children too early in their maturational development to such disciplines. Emotional reactions could be created that could interfere with normal growth. These emotional reactions could be expected to show up in the daily behavior of the children involved.

It was, therefore, decided that the most valid indicators of such emotional tension states would be those reflected in their natural day-to-day classroom behavior. To a lesser extent, but nonetheless valid, inferences could be made from direct interviews and from drawings, as Goodenough (1933) and Buck (1948) have demonstrated. It was assumed that there would be a systematic relationship among these indices.

However, when the results of the naturalistic observations were compared with the interviewer ratings of the same children, a discrepancy appeared. On the one hand, there seemed to be less manifest anxiety or tension states in the systematic reading group than in the two contrast groups when observed in their natural classroom settings.

On the other hand, the systematic reading classes were rated as showing significantly more tension in the interview transactions than were the children in the other two schools. To add to the apparent paradox, several of the tension state indices appeared in both categories of data.

Several explanations appear plausible. It is possible that the interview procedure, focusing on the child in a somewhat private context in the corner of the classroom, took on an evaluative form to which the children in the systematic reading classes reacted. They may have been less experienced in this form of personal transaction with a strange adult, particularly if their primary classroom orientation had been the comparative safety of a small group of children.

It is possible that the classroom orientation of both contrast groups was primarily toward teacher-child transactions in a full class, enabling the child to become more practiced with adult questioning. If so, then such reinforcement could permit the child to respond more comfortably in classroom activities that focus on the child having the adult's attention.

Dependent behavior was seen to exist more frequently in the systematic reading group than in the two contrast groups. This complex set of behaviors may actually have been tension-reducing in purpose and value. If so, then low scores on manifest anxiety and high scores on dependent behavior may be consistent. Dependency behaviors, as used in this study, were not in as much opposition to independent behavior (self-esteem) as had originally been surmised. For example, under the dependency category, was the classification "seeks attention," while under independent behavior was "gets satisfaction from work." Seeking attention in some instances was the child's seeking confirmation of adequate work done, which defined the satisfaction. In addition, initiating interaction with adults was defined as dependent behavior, but initiating activity with others was defined as independent behavior.

Where the teacher's emphasis is upon classroom interaction as a way of developing social skills, many forms of dependent behavior are likely to

be observed. But, if the transactions are not observed, and the child being studied is viewed as isolated from the context, dependent-like behavior may be perceived because it is out of context from the larger set of transactions.

From a methodological standpoint, the interview and observational design permitted attending only to the keyed indices of behavior, and did not include silence, passive immobility, or sheer waiting on the adult stimulus. These behaviors are also characteristic of dependence, particularly under conditions where initiative is preferred and encouraged. It is felt that in those classes where child interation was minimized, and quiet sitting was the preferred mode of behavior, much more dependence might have been noted than was the case. The mean number of dependent responses appearing in these observations totaling 30 minutes per child suggests this alternative possibility. Moreover, overall states of tension or anxiety, assessed subjectively by observers, are frequently more than the sum of specific bits of behavior. This type of overall rating was excluded in this study.

Finally, it may be that the differential results are describing the fact that tension behavior is more contextual than generalizable or characterlogical for the children at this stage of maturity. Thus, the main issues are not whether tension or anxiety exists in the child, but the form of expression it takes and in what context.

The effort to identify emotional concomitants to reading readiness training through the use of human figure drawings was not particularly successful. Using the modification of a system devised by Fox (1958) to analyze the drawings, differences appeared only in the arm position scale and the omission scale. Boys in the systematic reading group and one of

the contrast schools drew the arms on their figures lower than the criterion of 45 degrees from the body significantly more frequently than the girls in these groups. They also omitted key elements in their drawings significantly more frequently than the girls. These data could suggest more advanced development in the girls' drawings or perhaps since only three out of the 60 F-tests were significant in evaluating the human figure drawings, these findings were chance effects.

