PREPARENT TRAINING: AN EXAMINATION OF PROGRAMMED TEXT INSTRUCTION IN SOCIAL LEARNING THEORY AND PARENTING APPLICATIONS

By

MARK DOUGLAS CUNNINGHAM

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INTRODUCTION

The extent of psychological distress in American society, and the concurrent acute scarcity of mental health manpower, indicates a pressing need for the development of preventive techniques and the utilization of nonprofessionals as change agents (Gribbin, 1975; Guerney, 1969; Hawkins, 1972; LeBow, 1973; McManus, 1973; Salzinger, Feldman, and Portnoy, 1970; Shah, 1969; Tavormina, 1974; Walter and Gilmore, 1973). Training parents, as a way of preventing psychological difficulties in their children, incorporates both of these needs and represents an effective and economical means of intervention and prevention (Clement, 1974; Gelfand and Hartmann, 1968; Guerney, 1969; Tavormina, 1974). Hawkins (1972) asserted that the lack of this systematic parent training and the accompanying failure of parents to provide a consistent, structured environment for their children produces maladjusted children who grow up to become maladjusted adults, and in many cases ineffective parents. Recent statistics would seem to confirm this analysis:

> There's a birth in the nation every 10 seconds; a serious crime every 4. Overall, juveniles commit 30 per cent of those grave crimes. In suburbia they commit 35.2 per cent. Nearly a million predominantly middle-class youth run away from home each year. About the same number of young people drop out of high school; that's a fourth of all who start. Drug and especially alcohol abuse among the young is increasing again. Vandalism is at a new high. The number of suicides by youths aged 15 to 24 years old has gone from 2.7 per 100,000 in 1950 to 10.9 per 100,000 in 1973. Divorces have tied the U.S. record at 4.6 per 1,000. There were 970,000 divorces in 1974. There are now 8.5 million children living in single-parent families (Gribbin, 1975, p. 18).

Hawkins (1972) estimated that from ten to thirty per cent of the population in this country need psychological help. The interpretation is harsh: "Americans make lousy parents. It shows in the way their lousy kids are wrecking society" (Gribbin, 1975, p. 1). As the statistics illustrate, the problem has grown to proportions that inept, though well meaning parents are manufacturing maladjusted children faster than therapeutic manpower can patch them up (Hawkins, 1972). Widespread parent training has become a necessity.

Ideally, a preventive training program should reach parents before their first child is born (Hawkins, 1972; Gribbin, 1975). Currently though, there is no effective, widespread preparenting training program and most people are spending little time in preparing for child rearing (Gribbin, 1975). Gribbin reports that the U.S. Office of Child Development, in an attempt to fill this need, has produced a one-year high school curriculum on parenting that is beginning to receive large scale acceptance. The task is then the continued development of highly explicit preparenting training materials and procedures for mass dissemination, and the validation and standardization of these on the targeted preparent population (O'Dell, 1974; Watson and Bassinger, 1973). Existing techniques must be subjected to controlled clinical trials (Rosen, 1976; O'Dell, 1974). Programmed texts on behavior modification with children are one such technique and have been widely used in parent training. Their utility as a means of mass dissemination of parent training with a preparent population has potential, but as mentioned above, has not been investigated.

REVIEW OF THE LITERATURE

Parent training has been the focal point of research investigating the use of nonprofessionals as mental health change agents (Guerney, 1969; O'Dell, 1974; Shah, 1969). Training has had as many variations as there are theoretical positions, but programs using a behavior modification approach have predominated and are the primary focus of current research efforts (O'Dell, 1974). In reviewing 70 studies produced since 1965, O'Dell identified two primary issues in determining the applicability of training parents in behavior modification: (a) the usefulness of training parents as primary mental health agents, and (b) the role of behavior modification in such training.

Several lines of reasoning suggest that parents are indeed appropriate primary mental health agents. These advantages include:

(a) generalization of treatment effects is facilitated because behaviors are changed in the environment in which they occur (Clement, 1974; Johnson and Katz, 1973; Patterson, McNeal, Hawkins, and Phelps, 1967; Watson and Bassinger, 1973);

(b) parents already have a strong relationship with their child and thus are able to proceed directly to the primary treatment (Clement, 1974);

(c) the parents control many potent reinforcers (Clement, 1974; Gelfand and Hartmann, 1968);

(d) much less professional time is needed to train parents than to treat each child individually, thus reducing cost (Clement, 1974; Gribbin, 1975; Hawkins, 1972);

(e) there are more children needing help than there are professionals available to serve them (Clement, 1974; Gribbin, 1975; Hawkins, 1972; Shah, 1969);

(f) the parents provide a more similar model for the child (Clement, 1974);

(g) training as a therapist increases parents' competence and confidence in dealing with their childrens' problems (Clement, 1974);

(h) when included in the treatment, parents are more likely to aid rather than interfere with the therapeutic effort (Gelfand and Hartmann, 1968);

(i) the parent learns what creates, maintains, and eliminates behavior problems and thus is in a position to prevent future psychological difficulties (Clement, 1974; Hawkins, 1972; Gelfand and Hartmann, 1968; Gribbin, 1975; O'Dell, 1974; Tavormina, 1974; Walder, Cohen, Breiter, Daston, Hirsch, and Leibowitz, 1969).

These advantages suggest that parents should be trained as change agents in child problem areas.

Whether behavior modification is the appropriate content of that training is part of a broader controversy involving the assumptions and technology of behavior modification (O'Dell, 1974). In regard to this controversy, Johnson and Brown (1969) concluded that it has been demonstrated that modifying behavioral contingencies can produce changes in the behavior of individuals who have marked behavioral deficits or excesses, and that nonprofessionals with very limited training can serve as effective contingency managers. Tavormina (1975) evaluated the relative effectiveness of behavioral and reflective group parent counseling and found that the behavioral method resulted in a significantly greater magnitude of improvement. O'Dell also concluded that research evidence suggests that behavior modification approaches have a number of advantages in child treatment and parent training when compared to more traditional models. The advantages include:

(a) the ability for persons unskilled in sophisticated therapy techniques to learn the principles of behavior modification and carry out treatment programs;

(b) the fact that behavior modification is based on empirically derived theory;
(c) many persons can be taught at one time;
(d) only a short training period is usually necessary;
(e) a minimum of professional staff can have more treatment impact than in one-to-one treatment models;
(f) many parents like a treatment model that does not assume 'sick' behavior based on the medical model;
(g) many childhood problems consist of rather well-defined behaviors that are conducive to behavioral treatment;
(h) the applicability of behavior modification in dealing with problems in the natural environment (O'Dell, 1974, p. 419).

