PARENT TRAINING AND GUIDED IMAGERY: COMPARISON OF A
TRADITIONAL AND A MODIFIED STEP PROGRAM

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Dianne M. Smith, B. A., M. A.

Denton, Texas

December, 1993
PARENT TRAINING AND GUIDED IMAGERY: COMPARISON OF A
TRADITIONAL AND A MODIFIED STEP PROGRAM

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Dianne M. Smith, B. A., M. A.
Denton, Texas
December, 1993
The effectiveness of guided imagery as an enhancement to the Systematic Training for Effective Parenting (STEP) program was explored during a shortened 8-week program using three parent groups of elementary-age students matched for parent training experience and couple participation: a) an imagery-modified STEP group (STEP-Im, n = 14); b) a traditional STEP group (STEP, n = 14); and c) a drop-out comparison group (n = 10). Guided imagery consisted of centering exercise(s) for focus and concentration; structured imagery of Adlerian concepts; and open-ended role-assumption imagery for clarifying personal values, the perspectives of others, and concept practice.

Hypotheses predicted that the STEP-Im group would out-perform other groups on a) attitude change from pretest to posttest on the five scales of the Parent Attitude Survey (PAS); b) number of of STEP handbook chapters read; and c) number of times concepts were practiced with a target child. Also hypothesized was a relationship between time spent on imagery homework and attitude change. A research question addressed treatment group experiential differences.

Multivariate testing using PAS pretest scores as covariates showed greater attitude change by the STEP-Im group over the drop-out group at the .0005 level (one-tailed). ANCOVA results revealed statistically significant differences on all but the acceptance scale which showed significance at the .07 level (one-tailed). The Approximate
Randomization Technique (Noreen, 1989) revealed a directional joint probability of .01 for changes as great as that observed between the treatment groups in this study. Differences on the understanding scale showed the least likelihood of having occurred by chance. Analyses using t-tests revealed differences on concept practice at the .001 level (one-tailed); no differences were observed on attendance or completion of reading assignments. Regression results showed no relationship between imagery practice and attitude change, suggesting that classroom imagery is sufficient to enhance the influence of STEP. Observed and experiential differences were characterized by greater imagery group cohesiveness and more pervasive personal growth.
ACKNOWLEDGEMENTS

Thanks are due to many people: Dr. Robert S. Hanson pastor of the Trinity Presbyterian Church for allowing the use of church facilities for this study; Carol Fisher, an elementary school administrator, for allowing the dispensing of information regarding the program and study; Amy L’Neill for assistance with both data collection and program leadership; Ross Darrow (U.S. Air) for statistical advice; my husband Barry C. Smith (American Airline Decision Technologies) for probability and computer advice and assistance, and to my committee and major professor, Dr. Bobbie L. Wilborn.

On a more personal note, I would like to express my sincere thanks to my mother, Jean McCarley, who has always supported me in anything I attempted and who assisted with this project by babysitting, making coffee, washing dishes, collecting data, working many of my hours at our business, and by listening.

I would also like to give a special thanks to my husband Barry for his loving support and patience throughout my lengthy graduate study. Without his continued support, encouragement, and at times outright insistence for beginning this thesis and his continued technical assistance throughout the project, this work probably never would have been accomplished.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>ix</td>
</tr>
<tr>
<td><strong>Chapter</strong></td>
<td></td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td></td>
</tr>
<tr>
<td>Related Literature</td>
<td></td>
</tr>
<tr>
<td>Adlerian Parent Training</td>
<td></td>
</tr>
<tr>
<td>Guided Imagery</td>
<td></td>
</tr>
<tr>
<td>2. PROCEDURES</td>
<td>24</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td></td>
</tr>
<tr>
<td>Research Question</td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
<td></td>
</tr>
<tr>
<td>Instrumentation</td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
</tr>
<tr>
<td>Collection of Data</td>
<td></td>
</tr>
<tr>
<td>3. RESULTS AND DISCUSSION</td>
<td>35</td>
</tr>
<tr>
<td>Analysis of Data</td>
<td></td>
</tr>
<tr>
<td>General Findings and Methodology</td>
<td></td>
</tr>
<tr>
<td>Hypotheses Results</td>
<td></td>
</tr>
<tr>
<td>Summary of Findings</td>
<td></td>
</tr>
<tr>
<td>Discussion and Conclusions</td>
<td></td>
</tr>
<tr>
<td>Recommendations</td>
<td></td>
</tr>
<tr>
<td><strong>APPENDIX</strong></td>
<td></td>
</tr>
<tr>
<td>A: Informed Consent</td>
<td>76</td>
</tr>
<tr>
<td>B: Parent Training Program Data Sheet</td>
<td>79</td>
</tr>
<tr>
<td>C: Session Agendas for Treatment Groups</td>
<td>82</td>
</tr>
</tbody>
</table>
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PAS pretest statistics for three research groups (initial participants)</td>
<td>36</td>
</tr>
<tr>
<td>2. ANOVA results of PAS pretest scores for three research groups and two treatment groups (initial participants)</td>
<td>36</td>
</tr>
<tr>
<td>3. PAS Pretest statistics for three research groups (participants completing program)</td>
<td>37</td>
</tr>
<tr>
<td>4. ANOVA results of PAS Pretest scores for three research groups and two treatment groups (participants completing program)</td>
<td>38</td>
</tr>
<tr>
<td>5. PAS Pretest statistics for three research groups (participants completing program with outlier data removed)</td>
<td>39</td>
</tr>
<tr>
<td>6. ANOVA results of PAS pretest scores for three research groups and two treatment groups (participants completing program with outlier data removed)</td>
<td>39</td>
</tr>
<tr>
<td>7. Demographic statistics for three research groups</td>
<td>40</td>
</tr>
<tr>
<td>8. PAS posttest statistics for three research groups (outlier data included)</td>
<td>42</td>
</tr>
<tr>
<td>9. PAS posttest statistics for three research groups (outlier data removed)</td>
<td>42</td>
</tr>
<tr>
<td>10. PAS change score statistics for three research groups (outlier data included)</td>
<td>43</td>
</tr>
<tr>
<td>11. PAS change score statistics for three research groups (outlier data removed)</td>
<td>43</td>
</tr>
<tr>
<td>12. ANCOVA results of PAS pretest scores and attitude change, and ANCOVA results of attitude changes for three research groups</td>
<td>45</td>
</tr>
</tbody>
</table>
13. ANCOVA results of PAS pretest scores and attitude change, and ANCOVA results of group differences in attitude change  
   