It appears, on balance, that the results of this pilot study are sufficiently mixed to render clear-cut conclusions unfeasible as they relate to reading readiness training. However, the study does raise a number of questions that are worthy of comment and further exploration.

Does reading readiness training, which basically involves associating visual symbols, first at concrete levels, and later at higher levels of abstraction generate emotional stress as we understand it? We think not. Adding pressures of accurate recall, and the need to achieve confirmation or validation of accuracy through approval by an adult criterion - namely, the parent or teacher - may be more the critical issue.

Reading, or any other value-laden performance, is bound to become connected with feelings of personal adequacy and self-esteem, if only because self-definition requires recognition and approval from the important people in one's life. Since the child in our society is already impressed with the value and importance of reading long before he enters the kindergarten, he is likely to seek an active sense of accomplishment of that skill. Active seeking, engaging, practice, error, and the necessarily slow accumulation of the reading skill, all associated with approval, is bound to generate much energy and tension in the child. But, as already stated, it is not <u>whether</u> tension is generated that is the issue, but rather, the way in which is is coped.

In addition, the variety of social learnings in kindergarten - such skills as self-control, cooperation, obedience, elementary problem-solving, competitive behavior - all reflecting both the family values and mores, and the individual classroom teacher's values, are likely to have as much emotional impact on the child as does 20 minutes daily of reading readiness training. The problem for the investigator is to be able to isolate that amount of the variance accounted for by the reading readiness training as it relates to the emotional development of the child while in kindergarten.

Another feature that must be considered when seeking to understand the effects of any formal learning experience on the young child is the meaning of tension, and tension control, at the age of 4 to 6 years. Full self-control over one's body (including self-expression) is understood to be an index of maturity. The 4 to 6 year old is expected in our culture to be a bundle of energy that is not easily controllable externally, to say nothing of internal controls. Thus, while imposing a set of social behaviors upon this human energy system that is alien to its structure - for example, sitting in one place for 15 minutes - one can expect extraneous behaviors to emerge from that human system. From one point of view, these behaviors relieve the body of tensions that naturally build up if not channeled by some expressive means that is socially acceptable.

Teacher effects in this pilot study were seen to be the critical factors when it came to the evaluation of the naturalistic observations. Though the ability to control this factor was admittedly minimal because there were only two reading classes, the teacher differences nevertheless were accounted for.

Where teacher control takes the form of minimizing opportunities for the child to channel vital energy into productive activity, that energy is

likely to find avenues of expression through outlets less socially approved, but nonetheless relieving to the child at the time. Thus, nail-biting, b'ting lips, sucking on objects or chewing them may be forms of tension expression that enable the child to use his main energies to conform to what is expected of him at any given moment - such as remaining quiet and still in his seat. However, it must be recognized that the coping style the child presents in tension-arousing conditions is much more likely to be determined by his home environment than by the classroom.

The results from this pilot study suggest that a larger, more systematic project be developed to isolate the various interactive effects of reading and emotion in the young child who has not yet learned to read. It is recommended that the child be studied at his initial entry into kindergarten, and observed throughout the year. Better yet, it would be more valuable to identify him as a subject in pre-school experiences.

Control groups could be established, but with careful identification of what kind of reading experiences are occurring informally and at home. Though the classroom teacher exerts a powerful influence on the child at that period, main effects are still expected from parental influence.

The organization of the classroom for learning, and the norms of behavior expected by the teacher need to be controlled. Coping styles in response to anxiety producing situations are also critical control variables.

The major independent variables - manifest anxiety or tension control processes - could be monitored. These behaviors are considered to be both contextual and also generalizable. In addition, there is evidence that tension states are phasic, in that there is a periodic build-up and a release. The child may persevere in confronting a difficult word in learning to read, and in doing so, will be binding over his tension until

he succeeds or fails, at which time some form of release will occur. But while working, he may also show some form of extraneous tension such as sucking or chewing on his pencil while he sustains his effort to accomplish the task.

The monitoring of these tension control processes can be visualized perhaps by a sinusoidal curve, with reading skills being plotted on the same grid. Over a given period of time, one could estimate the relationship between both processes more effectively than in a brief segment.