The most important support for parent training in behavior modification though is the research demonstrating parents' ability to successfully carry out behavior modification programs with their children (Morrey, 1971; O'Dell, 1974). O'Dell, in his review, concluded that functional relationships between parental contingencies and child behaviors have been empirically demonstrated, and that changes in parental contingency management consistently resulted in dramatic positive changes in the child's behavior. Shah (1969) stated that a considerable amount of literature has accumulated testifying to the effectiveness of training parents in behavior modification techniques. Another review by Johnson and Katz (1973) concluded that evidence from numerous studies indicates that parents can be used effectively to modify their childrens' disruptive behavior. Breiter (1969) also reports that parents of severely disturbed children can, by using behavior modification techniques, produce significant positive changes in their child. Wiltz and Patterson (1974) and Walter and Gilmore (1973) both concluded that behavior modification techniques have repeatedly been successful with a wide variety of children and problems.

Given that parents are appropriate and desirable therapeutic agents, that they can be trained, and that behavior modification theory

and techniques are an appropriate and effective content for this training, the task then becomes the refinement of the technology and the isolation of the relevant treatment variables (O'Dell, 1974; Watson and Bassinger, 1973). O'Dell identifies three of these treatment variables: acquisition of modification skills by the parent and changes in their own behavior; implementation of these changes with the child; and generalization and persistence of these changes. Of the three variables, acquisition by the parent has received the least emphasis. Not enough attention has been given to the way changes in behavior can most effectively be produced in parents (Johnson and Brown, 1968; Weiner, 1974). Many innovative ideas have been demonstrated, but validation is lacking (Berkowitz and Graziano, 1972; Johnson and Katz, 1973; O'Dell, 1974; Watson and Bassinger, 1973).

O'Dell (1974) reports that a large percentage of the studies he reviewed utilized programmed texts to present basic behavioral principles and applications. Berkowitz and Graziano (1972), in a review of 34 studies, also cite programmed texts as being a frequent part of training. The use of programmed instruction in parent training, like the use of behavior modification content, is part of a larger controversy. In this case, it concerns the relative efficiency of programmed texts as an instructional technique. Nash, Muczyk, and Vettori (1971), in a review of over 100 studies on programmed instruction, report that despite an intensive amount of investigation that has taken place, it is difficult to find "two authors who draw the same conclusions about its effectiveness and appropriate role" (p. 397). Their review concluded though that programmed learning has generally been found to be equal to, or better than, alternative methods.

Programmed instruction has been successfully demonstrated in several studies that involved teaching complex behavioral skills, applicable because parent training in behavior modification involves the teaching of complex behavioral social interaction skills. DiMattia and Zimmer (1972) compared a programmed text and a videotape presentation for preparing counselors to discriminate verbal, facial, and voice cues that are associated with the emotion of depression. The criterion instrument consisted of 40, 30-second videotaped segments of 20 depressed and 20 nondepressed scenes. The subjects in the programmed text treatment were significantly more accurate in discriminating depressed segments. DiMattia and Zimmer concluded that complex human behaviors can be incorporated into training programs and that the programmed text is an effective method of providing this training.

Saltmarsh (1973) describes the use of a combination of programmed instruction and tape directed interaction to teach empathetic interviewing skills. This program was reported as providing consistently successful gains in empathetic behaviors for beginning counselors during a four-year period. In the experiment cited, subjects exposed to the combination performed at higher levels of empathy as measured by videotaped segments of the Michigan State Affective Sensitivity Scale (MSASS) immediately following the instructional sequence.

Higgins, Ivey, and Uhlemann (1970) compared the effectiveness of media therapy with a programmed text in teaching skills of direct, mutual communication. Though the media group improved their scores the most, the group that had received only the programmed text was reported as making important changes. Higgins et al. concluded that with more detailed programming and feedback, a completely programmed approach to

direct, mutual communication may be feasible.

As was stated earlier, the incorporation of a programmed text as part of the instructional process in parent training has been common. The programmed text has usually been combined with training sessions, group discussions, therapist interaction, and/or modeling (Mathis, 1971; Walter and Gilmore, 1973; Wiltz and Patterson, 1974). Tavormina (1974) cites Patterson (1971) as emphasizing the necessity of including other training with the programmed text. Patterson (1971) stated that the mere presentation of behavioral principles or parental reading of a programmed text would not in itself change their behavior. Salzinger et al. (1970), in explaining the parents' failure to alter targeted behaviors, also concluded that dissemination of behavior modification information was not enough to effect changes in the parents' behavior.

Johnson and Brown (1969) also employed a programmed text as only a part of the instructional sequence. They reported that the programmed text proved valuable in short cutting and clarifying the instructional process. In contrast to Patterson (1971) and Salzinger et al. (1970) though, Johnson and Brown concluded that most instruction could be effectively done through sophisticated programmed instruction alone. In addition, they suggested that programmed texts on parent training may provide a "research tool to test the role of conceptual and theoretical understanding in effecting appropriate contingency management behavior" (p. 111).

Several studies support the view that a theoretical understanding alone can produce appropriate contingency management behavior. Riebold (1971) conducted a correspondence parent training study that included a programmed text, and a treatment plan with step-by-step instructions on

how to modify a specific troublesome behavior. He found that these materials alone were sufficient to produce positive change in target behaviors without the therapist demonstrations, group training sessions, lectures, consultations, or video-tape feedback that were deemed essential in other studies. McManus (1973) also concluded that instruction to parents in social learning theory and behavioral applications alone was an effective method for altering child behaviors. Rose (1969) suggested that since a learning process is involved, the same techniques can be used to teach parents new behaviors that have proved effective in teaching academic subjects, i.e., programmed instruction. Patterson (1975) cites two studies involving families that were observed both prior to and after the parents read Living With Children: New Methods for Parents and Teachers, Revised Edition (Patterson and Gullion, 1974), a popular programmed text in parent training. In both studies, deviant child responses were significantly reduced without other training methods being applied.

Thus, while programmed texts have shown some promise as a means of communicating behavioral concepts and producing positive behavior change in parents and their children, the findings are mixed. More importantly though, the ability of programmed texts alone to convey social learning concepts and produce behavior change with a preparent population has not been reported in the literature. The need for such preventive techniques for use within a preparent population, however, is well established.

STATEMENT OF THE PROBLEM

Training parents represents a preventive solution to psychological difficulties in both children and adults. Hawkins (1972) and Gribbin (1975) suggested that this training should occur before individuals become parents. Clement (1974) and others have summarized the advantages of using parents as change agents. O'Dell (1974) reviewed some of the advantages of using behavior modification as the content of this training. A considerable amount of literature has accumulated that supports both using parents as therapists and training parents in behavioral techniques. Johnson and Brown (1969) and O'Dell (1974) asserted that research is currently needed to validate existing techniques for assisting parents in their acquisition of behavioral theory and skills. Programmed texts have been widely used as a part of this acquisition and represent a potential means of mass dissemination of parent training. DiMattia and Zimmer (1972), Saltmarsh (1973), and Higgins et al. (1970) reported success in using programmed texts to teach complex behavioral skills. There is, however, currently some controversy as to whether programmed texts can, by themselves, produce the desired change in parenting behaviors. The role of conceptual understanding in the acquisition of parenting behaviors is not clear. Riebold (1971) and Patterson (1975) conducted studies indicating that the conceptual understanding provided by a programmed text is sufficient to generate positive change in the parents and their children. Others have come to different conclusions. If prevention is to receive priority

attention, these issues must be investigated in regard to a preparent population where a preventive program must begin.