14. ANCOVA results of PAS pretest scores and attitude change, and ANCOVA results of group differences in attitude change  
   
15. ANCOVA results of PAS pretest scores and attitude change, and ANCOVA results of group differences in attitude change  
   
16. MANCOVA results of PAS changes score differences between STEP and drop-out groups  
   
17. MANCOVA results of PAS change scores differences between STEP-Im and traditional STEP groups  
   
18. Covariance matrix for traditional STEP group with outlier data included (n = 14)  
   
19. Covariance matrix for STEP-Im group (n = 14)  
   
20. Covariance matrix for STEP group with outlier data removed (n = 12)  
   
21. Covariance matrix for STEP-Im group (n = 14)  
   
22. Comparison of ART/ANCOVA and joint probability/MANCOVA results for PAS change score differences between two treatment groups  
   
23. Hypothesis 2 -- Attendance statistics, and t-test results PAS change score results for two treatment groups  
   
24. Hypothesis 3 -- Reading assignment completion statistics, and t-test results for STEP-Im and STEP groups  
   
25. Hypothesis 4 -- Concept practice statistics, and t-test results for STEP-Im and STEP groups  
   
26. Hypothesis 5 -- Regression analysis and multivariate test results of attitude change and time spent on imagery homework  

viii
# LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Standardized participant change score sum in relation to standardized pretest sum for STEP (G1) and STEP-Im (G2) groups</td>
<td>49</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

The family continues to gain the attention of behavioral and social scientists, as well as educators, who are concerned about the impact of contemporary values, changing lifestyles, and child rearing practices on this basic institution. Growing social problems which affect our youth, such as child abuse, teenage pregnancy, teen suicide, cults, gangs, and drug dependency, and the increasing numbers of arrests of children for serious crimes such as murder, rape, vandalism, and drug trafficking, intensify the concern among educators and mental health professionals regarding the need for better parent education (Dinkmeyer & Dinkmeyer, 1981; Hitchcock, 1987; Richman, 1992).

Many families cope successfully with family problems and approach relationships realistically. Other families have few communication skills, hold unrealistic expectations regarding their children's behavior, and possess few positive strategies for coping with problems. Parent education can provide assistance to these families by helping them learn to deal with child and family issues more effectively in a setting of mutual encouragement and support (Miller & Myer-Walls, 1983).

Over the last 30 years, many articles and books have been published debating methods and espousing parent education programs. These parent education programs are aimed at helping parents learn to cope more effectively with their children and to produce more responsibly behaving children (Abidin, 1980; Baumrind, 1975; Dinkmeyer & McKay, 1989; Dreikurs & Soltz, 1964; Ginott, 1965; Gordon, 1975; Popkin, 1987). An increasing number of projects have been undertaken in recent years to test, verify compare, and attempt to
expand upon the effectiveness of parent education programs (Dinkmeyer & McKay, 1989; Popkin, 1987). Over the years parent education research has shown that changes occur (a) in parental attitudes toward child-rearing (Croake, 1983; Dembo, Sweitzer & Lauritzen, 1985; Kottman & Wilborn, 1992); (b) in actual child-rearing practices (Croake, 1983; Misja, 1981), and (c) in children's behavior (Croake, 1983; Misja, 1981). As society and family life become increasingly complex, parent training programs continue to be researched, updated technologically, and administered to more diverse and defined populations in order to judge their effectiveness and to better serve their recipients (Brooks, et al 1988; Dinkmeyer & McKay, 1983; Hwang, 1988; Latson, 1985). It is clear that there is both a need for and a continued interest in developing more effective and less expensive parent training methods to help parents cope with the difficult job of rearing their children (Abidin, 1980; Curran, 1989; Dinkmeyer & Dinkmeyer, 1981).