Nevertheless, much insight could be gained about the processes of incorporating tension into productive behavior patterns as a part of normal skills development, of which reading is a central building block.

Until such types of longitudinal studies are conducted, it is unlikely that any evidence will emerge that clearly indicates reading training having any emotional effects on the developing child.

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APPENDIX A

Sample of Naturalistic Observation Record

Child's Code - 1112

Children are at desks doing work sheets. A number are with the teacher practicing a play. Class is very quiet.
J. is at her desk between T., and T., working on a work sheet.
Finger in mouth
Says to T., "I have more than your's. Hah, hah, hah,"(said nastily).
Draws answer intently.
"Come...at...by" Reading aloud.
Looks at girl.
Draws an answer.
Finger in mouth.
Starts to get up. "Mrs. X, I have something to tell you" (she's across the room and not likely to have heard).
Goes up to Teacher who is talking to others, gets her attention and says "Somebody has a new...No her closed it." "On the outside. Outside. Outside."
"He hanged it up on the outside."
(Teacher - do you need any help?)"No."
Mrs. X didn't understand what she was talking about at first, and had to ask questions to clarify what she was saying and then went on to ask more, to show interest.
Goes back to desk and colors answer on work sheet, quietly for awhile
Says to T., "You know what? We have a new..."(didn't hear)
T responds, "We have two new cars," (mine's better than yours-voice)
"We have two houses."
"Hey. Two cars, two houses."
Girl responds. (something like) "but the two houses...and the house won't go away, and my little cousins...(didn't hear it all).
Keeps drawing.
"Look, I'm closing my eyes while coloring. See?"
Girl whispers in her ear.
She holds her hand up in response to Teacher's question.

APPENDIX B

Questionnaire Relating Attitudes About School

1. Do you like school?
2. What do (don't) you like about school?
3. Is there anything you do (don't) like about school?
4. Do you know most of the children in your class?
5. Do you think most of the children like you?
6. Who are your very best friends in the class?
7. Is there anybody in the class that you don't like too much?
8. Are you learning to read in school?
9. Do you like to read?
10. Would you rather read or would you rather play games?
11. Do you think you are a good reader?
12. Do you ever get angry in school?
13. Do you ever get into fights in school? At home?
14. Do you ever get lonely in school?
15. Do you ever cry in school?
16. If so, when do you cry?
17. Do you ever get nervous (scared, shy, upset) in school?
18. Are you nervous right now talking to me?
19. Do you like to sit by the teacher?
20. Do you think the teacher likes you?
21. Do you think I like you? (Reassure the child that you do.)
22. Do you always do what other children tell you to do?
23. Would you like to read for me now? (If so, let the child read a page or two before ending the interview.)

APPENDIX C

Behavior Categories For Rating Naturalistic Observations

Anxiety Behaviors

physical complaints
nervous mannerisms
- cries easily
- nail biting
- fidgeting
- whines
- avoiding eye contact
- pulling on ear
- licking or biting lips
- sucking on objects or chewing objects
- special attachments (toys, blankets, etc.)

body control
- hands tremble
- voice trembles (soft speech, nonfluent speech)
- rigid posture

withdraws from activities
appears worried or shy

Aggressive Behaviors (Assertive behaviors)

verbal aggression
- threatens others
- makes demands
- tattles
- screams and shouts
- has temper tantrums
- participates in songs, etc. loudly

physical aggression
- throws objects
- hits and pushes
- runs about
- kicks
- bites
- knocks others down
- pulls ears or hair of others
- grabs objects away from others
- disrupts activities or annoys others

reacts to the provoking of others
self defense reactions

Dependency Behaviors

seeks physical contact
- clings to individuals
- lap sitting
- hand holding

seeks to be near
- follows individuals around

seeks attention
seeks praise and approval
- expects to be complimented
- seeks reassurance

seeks help in tasks
resists separation
- cries when left alone
- prolongs interaction with others

attends intently to what others are saying
follows requests of others exactly as given
initiates interaction with adults