The present study proposed to investigate the extent to which a preparent sample would generalize from the conceptual understanding of behavior modification provided by a programmed text to parent-child vignettes in written form and to adult-child/child-child interactions presented in film form. The written form was the Behavioral Vignettes (Hirsch and Breiter, 1967) used by Hirsch and Walder (1969) as a measure of whether parent training subjects had the knowledge and verbal facility to effectively apply behavior modification techniques in their own home. The written measure has not been uncommon in parent training research. O'Dell (1974) states that many studies have used written measures of the parent's knowledge of basic behavior modification principles. Salzinger et al. (1970) found that parents' scores on a written test taken after reading a manual on operant conditioning were highly correlated with their later success in carrying out behavior modification programs. The film measure was segments of Who Did What to Whom? Recognizing Four Behavioral Principles in Action (Mager, 1972). The film has the advantage of presenting all subjects with a standard stimulus situation. DiMattia and Zimmer (1972), Saltmarsh (1973), and Applegate (1971) have used films in a similar manner as a means of assessing the effectiveness of treatment.

This design then permitted evaluation of the extent to which male and female preparent subjects would generalize from the parent-child applications of social learning theory provided by a programmed text, to both written and film situations. In addition, by counterbalancing the mode of situation presentation, an indication of the training

effects of the mode of presentation was available.

It was hypothesized that:

1. Subjects who read the parent training programmed text would generalize from the principles presented in the text to the situations and would score higher than controls on both vignette and film measures.

2. All subjects, both treatment and controls, would reveal a training effect from the measures, scoring higher on the second measure administered than subjects in their group who received that measure initially.

METHOD

Subjects. The subjects were forty male and forty female volunteer undergraduate students enrolled in Introductory Psychology at Oklahoma State University. All students were unmarried preparents, i.e., they were not, nor had they ever been married or parents. Ten males and ten females were randomly assigned to each of four groups. All subjects participated for extra credit.

Materials. The treatment groups received copies of Living With Children: New Methods for Parents and Teachers, Revised Edition (Patterson and Gullion, 1974). This is a 96 page programmed text designed to teach parents social learning principles and applications with their children (see Appendix A). The control groups received copies of a programmed text in the College English area that was matched to the treatment text in terms of general format and number of frames. The written measure was the Behavioral Vignettes (Hirsch and Breiter, 1967). This is a set of ten parent-child vignettes with two short answer questions about each vignette (see Appendix B). The film measure was ten scenes from Who Did What to Whom? Recognizing Four Behavioral Principles in Action (Mager, 1972), a 16mm sound film comprised of forty short social interaction scenes, each depicting one of four behavioral principles in action. The ten scenes comprising the film measure in this study (Scenes 2,7,8,11,12,15,17,25,28, and 38) were selected because they depicted adult-child or child-child interactions. The

principles depicted were: positive reinforcement; negative reinforcement; punishment; and extinction. Three written short answer questions accompanied each of the ten scenes (see Appendix C). Since both measures contained written questions, they will hereafter be referred to as vignettes or film to avoid any confusion.

Procedure. Subjects were recruited by passing a sign-up sheet through several Introductory Psychology classes. To insure that the proposed N would report on the evening of the experiment, more subjects were allowed to sign-up for the study than were utilized. The subjects were provided with slips of paper noting the date, time, and location of the experiment. Upon arriving at the experiment location, all subjects were given a numbered card with space on which to provide identifying information for receipt of extra credit points, and a pencil. Two sets of numbers were used. One set for males and one set for females. Subjects were assigned to groups through a random numbers table. Ten numbers were read aloud. The ten males and ten females holding one of these numbers comprised the first group. This sequence was repeated for the other three groups. Subjects were asked to write down their group number on their card as it was being assigned. It was necessary to repeat this procedure several times, finally having the subjects answer "here" when their number was called before all the subjects attended to and noted their group number. Those subjects whose numbers were not called were dismissed, but did still receive the extra credit points. When all the subjects had noted their group number and the extras had been dismissed, groups 3 and 4 were asked to move to an identical classroom at the other end of the hall (see Appendix D).

Copies of Living With Children were distributed to treatment groups

1 and 2, and copies of a programmed text in the College English area were distributed to control groups 3 and 4. Identical written instructions were provided with both programmed texts. The instructions stated that 90 minutes would be allowed for reading the materials and that questions would follow. The instructions were read orally as well (see Appendix E). A five minute break period was given after 60 minutes and refreshments provided. After 100 minutes of reading, all materials were collected and the measures applied in counterbalanced fashion. The task was performance on the written questions accompanying the vignette and film measures.

Counterbalancing the measures was achieved by instructing groups 2 and 3 to exchange rooms. Groups 2 and 4 then viewed the Who Did What to Whom? scenes and responded in writing to three written short answer questions following each scene (see Appendix F for detailed instructions). Meanwhile, groups 1 and 3, in the other classroom, were given the written Behavioral Vignettes and requested to respond in writing to two questions following each of the ten vignettes (see Appendix G for detailed instructions). When both groups were finished, the materials were transferred and the groups responded to the other mode of situation presentation. Following this procedure, the subjects who had not left immediately after completing the final task were assembled in the original classroom and debriefed. Total time of the experiment was 3 hours 40 minutes. Three persons assisted the experimenter in conducting the experiment.

Statistical Analysis. The short answers from the vignette and film measures were scored with a predetermined key based on a pilot standardization with $N = 40$ for each of the two measures. Each short answer was

scored 2 - complete application of concept, 1 - partial application of concept, or 0 - weak application of concept (see Appendix B and Appendix C for specific scoring criteria). Prior to this scoring, code numbers were assigned to the data by an independent party and two raters used the predetermined key to independently score 20 vignette and film protocols. Pearson Product-Moment Correlations were computed to test for rater reliability. High correlation coefficients were obtained for both vignette ($r = .966$) and film ($r = .902$) scores. A single rater proceeded to score the remainder of the data and then translated the code numbers back into their appropriate groups. The means were obtained and the data was considered as a 2 x 2 x 2 completely randomized factorial analysis of variance. The factors involved were type of programmed text (Living With Children, College English), order of presentation of the task (vignette/film, film/vignette), and sex (male, female). Separate analyses were conducted for written and film measures.

RESULTS

The dependent variables analyzed in this study were scores on the vignette and film measures. Mean values of these variables for each condition are given in Table 1.