The Adlerian approach to parent education, which is based on the principles of Individual Psychology (Adler, 1930), has been the inspiration and framework for several study group and parent training programs (Dreikurs & Soltz, 1964; Dinkmeyer & McKay, 1989; Popkin, 1987). These Adlerian parenting programs are based on more democratic, less autocratic attitudes toward parenting. They teach parents how to teach their children responsible behavior through the use of encouragement, natural and logical consequences, better communication skills, and consistency (Croake, 1983). Adlerian parent education groups and programs are founded on group encouragement and the recognition of the commonality of problems (Miller & Myers-Walls, 1983).

The parent training program known as Systematic Training for Effective Parenting (STEP) was created by Dinkmeyer and McKay in the mid-seventies (1989). Research on this training program has yielded encouraging results (Croake, 1983, Dembo et al., 1985). STEP has been found to be effective in changing parental attitudes (Carney, 1985; Hwang,
1988; Williams, Omizo, & Abrams, 1984), and changing child rearing practices (Carney, 1985; Croake & Hinckle, 1983). Results have been mixed; some studies have demonstrated significant change in children's behavior as perceived by their parents (Carney, 1985; Hwang, 1988), while other studies have shown little or no change (Krieg, 1985).

While STEP has proven to be effective at changing attitudes at program completion for a Korean sample (Hwang, 1988), an Australian sample (Grosvenor & Steele, 1984), and an Hispanic group (Villegas, 1978), it should be noted that most studies have utilized middle-class Caucasian samples. Little information exists on its applicability and long-term influence with different cultural populations.

After 50 years of disrepute based on Freud's (1955) conclusion that imagery is a primary process function and a regressive defense phenomenon, a renewed interest in imagery has emerged with the movement toward an eclectic cognitive-behavioral approach to counseling and psychotherapy and with new developments and discoveries in brain research and health psychology. Imagery is now being used to expand human potential and possibilities by increasing self-awareness and awareness of others, future and career planning and life-style development; gaining control over undesirable behavior, treating illness, improving learning, skill development, and performance, reducing stress and enhancing health, and enhancing creativity and problem solving in everyday life (Cohen & Twemlow, 1981; Witmer & Young, 1985). Some form of imagery production is now being practiced in virtually all approaches to counseling and psychotherapy (Sheikh & Jordan, 1983; Wixson, 1986), including the Adlerian approach (Mosak & Dreikurs, 1973; Wheeler, 1982, Witmer & Young, 1985).

Guided imagery is used as a tool of intervention in psychiatric and counseling settings as well as educational settings (Galyean, 1983; Richardson, 1982; Sheikh & Jordan, 1983). Guided imagery techniques are being used to varying degrees in the successful treatment of
psychiatric and behavioral disorders such as depression, sexual problems, chronic pain, various phobias and anxieties, psychosomatic problems, and schizophrenia (Wixson, 1986). Guided imagery is also being used with children in educational settings to ready students for learning, to facilitate decision making, clarify values, aid in memorization, help incorporate behavioral outcomes of teaching, and reinforce cognitive concepts (Galyean, 1983; Richardson, 1982).

The rationale for using imagery as a tool for therapeutic intervention has been described by Sheikh and Jordan (1983), and further clarified by Witmer and Young (1985). Sheikh and Jordan have found that experiencing something in imagery is very much the same, psychologically, as experiencing it in actuality because imagery and perception are experientially and neurophysiologically comparable. They have concluded that images act as sources of motivation for future behavior, because goals and solutions rehearsed through imagery during therapy seem to apply outside the therapy sessions. Imagery seems to be the main access to important events occurring early in life, prior to language. Imagery tends to evoke very intense affective states and emotional reactions which get at the subjective meaning of the event. These rationales for imagery appeal especially to Adlerian educators and counselors who also hold that early recollections and emotions are indices of present attitudes, beliefs, and motives which influence behavior (Mosak, 1958). Sheikh and Jordan have further reasoned that because imagery has the power to produce a variety of physiological changes, it may be the only practical way to develop control over the autonomic nervous system. Images tend to bypass the defenses and the usual inhibitions that often occur verbally, and to open up new areas of exploration in therapy. Sheikh and Jordan have also noted that guided imagery often produces therapeutic change in the absence of any interpretation by the therapist or intellectual insight by the client.
The rationale for using imagery as a tool for educational intervention is clarified by Richardson's (1982) findings of student performance and reaction to the techniques. Richardson has found that students are able to clarify their values and identify how their values come to them, renew their spiritual dimension and evaluate their behaviors in accordance with these spiritual roots, and retain images of concepts which help them remember longer and help them know the logical course in making decisions and having confidence in their decisions. In addition, his students have reported that imagery makes learning more fun, holds their interest longer, and makes them feel that they have the major responsibility for learning and being more active in the process.