Self-Esteem Behaviors (Independent behaviors)

initiates activity
- asks others to play
- makes suggestions
- acts as leader

volunteers for jobs or to give answers
maintains lengthy eye contact
speaks in a clear and firm manner
behaves in a friendly and relaxed manner
overcomes obstacles
persistent
wants to do things by self
gets satisfaction from work

APPENDIX D

Scoring Procedures for Human Figure Drawings[1]

Omission -	Scored as omitted if one or more facial features (eyes, nose, mouth, ears) were absent, or if hands or feet were absent. Also scored omitted if one or more limbs were markedly small compared to the rest of the body.
Smile -	Scored present if both corners of the mouth turned upward.
Shading -	Scored present if there was any blackening in of portions of the drawing. The one exception was hair; this was not scored.
Arm position (down) -	Scored negative if either arm made less than a 45 degree angle with the body or turned in toward the body.
Rigidity -	Scored negative if the figure appeared rigid, unable to move or likely to topple over if it did move.
Playfulness (humor) -	Scored present if a particular detail or some expressive stance of the figure communicated a kind of playful, humorous mood. (This was not interpreted as simply the opposite of rigidity.)

[1]Adapted from Fox, et al. (1958).

APPENDIX E

Naturalistic Observations
of Children

School 1

Variable	Boys (N=6)			Girls (N=6)		
	Frequency of Behavior	Mean	S.D.	Frequency of Behavior	Mean	S.D.
			Teacher One			
Anxiety	11	1.83	2.64	18	3.00	1.55
Dependency	7	1.17	1.17	16	2.67	.82
Aggression	16	2.67	1.63	13	2.17	2.40
Self esteem	3	.50	.84	7	1.17	.98
			Teacher Two			
Anxiety	34	5.67	2.80	25	4.17	2.56
Dependency	8	1.33	1.51	7	1.17	1.17
Aggression	10	1.67	1.63	6	1.00	1.55
Self-esteem	3	.50	.84	4	.67	1.63

APPENDIX E (cont)

Naturalistic Observations
of Children

School 2

Variable	Boys (N=6)			Girls (N=6)		
	Frequency of Behavior	Mean	S.D.	Frequency of Behavior	Mean	S.D.
			Teacher One			
Anxiety	27	4.50	3.89	28	4.67	3.14
Dependency	5	.83	1.17	6	1.00	2.00
Aggression	20	3.33	4.84	10	1.67	1.63
Self esteem	12	2.00	1.41	14	2.33	1.63
			Teacher Two			
Anxiety	64	10.67	4.59	52	8.67	5.79
Dependency	0	.00	.00	5	.83	1.60
Aggression	3	.50	1.22	7	1.17	1.17
Self esteem	7	1.17	1.47	3	.50	.55

APPENDIX E (cont)

Naturalistic Observations
of Children

School 3

Variable	Boys (N=6)			Girls (N=6)		
	Frequency of Behavior	Mean	S.D.	Frequency of Behavior	Mean	S.D.
			Teacher One			
Anxiety	59	9.83	6.97	40	6.67	5.50
Dependency	1	.17	.41	4	.67	1.21
Aggression	12	2.00	1.79	3	.50	.84
Self esteem	2	.33	.52	1	.17	.41
			Teacher Two			
Anxiety	63	10.50	5.54	49	8.17	2.48
Dependency	6	1.00	.89	3	.50	.55
Aggression	22	3.67	2.16	6	1.00	1.26
Self esteem	12	2.00	1.41	10	1.67	1.97