The analysis of variance of the film measure data is summarized in Table 2. This analysis indicates that only the main effects for text, F (1,72) = 25.542, $p < .001$, and the text x sex interaction, F (1,72) = 5.243, $p < .05$, obtained significance. The presence of the interaction (see Figure 1) called for some qualification of the main effect and a further examination of the data. Simple main effects of sex for text, and text for sex were conducted and are summarized in Appendix H. These simple main effects indicate that the main effect for text is largely due to a significant difference between the female treatment and control groups, F (1,72) = 26.965, $p < .001$. There is only a trend toward significance between the male treatment and control groups, F (1,72) = 3.820, $p < .10$. In both cases the treatment groups scored higher than controls. In addition, in the treatment condition, females scored significantly higher than males, F (1,72) = 5.178, $p < .05$. This difference between males and females did not hold up under the control conditions.

The analysis of variance of the vignette data is presented in Table 3. This analysis indicates significant main effects for text, F (1,72) = 13.061, $p < .001$, and order, F (1,72) = 4.702, $p < .05$, and significant text x order x sex interaction, F (1,72) = 4.546, $p < .05$. The presence

TABLE 1

MEAN SCORES AS A FUNCTION OF TEXT, ORDER OF TASKS, AND SEX

Condition (N = 10 ea)		Film Sum Score M	Film Sum Score SD	Vignette Sum Score M	Vignette Sum Score SD
Treatment text--Vignette/film					
	Male	31.8	6.015	17.0	8.192
	Female	37.0	4.137	23.8	7.899
Treatment text--Film/vignette					
	Male	33.8	7.539	16.1	6.244
	Female	36.4	7.351	15.2	6.680
Control text----Vignette/film					
	Male	30.3	4.423	15.2	6.070
	Female	26.7	4.762	12.1	2.726
Control text----Film/vignette					
	Male	28.6	4.326	11.9	5.425
	Female	28.9	3.143	12.9	4.408

TABLE 2

ANALYSIS OF VARIANCE: SUM OF FILM SCORES
2 x 2 x 2

Source	SS	df	MS	F	$\hat{\omega}^2$
A (Text)	750.313	1	750.313	25.542***	.23
B (Order of tasks)	4.513	1	4.513	<1	
C (Sex)	25.313	1	25.313	<1	
AB	1.012	1	1.012	<1	
AC	154.012	1	154.012	5.243*	.040
BC	2.112	1	2.112	<1	
ABC	52.813	1	52.813	1.798	
Error	2115.03	72	29.375		
Total	3105.118	79			

*$\underline{p} < .05$

***$\underline{p} < .001$

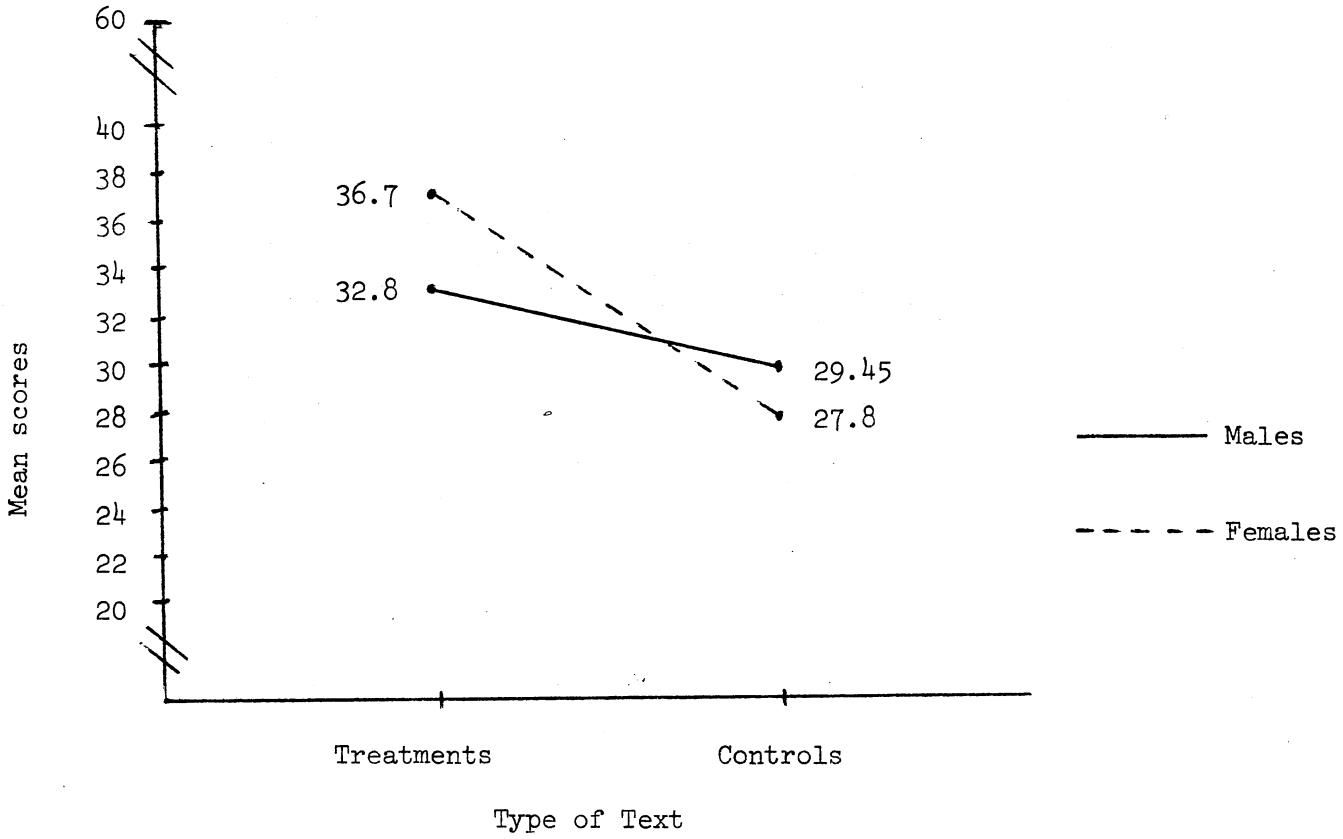

Figure 1. Graphic Representation of the Text x Sex Interaction: Sum of Film Scores

TABLE 3

ANALYSIS OF VARIANCE: SUM OF VIGNETTE SCORES
2 x 2 x 2

Source	SS	df	MS	F	$\hat{\omega}^2$
A (Text)	500.	1	500.	13.061***	.121
B (Order of tasks)	180.	1	180.	4.702*	.037
C (Sex)	18.05	1	18.05	<1	
AB	61.25	1	61.25	1.560	
AC	80.	1	80.	2.090	
BC	16.20	1	16.20	<1	
ABC	174.05	1	174.05	4.546*	.036
Error	2756.4	72	38.283		
Total	3785.95	79			

*$p < .05$

***$p < .001$

of the significant text x order x sex interaction (see Figure 2) called for some qualification of the main effects and a further examination of the data.