Galyean (1985) has found that educators ordinarily use visualization and guided imagery with elementary and secondary students in one or more of four ways: (a) as a means of relaxing, focusing, and preparing students for learning; (b) for teaching basic subject matter (referred to as guided cognitive imagery); (c) as a means of increasing awareness of inner senses and feelings, expanding inner cognizance of personal images and symbols, resolving conflicts introspectively, and sorting out and strengthening personal values and belief systems (referred to as guided affective imagery); and (d) as a means of recognizing and working with altered states of consciousness, probing the spiritual, mystical, and transcendental aspects of life, and experiencing concepts such as beauty and love (referred to as guided transpersonal imagery). Galyean has found that the results of researchers and teachers using guided imagery on a regular basis are encouraging. In addition to positive empirical findings with regard to academic achievement, improved test-taking skills, increased divergent thinking, decreased frequencies of disruptive behaviors, and increased proficiency in oral and written communication skills, numerous educators have reported that students seem to be more attentive and involved in the work being done in class, learn more of the material and enjoy the learning experiences more, do more original work and feel
more confident, get along better with and be more helpful toward their classmates, be more relaxed and do better on tests. Galyean has concluded that guided imagery can contribute to: (a) "cognitive areas of academic-skills acquisition and proficiency," (b) "affective areas of attention, creativity, initiative, listening, and self-esteem"; and (c) "the interpersonal area of cohesiveness" (p. 173). Although neither Richardson nor Galyean has used guided imagery with parent education groups, similar findings with this population could contribute significantly to the field of parent education.

Only two studies described in the literature have used guided imagery with parent education groups. Lupin, Braud, Braud & Duer (1976) used guided imagery tapes to enhance the relaxation of parents of hyperactive children in order to help them learn to relax and deal with their children's behavior in a more positive and effective manner. In a clinical report, Wheeler (1982) described the use of guided fantasy in helping parents clarify family values and identify how strong beliefs can get in the way of passing along family values to children. Because guided imagery has been a helpful tool in increasing self-awareness and awareness of others (Galyean, 1983; Richardson, 1982), gaining control over undesirable behavior (Witmer & Young, 1985), improving learning and skill development (Richardson, 1982; Galyean, 1985), and in counseling and educating parents (Wheeler, 1982), it appears to have considerable utility as an effective teaching device for counselor led Adlerian parenting groups.

Abidin (1980), who created the Parenting Stress Index (PSI), has warned that parent education programs and activities must "have the dual effect of releasing human potential while developing specific skills and attitudes" (p. 109). The author of the test believes that a successful parent education program must enhance parents' self-respect and feelings of competence. All programs and program leaders, of course, try to release human potential and motivate their participants. Techniques such as encouragement, group discussion, and
role-play are attempts to strengthen specific skills and attitudes and motivate parents to try the new methods they learn (Dinkmeyer & McKay, 1989). While role-play techniques are undoubtedly helpful and may stimulate rather personalized mental images for some participants, many participants may feel uncomfortable with role-play or may have difficulty generalizing another parent's interpretation of a program-chosen situation to their personal situation. Results of study by Wilmes-Reitz (1983) suggested that role-playing methodology may be linked to increased use of firm control and with lower levels of attendance. Guided imagery role-assumption may be a more powerful and attractive alternative than role-play because it individualizes and personalizes the experience to a greater degree (Richardson, 1982), and allows the participant to image more deeply personal material without self-disclosure. Role-assumption and guided imagery may better serve the needs of parents, as specified by Abidin (1980), by enhancing self-regard and self-acceptance (Cohen & Twemlow, 1981), and releasing human potential (Witmer & Young, 1985), while teaching specific skills and attitudes (Croake, 1983; Dembo et al. 1985). Guided imagery may be more effective at teaching new skills by helping parents clarify family values and long-held attitudes and beliefs, altering perceptions of themselves and their children, and learning more useful methods of interacting (Galyean, 1985; Wheeler, 1982).

Statement of the Problem

Guided imagery is regarded as a legitimate counseling and educational tool which enhances learning, feelings of control, awareness of self and others, and the release of human potential. Despite its demonstrated effectiveness with various populations, only two studies using guided imagery with parent training have been found in the clinical literature, and only one of those studies used Adlerian parent training. That study used only one
limited guided imagery technique, and did not examine its effectiveness in any systematic way.