APPENDIX F

Human Figure Drawing

School 1

Variable	Boys (N=6)			Girls (N=6)		
	Sum of Judges Scores	Mean	S.D.	Sum of Judges Scores	Mean	S.D.
			Teacher One			
Omission	13	2.17	1.60	25	4.17	.75
Smile	28	4.67	.82	23	3.83	1.47
Shading	11	1.83	1.60	13	2.17	1.47
Arm position	26	4.33	1.63	22	3.67	2.07
Rigidity	14	2.33	1.03	18	3.00	1.67
Playfulness	13	2.17	.41	14	2.33	1.03
			Teacher Two			
Omission	13	2.17	1.17	21	3.50	1.64
Smile	26	4.33	1.63	29	4.83	.41
Shading	10	1.67	1.63	14	2.33	2.07
Arm position	12	2.00	1.67	20	3.33	1.86
Rigidity	16	2.67	1.21	23	3.83	.98
Playfulness	13	2.17	1.47	13	2.17	1.47

Note: On the omission, arm position, and rigidity scales, the scoring sequence was reversed so that higher scores indicate lower rating.

APPENDIX F (cont)

Human Figure Drawing

School 2

Variable	Boys (N=6)			Girls (N=6)		
	Sum of Judges Scores	Mean	S.D.	Sum of Judges Scores	Mean	S.D.
			Teacher One			
Omission	13	3.83	1.17	23	2.17	.41
Smile	18	3.00	2.19	30	5.00	.00
Shading	7	1.17	.41	15	2.50	1.97
Arm position	20	3.33	1.97	23	3.83	1.17
Rigidity	16	2.67	1.37	19	3.17	1.17
Playfulness	12	2.00	1.55	16	2.67	1.47
			Teacher Two			
Omission	16	3.33	1.63	20	2.67	1.37
Smile	23	3.83	1.47	25	4.17	1.60
Shading	15	2.50	1.97	14	2.33	2.07
Arm position	17	2.83	1.83	23	3.83	1.83
Rigidity	15	2.50	1.38	16	2.67	1.51
Playfulness	10	1.67	.82	15	2.50	1.76

APPENDIX F (cont)

Human Figure Drawing

School 3

Variable	Boys (N=6)			Girls (N=6)		
	Sum of Judges Scores	Mean	S.D.	Sum of Judges Scores	Mean	S.D.
			Teacher One			
Omission	15	2.00	1.38	12	2.50	1.26
Smile	19	3.17	1.72	26	4.33	.52
Shading	14	2.33	2.07	15	2.50	1.97
Arm position	22	3.67	2.07	27	4.50	.84
Rigidity	10	1.67	.82	15	2.50	1.64
Playfulness	11	1.83	.75	11	1.83	1.17
			Teacher Two			
Omission	12	2.50	1.10	15	2.90	1.64
Smile	25	4.17	1.60	24	4.00	1.55
Shading	20	3.33	1.86	19	3.17	2.04
Arm position	24	4.00	1.67	23	3.83	1.60
Rigidity	17	2.83	1.17	14	2.33	1.21
Playfulness	19	3.17	.98	14	2.33	1.75

APPENDIX G

Percentage of Agreement Among Judges
On Human Figure Drawings

Judges[1]	Omission	Smile	Shading	Arm Position	Rigidity	Playfulness
1 - 2	.64	.97	.90	.96	.60	.69
1 - 3	.40	.97	.93	.88	.54	.64
1 - 4	.71	.75	.99	.82	.65	.68
2 - 3	.76	.97	.86	.86	.61	.64
2 - 4	.82	.78	.92	.86	.72	.74
3 - 4	.69	.75	.94	.86	.61	.71