Simple simple main effects for texts at all levels of order and sex are summarized in Appendix I. These simple simple main effects indicate that the main effect for text is largely due to a significant difference between female treatment and control groups who received the vignettes first, $\underline{F}$ (1,72) = 17.879, $\underline{p} < .001$. Though in every condition the treatment groups scored higher than their respective controls, no other differences obtained statistical significance. These results are consistent with those reported in the film analysis.

The simple simple main effects for order at all levels of text and sex are summarized in Appendix I and indicate that the main effect for order is largely due to a significant difference between female treatment groups. The female treatment group which received the vignettes first scored significantly higher, $\underline{F}$ (1,72) = 9.660, $\underline{p} < .025$, than the female treatment group which received the vignettes second.

Since there was a significant sex interaction in the film measure analysis, the simple interaction effects of the vignette data at both orders were also investigated and are summarized in Appendix J. There was a significant interaction under the vignette first condition, $\underline{F}$ (1,72) = 6.405, $\underline{p} < .025$, but not under the vignette second condition. A further analysis of the simple simple main effects for sex at both levels of text conditions under the vignette first order condition summarized in Appendix I revealed a significant difference between males and females in the treatment condition such that females scored significantly higher, $\underline{F}$ (1,72) = 6.039, $\underline{p} < .025$. Significance did not obtain

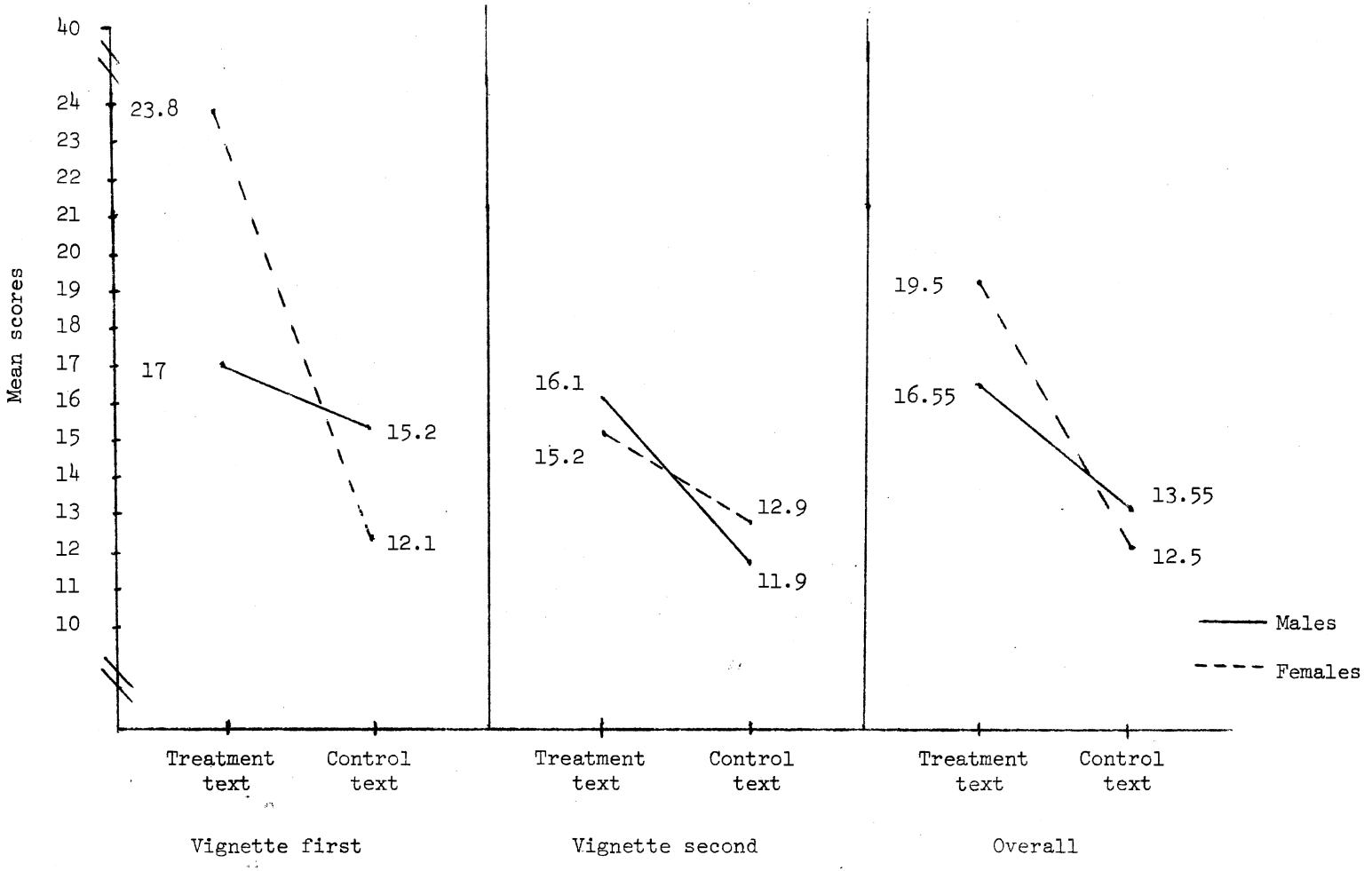

Figure 2. Graphic Representation of the Text x Order x Sex Interaction: Sum of Vignette Scores

for the control conditions. These results are again consistent with the superior female treatment group performance reported in the film analysis.

As a quantitative index of practical significance, $\hat{\omega}^2$s were computed for all significant main and interaction effects and are summarized in Table 2 and Table 3.

DISCUSSION AND CONCLUSIONS

The hypothesis that subjects who read the parent training programmed text would generalize from the principles presented in the text to the parent-child vignettes and adult-child/child-child film interactions, and would score higher than controls on both vignette and film measures was only partially supported. While the four treatment groups scored higher in all conditions than their respective control groups, the difference was statistically significant only for the females on the film measure, and only for the females on the vignette measure who received the vignettes prior to viewing the film.

It is important to note that even where the higher female treatment scores were statistically significant, the difference was not practically significant, a concept stressed by Nash, Muczyk, and Vettori (1971) in examining the effectiveness of programmed instruction. A quantitative index of practical significance was provided by $\hat{\omega}^2$ and in all cases indicated relatively low levels of association strength. The percentage of variance accounted for by treatments and interactions in both analyses was quite small in comparison to the error variance. Thus, while treatment effects were demonstrated, they were not to the extent to indicate that the subjects had a high enough degree of facility with the concepts to effectively apply them to the situations in the measures, much less to effectively apply the techniques in their own homes. The results did not justify the programmed text as an appropriate singular training

technique for a preparent population.