For this study, several well-defined guided imagery techniques were designed and incorporated in a STEP program. The modified program was developed to determine if a STEP program utilizing guided imagery could be significantly more effective at altering parental attitudes. To further explore the effectiveness of the imagery technique in parent training, the modified program was compared with a traditional program and a non-attending comparison group to determine if the imagery technique could enhance motivation as reflected by increased participant attendance and completion of homework assignments.

Related Literature

Four areas of literature were reviewed: (a) research findings related to Adlerian parent education and the STEP program with regards to child-rearing attitudes and role-playing, (b) applicability and limitations of STEP with diverse cultures, (c) suggested guidelines and strategies in the literature and findings related to guided imagery as a counseling and teaching technique, and (d) studies using guided imagery techniques to teach parenting.

Adlerian Parent Education

Croake (1983) included the STEP program with the Dreikursian mother study group approach in his review of several Adlerian parent education studies because the philosophy and recommended child-rearing methods are the same. The STEP program was based on Adlerian philosophy as interpreted by Rudolph Dreikurs (1964). Dreikurs formulated several essential elements in working with families: (a) children's misbehaviors are purposive goals in terms of family position and response, and can be remediated following successful understanding of the purpose; (b) democracy necessitates disciplinary methods
which encourage social interest such as natural and logical consequences rather than punishment; (c) because humans are social and their problems are interpersonal rather than intrapsychic, the family or family council is the best setting for teaching democratic problem solving, cooperation, and social interest; (d) because modern society has forced adolescents into more economically dependent positions, creating antagonisms, natural consequences are more useful than logical ones, and the goals of misbehavior are more related to the peer status than to family position or response.

Croake (1983) found in his review of Adlerian parent education studies that significant changes toward more democratic and less authoritarian attitudes have occurred on both the Parental Attitude Research Instrument (PARI) and the Attitude Toward the Freedom of Children-Scale II (ATFC-II). In his review of child-rearing practices and children's behavior, Croake found that parental and children's behavior specific to Adlerian theory was "in the expected direction without concomitant changes in control groups" (p. 69).

In a review of 48 studies, Dembo et al. (1985) compared behavioral parent training, Parent Effectiveness Training (PET), and Adlerian parent training. Of the 10 Adlerian studies reviewed, 7 used the parent study group format, and 3 used STEP, with length of study varying from 6 to 10 weekly sessions. The major instruments to assess change in the Adlerian studies were the ATFC-II to assess the level of democratic attitudes toward child-rearing, the Child Rearing Practices Scale (CRPS) to assess the level of democratic child-rearing practices, and the Children's Behavior Checklist (CBC) to assess children's bothersome behavior. Dembo et al. found that child-rearing attitudes are positively influenced toward a more democratic style by Adlerian parent education programs, but that there is little to indicate that children's behavior actually changes as a result of their parent's Adlerian training. The reviewers found changes in child-rearing practices toward a more
democratic style to be mixed, especially when the CRS was employed. More direct methods of observation have yielded more encouraging results.

Nystul (1982) compared the effects of the STEP program on the parenting attitudes of 14 Australian mothers and 14 control-wait group mothers using the Attitude Toward the Freedom of Children-Scale II (ATFC-II) and the Parent Attitude Research Instrument QR (PARI Q4). Subjects were randomly assigned to either the treatment or control-wait groups, and seven out of nine weekly sessions were required for treatment group participant data to be included in the analysis. The 14 treatment group participants were divided into two groups, which were each led by a female graduate student in psychology who was assisted by a third year undergraduate. The group leaders and assistants received a 1-day orientation on the STEP program. A one-way analysis of variance was used to analyze the data. STEP participant mothers demonstrated more democratic child-rearing attitudes. They showed a significantly higher tendency to encourage verbalization in their children and a significantly lower tendency to be strict.

Kozlowski (1978) evaluated the effectiveness of the STEP program in changing parental attitudes using the Parent Attitude Survey (PAS) pre- and post-treatment. Forty volunteer parents were assigned to a STEP treatment group \( n = 14 \) and a control group \( n = 16 \). The attitude survey was administered to volunteers 1 week before the program began, at the conclusion of the program, and again, 8 weeks later. Kozlowski used an analysis of covariance and t-tests at the .05 alpha level to analyze the data. The STEP program participants scored significantly higher than the control group on the causation, trust, and understanding scales. The confidence variable did not show a significant advantage for the STEP group until the follow-up measure was taken. Although the three initially significant scales had deteriorated by the 8-week follow-up, the trust and causation scales remained above their initial levels.
Summerlin and Ward (1981) examined the effect of STEP group participation on the parenting attitudes of 26 parents (5 males, 21 females) of kindergarten and 2nd-grade students. The control group consisted of 24 subjects (8 fathers, 16 mothers). Research groups were formed by random assignment. The experimental group participated in a six-session study group of STEP. At the conclusion of the sessions, both groups were administered the PAS which measures attitudes in five areas judged to be important to parent-child relations: parent confidence, causation of the child's behavior, acceptance of the child's behavior, understanding of the child, and the parent's degree of trust for the child. No pretest was administered. Multivariate analysis of variance was used to analyze the PAS scores for the two groups. Results were statistically significant at the 0.0001 level. Major scale contributors to the significant findings were demonstrated on the acceptance and trust scales.