[1]Judges 1 and 2 were female

APPENDIX H

Observer Ratings of Child
During Interview

School 1

Variable	Boys (N=6)			Girls (N=6)		
	Sum of Ratings	Mean	S.D.	Sum of Ratings	Mean	S.D.
			Teacher One			
Avoids eye contact	15	2.50	1.22	11	1.83	.75
Rigid posture	10	1.67	.82	8	1.33	.82
Bites lips	9	1.50	.55	10	1.67	.[illegible]
Speaks softly	18	3.00	1.41	20	3.33	1.[illegible]
Whines	8	1.33	.82	10	1.67	1.63
Frowns	13	2.17	1.33	8	1.33	.82
Bites fingers	6	1.00	.00	10	1.67	1.63
Turns away	20	3.33	1.63	14	2.33	1.51
Pulls nose	8	1.33	.82	8	1.33	.82
Fidgets	22	3.67	1.51	20	3.33	1.21
			Teacher Two			
Avoids eye contact	18	3.00	1.79	8	1.33	.52
Rigid posture	12	2.00	1.26	8	1.33	.82
Bites lips	8	1.33	.52	15	2.50	1.52
Speaks softly	18	3.00	1.41	13	2.17	1.60
Whines	6	1.00	.00	7	1.17	.41
Frowns	12	2.00	1.10	10	1.67	1.21
Bites fingers	11	1.83	1.60	6	1.00	.00
Turns away	16	2.67	1.37	14	2.33	1.51
Pulls nose	7	1.17	.41	6	1.00	.00
Fidgets	16	2.67	.82	18	3.00	.63

APPENDIX H (cont)

Observer Ratings of Child
During Interview

School 2

Variable	Boys (N=6)			Girls (N=6)		
	Sum of Ratings	Mean	S.D.	Sum of Ratings	Mean	S.D.
Teacher One						
Avoids eye contact	15	2.50	1.64	13	2.17	.75
Rigid posture	12	2.00	1.10	9	1.50	.55
Bites lips	6	1.00	.00	7	1.17	.41
Speaks softly	12	2.00	.89	14	2.33	1.75
Whines	6	1.00	.00	6	1.00	.00
Frowns	9	1.50	.84	7	1.17	.41
Bites fingers	8	1.33	.52	15	2.50	1.97
Turns away	11	1.83	.75	13	2.17	.98
Pulls nose	6	1.00	.00	6	1.00	.00
Fidgets	14	2.33	1.03	14	2.33	1.21
Teacher Two						
Avoids eye contact	16	2.67	1.03	15	2.50	1.05
Rigid posture	12	2.00	1.55	14	2.33	1.21
Bites lips	6	1.00	.00	11	1.83	.75
Speaks softly	7	1.17	.41	9	1.50	.55
Whines	6	1.00	.55	6	1.00	.00
Frowns	9	1.50	1.21	7	1.17	.41
Bites fingers	10	1.67	.82	12	2.00	1.10
Turns away	10	1.67	.82	8	1.33	.52
Pulls nose	6	1.00	.00	6	1.00	.00
Fidgets	11	1.83	1.17	19	3.17	1.33

APPENDIX H (cont)

Observer Ratings of Child
During Interview

School 3

Variable	Boys (N=6)			Girls (N=6)		
	Sum of Ratings	Mean	S.D.	Sum of Ratings	Mean	S.D.
Teacher One						
Avoids eye contact	11	1.83	.98	16	2.67	.82
Rigid posture	21	3.50	1.05	16	2.67	1.21
Bites lips	9	1.50	.84	7	1.17	.41
Speaks softly	15	2.50	1.22	16	2.67	1.86
Whines	6	1.00	.00	6	1.00	.00
Frowns	8	1.33	.52	8	1.33	.82
Bites fingers	10	1.67	1.03	8	1.33	.82
Turns away	16	2.67	1.21	14	2.33	1.51
Pulls nose	6	1.00	.00	7	1.17	.41
Fidgets	13	2.17	1.60	9	1.50	.55
Teacher Two						
Avoids eye contact	14	2.33	1.51	14	2.33	1.21
Rigid posture	11	1.83	.41	14	2.33	1.51
Bites lips	8	1.33	.82	6	1.00	.00
Speaks softly	12	2.00	1.26	19	3.17	.98
Whines	6	1.00	.00	6	1.00	.00
Frowns	7	1.17	.41	6	1.00	.00
Bites fingers	6	1.00	.00	7	1.17	.41
Turns away	12	2.00	1.55	11	1.83	.75
Pulls nose	6	1.00	.00	7	1.17	.41
Fidgets	12	2.00	.63	11	1.83	.75