Supported then are the conclusions of Patterson (1971) and Salzinger et al. (1970) that programmed instruction in social learning techniques cannot, by itself, produce the desired change in behavior. The findings are not consistent with those of DiMattia and Zimmer (1972), Saltmarsh (1973), and Higgins et al. (1970) who reported success in using programmed texts alone to teach complex behavioral skills including discrimination of depression, empathetic interviewing skills, and direct mutual communication. The role of conceptual understanding in the acquisition of parenting behaviors remains unclear since the preparent subjects in this study did not demonstrate a high degree of conceptual understanding. What is clear is that the degree of conceptual understanding provided by the programmed text was not sufficient to generate positive change in parenting behaviors, in opposition to the assertions of Riebold (1971) and Patterson (1975) that it would be.

The question of why the subjects did not demonstrate a greater conceptual understanding and perform better on the tasks has only tentative explanations. A lack of verbal facility might have been somewhat responsible for the subjects' not scoring higher on the tasks. Suggestions of poor verbal facility included numerous protocols with blatant misspellings, grammatical errors, and incomprehensible sentences. Some subjects also appeared to have difficulty reading the text at a reasonable rate, even though the text is written for an eighth-grade reading level. This hypothesis is consistent with findings by Salzinger et al. (1970) that verbal ability was highly related to successful implementation of verbal training materials.

A more compelling hypothesis is that the subjects lacked motivation

in learning the materials and concentration in applying them. This hypothesis is supported by the great difficulty encountered in trying to get the subjects to attend long enough to note their group number early in the experiment. Additional support is suggested by the extreme brevity of the protocol answers, even on the film measure where the subject had three minutes between scenes in which to write. This lack of motivation has ramifications extending well beyond the immediate context of this experiment. The question of motivation is central to any consideration of the feasibility of training preparents and of appropriate training techniques. Clearly preparents are not expected to be as motivated to learn parenting techniques as parents with behavior problem children. Techniques which hold the preparent's attention and facilitate imitation are especially indicated. Addressing the question of motivation any more specifically on the basis of this study's data is difficult due to the subjects' levels of haste, fatigue, and anger. These contaminating factors will be considered in the following discussion of the order effects.

The hypothesis that all subjects, both treatment and control, would reveal a training effect from the measures, scoring higher on the second measure administered than subjects in their group who received that measure initially, was not supported. The differences on the film measure, though not significant, were in the opposite direction from those expected in two of four conditions. On the vignette measure, two of four conditions also had nonsignificant differences opposite from those expected. In addition, the female treatment condition had a statistically significant difference opposite from that expected. Thus, the presence of the first measure would appear to have from little or no

facilitating effect to a distinct disabling effect.

A very probable explanation of these effects lies in the temporal aspects of the experiment itself. The experiment had been expected to run three hours. This included ten minutes for the assigning of group numbers and movement to appropriate rooms, ninety minutes for reading the programmed text (allowing 15 seconds a frame), a five minute break period, and thirty-five minutes for each of the two measures. This schedule suffered several delays. Just prior to the outset of the experiment, a campus group attempted to claim one of the unoccupied experiment rooms and five minutes was lost relocating them. The subjects had extreme difficulty attending to the reading of the group numbers such that thirty minutes were consumed placing the subjects into groups rather than ten minutes as had been anticipated. An extra ten minutes was allotted for reading the programmed texts to allow most of the subjects to complete their reading. In all, the delays pushed the experiment from three hours to three hours forty minutes. A number of subjects were quite agitated when requested to remain until the experiment was completed. The absence of the hypothesized order effect may, thus, be due to both fatigue and anger.

Another factor accounting for the significant negative order effect on the vignettes involves the presentation of the measures. The film scenes were presented via projector and screen at three minute intervals. Thus, the subjects had no means to hasten the completion of the measure. The ten vignettes, however, were worked at the subject's own pace. The subjects in the vignette second condition then finished the experiment when they completed the ten vignettes. The lack of a positive order effect on the vignettes may be due to haste, as well as fatigue and

anger. This haste factor apparently had the greatest effect on the vignette scores of the female treatment group that received the film initially.

Explanations of the higher scores obtained by females in comparison to males on both measures under the treatment conditions are at best tentative. One hypothesis could be that the females had greater verbal abilities than the males and, thus, responded more effectively to the verbal nature of the treatment programmed text training. This hypothesis is given additional, though far from conclusive, support when it is noted that the sex difference did not hold up in the control condition where there was no extensive verbal training in parenting techniques. Though based on a different sample, this hypothesis is at least consistent with the female verbal advantage cited by Maccoby and Jacklin (1974) in their extensive review of sex difference research. Another highly tentative hypothesis could be that child rearing practices are much more central to the female's role expectations; hence, the females were more motivated to learn the concepts presented by the treatment programmed text and subsequently apply them to the situations. Of course, a presently unidentified motivational variable might also have effected the males and females differentially. Future research could better examine both the verbal advantage and role expectation hypotheses by appropriate pretesting prior to training.

In summary, the female preparents most effectively generalized from the parent training programmed text to the film and vignette situations, but even here the degree of generalization had limited practical significance. These females did not demonstrate that they had the knowledge to effectively apply behavior modification techniques in their own homes.

Thus, the programmed text was not found to be an appropriate singular training technique for preparents.

The utility of the programmed text and the order effects of the tasks appear to have been negatively affected by the subjects' level of verbal facility, motivation, fatigue, anger, and haste. These same variables are not entirely absent in homes where problem behaviors are occurring and present a problem to any parent training approach. Recognizing and dealing with these variables within the training sessions themselves is central to the design of any effective preparent training program. Certainly briefer instructional and test periods are indicated to minimize the interference of fatigue, anger, and haste effects with the learning process, but this is not the complete solution. Preparent groups which might be more motivated to learn parenting techniques than college freshmen should be investigated. High school students and pregnant mothers both present possibilities. The content of parent training also warrants further investigation. It is possible that approaches other than behavior modification would more effectively produce attitude and behavior change in preparents. In addition, training techniques which are less dependent of verbal facility and more effective in arousing motivation must be developed if preparent training is to realize its preventive potential.

A preparent training film may be one such technique and has several advantages when compared to the programmed text. The film would provide a more interesting stimulus and would more vividly illustrate the principles and applications of current parenting approaches. The film would also facilitate modeling behaviors and minimize the effects of verbal facility. In addition, the film shares the advantage of the programmed

text of wide dissemination potential and utility in group or individual settings. Because of their greater economy, techniques such as the film that are capable of large group application should be investigated prior to small group or individual methods. Though the film has potential as an efficient preparent training technique, it must be subjected to controlled clinical trials with a preparent group population. This is an appropriate focus for future research in parent training.