Lowrence (1989) studied the effects of a 6-week STEP parenting program on 42 parents of elementary school children, using the PAS and the ATFC-II at three points during the program. Analyzing the data from the quasi-experimental design with 12 paired t-tests, Lowrence found that parents changed their attitudes significantly ($p < 0.05$) on the confidence, causation, understanding, and trust scales of the PAS by the end of the group sessions. Significant changes were not found on the acceptance scale or on the ATFC-II.

Wilmes-Reitz (1983) compared groups receiving the standard STEP program, a modified STEP program which utilized role-play, and a wait-list control. The relationship between parental motivation, marital satisfaction, and self-disclosure to outcome were also explored in order to assess which STEP works best with various types of parents. Outcome variables included parent attitudes (authoritarianism and family harmony), child reports of acceptance/rejection, firm control and psychological control; attendance; and satisfaction. Eighty-seven mothers of 4th-, 5th-, and 6th-grade children were divided into eight classes.
and a control group. Four trainers led one standard and one modified condition class. The class format included readings, discussions, tape recordings, and, in the modified group, role-playing. Unspecified measures were administered prior to and following treatment, and data were analyzed by multiple regression correlation. Results suggested that marital satisfaction influences attendance. Trends in the data suggested that role-playing may be linked to increased use of firm control and lower levels of attendance. Tentative support was also indicated for the importance of motivation on attendance. A negative finding of the study was the lack of significant difference between both the STEP treatments and the control group on all measures of outcome.

Applicability and Limitations of STEP with Diverse Cultures

Research findings have been reported by Westby (1987) in a review of cultural differences affecting communicative development. Westby reported differences in newborns in terms of activity level (Brazelton, Koslowski, & Tronick, 1976), vocalizing or interacting with infants (Callaghan, 1981), and emotional lability (Coll, Sepkoski, & Lester, 1981). Implications for such findings suggest that awareness of these predispositions is essential for clinicians working with minority children "because what may be appropriate assessment and intervention for White middle-class children may not be appropriate and optimal for children from other cultural groups" (Westby, 1987, p. 5). In addition, Westby reported cultural differences in which family member performs the caregiver role. In some cultures sibling child-rearing practices are common and encourage interdependency of members within a culture (Draper & Harpending, 1982; Werner, 1984). Westby warned that in a sibling child-rearing culture, the mother may not be the best source of information about a child's skills or abilities, and she may not be the only or most appropriate person to work with a child in an intervention program.
Westby (1987) also reported on differences in child-rearing beliefs associated with infant capabilities (Christopher, 1983; Heath, 1983), the culture's goals for their development (Field & Widmayer, 1981), the intentionality of infants (Heath, 1983) and perceived susceptibility of infants to supernatural harm (Delgado, 1981; Mehn & Dunn, 1985). Westby concluded that assessment procedures and intervention strategies must be adapted to take into account cultural differences with regard to predispositions of children and family beliefs. The author stated, "clinicians should provide therapy that is initially compatible with the children's temperament and capabilities and that meets the family's beliefs and goals for the child" (p. 15).

These findings and conclusions reported by Westby (1987) suggest obvious limitations of the typical STEP presentation and intervention program regarding the parent as the caregiver to be trained, the perceived intentionality of behavior, and the value placed on independence. Temperament differences of children are less troublesome because the STEP program deals more with parents' perceptions and feelings about their children's behavior than with the encouragement or discouragement of specific behaviors. Democratic philosophical differences may be argued by some critics; however, Adlerian theory, more than many others, takes into account the differences in the individual belief system. Although the STEP program is based on democratic approaches to parenting, there is a wide range of attitudes even in the Caucasian community regarding the applicability of this concept to families. It has, however, produced changes that many families find valuable. While the STEP program promotes a democratic approach to parenting, it does not abdicate the parents' role or that of other family members in providing firmness and guidance. There is no doubt, however, that care and planning should be exercised if the use of this program with non-white cultures. In addition, its effectiveness and acceptance by multi-cultural participants should be examined in systematic ways.
Guided Imagery