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APPENDIX A

SAMPLE PAGE FROM LIVING WITH CHILDREN
(Patterson and Gullion, 1974)

3. The second problem many parents have in using reinforcers is that they tend to take desirable behaviors for granted. Desirable behaviors should not be taken for granted, they should be _____.

4. Particularly when a child is first learning, he must be reinforced often. For example, when you are teaching him to wash his face, it might be wise to reinforce him every time. You might do this by saying, "Thank you for _____ your _____." At first, washing his face is not a duty, it is something you are teaching him.

5. In the beginning, the most effective way to teach him is to reinforce him _____ time he washes his face.

6. Also remember to reinforce him as _____ as possible after he washed it.

7. Many of the things we wish to teach a child are much more complicated than hanging up his coat or washing his face. For example, how do you teach a child to be "polite" or to be "a good student"? First, it is necessary to understand that "being a good student" is the last in a long series of steps. As a parent who wishes to teach your child to be a good student, it is necessary for you to figure out what these steps would be. You must decide how you will reinforce him as he works on each of the _____ toward being a good student.

---

3. reinforced 4. washing face 5. every or each

6. soon 7. steps

(page 12)

APPENDIX B

SAMPLE FROM THE BEHAVIORAL VIGNETTES, WITH QUESTIONS AND SCORING CRITERIA

Jeff, 5 years old, was an only child up until recently when his mother gave birth to a daughter. Both the mother and the father are very fond of babies and have been extremely attentive to the new child, just as they were to Jeff when he was an infant. Ever since the baby's birth, however, Jeff has been displaying immature behavior such as, using baby-talk, frequently crying, and asking to be put to bed at night with ceremony. When Jeff does these things, his parents try to meet his demands or else sit down and talk to Jeff to find out what the trouble is since they feel he should be comforted when he is troubled. Jeff's childish behavior improves for a while, but it soon begins again.

A. Why do you think Jeff is exhibiting this behavior?

2 pt.-Response acknowledging that he is reinforced for his behavior by attention from his parents.

1 pt.-Response acknowledging that he wants attention.

0 pt.-Response acknowledging neither of the above.

B. What would you do about the situation if you were the parent?

2 pt.-Response suggesting both ignoring Jeff's immature behaviors and reinforcing appropriate behaviors.

1 pt.-Response acknowledging one of the above.

0 pt.-Response acknowledging neither of the above.

Available from: Leopold O. Walder
Behavioral Service Counselors Inc.
P. O. Box 186
Greenbelt, Maryland 20770

(Vignette 1.)

APPENDIX C

SAMPLE FROM WHO DID WHAT TO WHOM? WITH QUESTIONS

AND SCORING CRITERIA

(Film)

He: (Reading paper with kids shouting all around him. He shouts) All right now. If you don't quiet down I'm going to tar and feather the lot of you!

Kids: (Quiet down and go away.)

He: (Relaxes and returns to paper.)

(Written questions)

A. What's likely to happen in the future?

2 pt.-Response acknowledging that both the father and the children are likely to repeat their behaviors with greater frequency.

1 pt.-Response acknowledging that one of the behaviors will increase.

0 pt.-Response not acknowledging either of the above.

B. What was rewarded here? Explain.

2 pt.-Response acknowledging both the father's shouting and the children's noise making.

1 pt.-Response acknowledging one of the above.

0 pt.-Response not acknowledging either of the above.

C. Did the father handle this situation appropriately? If not, how could he have handled it better?

2 pt.-Response acknowledging that he should not attend to the noise making behavior, but should attend to the children when they act in an appropriate manner. (Both)

1 pt.-Response acknowledging one of the above.

0 pt.-Response not acknowledging either of the above or asserting that the father's response was appropriate.

(Scene #25)

APPENDIX D

INITIAL INSTRUCTIONS

(Oral)

My name is Mark. This is Melinda, Keith, and Faith. We will be conducting the experiment tonight. The experiment will consist of two parts. In the first part, you will be reading material presented in a programmed text format. The second part will be concerned with child rearing practices. Before proceeding: if you are a parent please raise your hand; if you are married please raise your hand; if you cannot stay for the entire experiment please raise your hand. (Anyone raising their hand was sent out into the hall and dismissed after the subjects had begun reading the texts.[1])

Before we begin with the two parts I described, you will be assigned to groups. Each of you will be given a card with a number on it and an initial, M or F, designating your sex. (Cards and pencils distributed) On the back of this card write your name, class instructor, and class time. This information is only to insure that you receive your extra credit points for participating in the experiment. (Waited for them to complete)

I will call out 10 numbers for the first group. If you have one of the numbers called, write a "1" on your card. You are a member of group 1.

---

[1]One subject left at this time because he could not stay for three hours.

This procedure will be repeated for the other groups. Be sure to write down your group number as you are assigned. You will keep this card and your pencil with you throughout the experiment. Are there any questions?

(Group 1 numbers read) You are in group 1.

Group 2. (Group 2 numbers read) You are in group 2.

Group 3. (Group 3 numbers read) You are in group 3.

Group 4. (Group 4 numbers read) You are in group 4.

Everyone whose number was not called, please move out into the hall. Will the 10 males in group 1 please stand up. (Counted and repeated for all groups and sex. When found many counts inaccurate, brought all subjects back in and repeated entire number assigning procedure and count. After two repetitions of reading the numbers, requested all subjects to acknowledge the reading of their number by answering "here".)

Groups 3 and 4 please report to the classroom at the other end of the hall, MS 108. The experiment has now begun, please move quickly and quietly to the other room if you are in groups 3 or 4.

APPENDIX E

INSTRUCTIONS ACCOMPANYING PROGRAMMED TEXTS

(Oral)

Please look at your card and be sure that you are in either group 3 or 4 (for controls, 1 or 2 for treatments). We will now pass out the materials. Do not open them until you are instructed to do so. (Instructions and materials distributed.) Please read along with me. . .

(Written)

In this segment of the experiment, you will be learning material presented in a programmed text format. This is a special kind of writing. All of the main ideas have been broken down into small units or items. You are asked to respond actively to these items, rather than merely reading them. For each of these units you will write an answer. You will be able to check your answer immediately with the one provided.

This is not a test. It is a way for you to learn. The questions are planned to encourage you to supply the right answer. Read each statement carefully. Write what you think belongs in the blank space in the book. The words at the bottom or side of each page are our suggested answer to each of the items. Use the folded sheet of paper to cover the answers until you have written your own response. (Try not to peek at the next answer!) Then compare it with the one provided. If your response is different, think about the difference in meaning. Do not erase, but write the suggested response beneath yours. They may

mean the same thing. Then continue with the next item.

At the end of 60 minutes, I will ask how many of you are finished and we will take a short break. At most, you will be working on these materials 90 minutes. Following this, we will go on to the other segments of the experiment. Are there any questions? You may begin.