Richardson (1982) has found that guided imagery allows students to isolate themselves mentally and to use their natural abilities to daydream or fantasize in ways that accomplish educational objectives. "Educational imagery is used in facilitating decision making, clarifying values, memorizing, incorporating behavioral outcomes of teaching, reinforcing cognitive concepts, and other functions" (p. 4). In guided imagery, students are instructed to use their imaginary senses of seeing, hearing, touching, smelling, and tasting. Teachers design and describe scenarios to accomplish various educational functions. For example, the teacher may lead the students into a non-offensive decision-making scenario where they make choices based on acquired information and personal values, or the teacher may lead the students completely through a scenario which reinforces a cognitive concept. "For cognitive strategies and psychomotor strategies where there is a correct and incorrect answer or procedure, the teacher can be directive, that is, lead the student through the scenario without allowing for individual decisions" (p. 21). Richardson has pointed out, however, that educational imagery is most effective with decision-making and affective strategies where students fill in the scenarios with individual interpretations and decisions. "What is important is that all scenarios, whether directive or non-directive, are described in such a fashion that all students can experience the strategy" (p. 21). In other words, images work better for participants when they do not conflict with the students' experiences (e.g. if a teacher were describing a scenario where the imager is to sit down in a favorite chair, it might be better termed "a favorite and comfortable place" since the imager might more vividly image a sofa or porch swing from personal experience, etc.)

Richardson (1982) has recommended that, initially, students learn to relax systematically, although in time the suggestion of relaxation or the word relax elicits relaxation, and students begin to relax almost immediately by clearing their heads of
extraneous thoughts and by relaxing the muscles of their bodies. Richardson has suggested that relaxation prevents imagerers from being distracted by uncomfortable parts of their bodies, isolates them mentally, warms up their concentration skills, diverts attention from other students in the class, and helps them to respond to the teacher's (guide's) voice. Although there are several ways of instructing students to relax, a deep breathing relaxation instruction such as the following has been suggested:

I would like you to get into a comfortable position either sitting or laying down and try to relax. Take a deep, cleansing breath, let it out (pause), and then take another deep breath and hold it for five seconds (pause); let it out and feel the tenseness leave your body. As you continue to take deep breaths, concentrate on the relaxation and tension relief you feel each time you exhale. Concentrate only on your breathing.  (p. 25)

Richardson has stressed that the voice should to be soft, but audible, and that pauses are critical because imaging detail and clarifying values takes time. He has suggested that the best way for guides and teachers to time instructions or scenarios is for them to follow along and create the image for themselves.

According to Richardson (1982), the discussion that follows the imagery exercise is very important and that groups should be divided into dyads or small groups to discuss the outcome of the strategy. During the group discussions, teachers should justify and clearly explain the educational objectives of using imagery to make participants more comfortable and to decrease resistance to the method.

Richardson (1982) has found role-assumption imagery to be extremely beneficial in helping participants view themselves in new ways and understand the behavior of others. He has contrasted role-assumption imagery with role-playing by stating:

Even though role-playing is a viable teaching method, through imagery, the role that is portrayed should actually be assumed by the student. One purpose of role assumption imagery is for the student to assume the role of the ideal image of him/herself . . . that will remain constant . . . on a conservative or liberal continuum
in relation to values and behaviors, but the ideal image is created specific to different instructional topics . . . has different perspectives as it relates to social behaviors, spiritual living, emotional wellness, fitness levels, or other dimensions of living. (p. 104)

Wheatley, Maddox and Anthony (1989) have found three conditions which they believed necessary for guided imagery scripting to be successful in the educational process:

1. The student must have some understanding of what the particular script is all about.

2. An evoking context for the script must be presented in order to generate rich images in the mind of the student, and

3. The student must be able to enter the script (i.e., be able to envision him/herself in the images evoked by the script) (p. 36).

The research of Wheatley et al. indicates that when the objective of the script is to generate creativity, general scripts are successful. The gaps are filled in by the imager drawing upon prior experiences. When the objective of the script is for reasons other than creativity, such as practicing a newly learned skill or a mental rehearsal of an oral presentation, more detailed scripts are necessary. If the purpose of the script is to educate in an unfamiliar area, detailed step-by-step procedures are more useful.

The utilization of metaphors in scripts allow individuals to understand concepts or events in terms of other concepts or events. Thus, metaphors, which are figures of speech where one thing is spoken of as if it were another thing, often enhance the effectiveness of guided imagery techniques (Wheatley et al, 1989).

In addition to addressing the detail of the script in relation to the object of the guided imagery script and the use of metaphors in scripts, Wheatley et al. have stressed the importance of personalizing the script so that the participants can mentally see themselves within the confines of the scenes accomplishing the purpose of the script. This personalizing
of the script can be done by setting the scene of the script in a familiar setting such as the home with familiar persons or family. Wheatley et al. have emphasized the necessity that the script be multi-modal, that is, utilizing all of the sensory perceptions: sight, smell, taste, touch, and hearing. They have noted that "the more sensory modalities that are triggered in a script, the richer the imagery that is engendered within the students" (p. 37). Extreme care should be used in the language and selection of terms to be used in a script; words that seem harmless often have negative connotations and can disrupt the relaxed state of the imager and abruptly terminate the imaging process.