(At the end of 60 minutes) (Oral)

You have now been working 60 minutes. How many of you are finished? We will take a very brief break. You may stand up and stretch. There are restrooms in the hall. Please resume working as quickly as possible. Cokes will be served to you at your seat which you may drink as you work. Do not discuss any aspect of the experiment with the other participants.

(Refreshments served)

(At end of 100 minutes) (Oral)

We are now finished with this segment of the experiment. Please pass your materials to the aisles. (Materials collected) When I instruct you, group 3 (for controls, group 2 for treatments) will move quietly and go to the classroom at the other end of the hall. Go down the right hand hall. Do not talk and wait at the door. When you are allowed to enter, take a seat where you can clearly see the screen. Please move now.

APPENDIX F

INSTRUCTIONS ACCOMPANYING THE FILM MEASURE

(Oral)

Please look at your card and be sure that you are in group 2 or 4 (film first only). We will now pass out the materials. Do not turn them over until you are instructed to do so. (Materials distributed) Turn the materials over and write your card number, group number, and sex at the top of the instruction sheet. Please read along with me....

(Written)

In this segment of the experiment you will be viewing 10 short film scenes. These scenes depict typical situations involving interactions between two or more people. Of course, in many cases, events have happened leading up to the scenes you will view, but your primary attention should be given to the actual interactions depicted in each scene.

The 10 scenes will be shown one at a time. Pay close attention as the scenes are quite brief. Immediately after each scene, you are to turn to the next page and write your answer to three questions regarding the scene you have just viewed. These questions can be answered in several sentences or less. You will have 3 minutes in which to write your answers. While you are answering these questions, I will be cueing up the projector for the next scene. At the end of the allotted time, you will be alerted and we will proceed to the next scene. Do not look

ahead to the questions over scenes we have not viewed, or back to those you have already answered. Please do your own work and do not discuss the scenes with other participants. This study will be useful only if you concentrate on the scenes and answer the questions seriously. Are there any questions?

Before we begin, I will present a practice scene to familiarize you with the nature of the scenes. (View practice scene) Are there any questions about what you are to do?

We will now view the first scene. When it is finished, turn the page and answer the questions. The first scene. (Subsequent scenes were prefaced by 'the next scene')

(At completion) (Oral)

You may stand and stretch if you like, but do not talk. There are restrooms in the hall. If you go out, please return promptly as we are now ready to proceed with the next segment of the experiment. Please check to see that you noted your number, group, and sex at the top of the instruction sheet.

APPENDIX G

INSTRUCTIONS ACCOMPANYING THE VIGNETTE MEASURE

(Oral)

Please look at your card and be sure that you are in group 1 or 3 (vignette first only). We will now pass out the materials. Do not turn them over until you are instructed to do so. (Materials distributed) Turn the materials over and write your card number, group number and sex at the top of the instruction sheet. Please read along with me.

(Written)

In this segment of the experiment you will be reading 10 very brief parent-child stories depicting problems within families. Two questions follow each story. Each question can be answered in several sentences. When you have finished the questions on one story, go on to the next one. Work through the stories in order, not skipping any.

When I tell you to begin, please read the stories carefully, consider the questions, and write your answer. You may work at your own pace. Close the materials and put your pencil on the table when you have finished all the stories and questions.

(At completion) (Oral)

You may stand and stretch if you like, but do not talk. There are restrooms in the hall. If you go out, please return promptly as we are now ready to proceed with the next segment of the experiment. Please

check to see that you noted your number, group, and sex at the top of the instruction sheet.

APPENDIX H

SIMPLE MAIN EFFECTS OF TEXT x SEX INTERACTION:

SUM OF FILM SCORES

Source	SS	df	MS	F
SS_A at c_1[1]	112.225	1	112.225	3.820
SS_A at c_2	792.1	1	792.1	26.965***
SS_C at a_1	152.1	1	152.1	5.178*
SS_C at a_2	27.225	1	27.225	<1
Error	2115.03	72	29.375	

*$p < .05$

***$p < .001$

[1] a_1 = Treatment text a_2 = Control text

b_1 = Vignette/film b_2 = Film/vignette

c_1 = Males c_2 = Females

APPENDIX I

SIMPLE SIMPLE MAIN EFFECTS OF TEXT x ORDER x SEX

INTERACTION: SUM OF VIGNETTE SCORES

Source	SS	df	MS	F
SS_A at bc_{11} [1]	16.2	1	16.2	<1
SS_A at bc_{12}	684.45	1	684.45	17.879***
SS_A at bc_{21}	88.2	1	88.2	2.304
SS_A at bc_{22}	26.45	1	26.45	<1
SS_B at ac_{11}	4.05	1	4.05	<1
SS_B at ac_{12}	369.8	1	369.8	9.660**
SS_B at ac_{21}	54.45	1	54.45	1.422
SS_B at ac_{22}	3.2	1	3.2	<1
SS_C at ab_{11}	231.2	1	231.2	6.039**
SS_C at ab_{21}	48.05	1	48.05	1.255
Error	2756.4	72	38.283	

**$\underline{p} < .025$

***$\underline{p} < .001$

[1] a_1 = Treatment text a_2 = Control text

b_1 = Vignette/film b_2 = Film/vignette

c_1 = Males c_2 = Females

APPENDIX J

SIMPLE INTERACTION EFFECTS OF TEXT x ORDER x SEX

INTERACTION: SUM OF VIGNETTE SCORES

Source	SS	df	MS	F
SS_{AC} at b_1 [1]	245.205	1	245.205	6.405**
SS_{AC} at b_2	9.025	1	9.025	<1
Error	2756.4	72	38.283	

**$\underline{p} < .025$

[1] a_1 = Treatment text a_2 = Control text

b_1 = Vignette/film b_2 = Film/vignette

c_1 = Males c_2 = Females

VITA

Mark Douglas Cunningham

Candidate for the Degree of

Master of Science

Thesis: PREPARENT TRAINING: AN EXAMINATION OF PROGRAMMED TEXT INSTRUCTION IN SOCIAL LEARNING THEORY AND PARENTING APPLICATIONS

Major Field: Psychology

Biographical:

Personal Data: Born in Dallas, Texas, September 3, 1951, the son of Jay H. and Lucille W. Cunningham; married Melinda Eve Brittain, August 2, 1975.

Education: Graduated from Westbury Senior High School, Houston, Texas in May, 1969; received Bachelor of Arts degree, magna cum laude, in Psychology and Mass Communications from Abilene Christian College, Abilene, Texas in May, 1973; enrolled in Master's program at Oklahoma State University, 1973-1976; completed requirements for the Degree of Master of Science in December, 1976.

Professional Experience: Teaching Assistant, Department of Psychology, Oklahoma State University, 1974-1976; Psychological Associate, Psychological Services Center, Stillwater, Oklahoma, 1973-1974, 1975-1976; Psychological Associate, Payne County Guidance Center, Stillwater, Oklahoma, 1974-1975.