Galyean (1983), in her work with elementary and secondary students, found that guided imagery can be an effective tool for awareness and acceptance of self and others. When a person images success, actions follow in a positive direction, and once students change negative learning images to "can do" images, school work and athletic ability as well as family and personal relations often improve. Galyean (1983) has further reported that:

Imagery enables students to develop healthy self-concepts by owning their own power, recognizing latent capabilities, and enlarging those that are already working for them. This is done by presenting them with images that help them [a] recognize basic needs, wants, and preferences expressed as feelings that influence their attitudes, behaviors, and talents, and subsequently shape their personalities; and [b] identify and transform self-defeating scripts into helpful ones. Powerfully designed 'Successful Me' types of images enable [students] to imprint mental pictures of themselves as capable, productive, and well received by others. (p. 56)

Cohen and Twemlow (1981) studied the effects of guided imagery on the perceptual, affective, and cognitive functioning of 40 subjects randomly assigned to an experimental or control condition. Twenty experimental participants were given eight sessions of guided imagery. The treatment used a technique of deep voluntary muscle relaxation, suggestions of allowing whatever images occur to happen rather than analyzing, and specially constructed imagery-facilitating musical tapes. The experimental and control groups were
compared using the Personal Orientation Inventory (POI), the Embedded Figures Test, the Barron-Welsh Art Scale, and the State-Trait Anxiety Inventory before and after treatment. Participants who experienced guided imagery became significantly more inner directed as measured by the POI. Only a positive trend was exhibited in the direction for self-acceptance, another subscale. Participants also became significantly more field independent, as measured by the Embedded Figures Test, and reported an increased sensitivity and awareness of imagery, fantasy, and emotions during their sessions. No significant differences were found on the creativity or anxiety measures. A 4-month follow-up revealed that the guided imagery group maintained and increased their significant changes on the following POI scales: inner direction; self-regard; self-acceptance; acceptance of aggression; and nature of man. Cohen and Twemlow concluded that guided imagery (a) "may be a method which facilitates perceptual and attitudinal change" (p. 259); (b) "tends to result in an increase in psychological well-being, independence, and the capacity to be self-supporting" (p. 262); and (c) "results in a significant change in how we see ourselves and others" (p. 262).

**Parent Training and Guided Imagery**

Lupin et al. (1976) used deep relaxation exercises with minimal brain-injured (MBI), hyperactive children and their parents to determine their effects upon hyperactivity in the children. Stories were developed to reinforce relaxation and prevent boredom with the relaxation exercises. One tape for the children taught the relaxation exercises; another tape, entitled "Old Me, New Me," was a narration about attitudes and how a negative attitude can affect relationships with others, and how by using relaxation, one can change negative habits to more positive ones; the remaining four tapes were imaginary trips to the beach, to the stars, to the mountains, and to the woods. The stories emphasized relaxation during
classroom experiences, coping with criticism, cooperation with family and peer group members, and how to express negative feelings in appropriate ways. Visual descriptions on the tapes were matched with appropriate auditory stimuli. Parent tapes included a tape on behavior modification principles and how to reinforce their children's new positive behaviors, instructions on the most effective ways to use the program, relaxation tapes for the parent on how to relate to the child in a more relaxed manner, and a series of three visual imagery tapes to reinforce relaxation and desensitization techniques. Both the child and parent used the tapes for a period of 3 months.

Data collection by Lupin et al. (1970) consisted of a daily record, kept by the parent, of tape use, medication use, and the degree of emotionality and temper outbursts the child exhibited; pre- and post-treatment ratings on an unspecified parent behavioral rating scale; a pre- and post-treatment intellectual and academic battery which included the coding, digit span, and object assembly subtests from the Wechsler Intelligence Scale for Children (WISC) and the Visual Sequential Memory subtest of the Illinois Test of Psycholinguistic Abilities (ITPA); and a pre- and post-treatment frequency check for specific behaviors in the classroom which included working on assigned tasks, communicating with other children with permission, out of seat behavior, looking around the room or staring into space, and nervous behavior (pencil tapping, hair twisting, foot tapping, etc.) to check for generalization from home to classroom. Student raters who were first told that they would not know which subjects were receiving treatment were not apprised of the fact that a control group was used. The raters scored student behavior within 15-second time intervals for 10-minute sessions over the 4 days before treatment and the 4 days following treatment. Percentage agreement reliabilities were calculated between ratings compiled by Lupin and the student raters on several occasions. Reliabilities ranged from .87 to .94.
The parents reported that their children appeared happier (frowned and grumbled less often), and that there was improvement in their interpersonal relations (less poking and teasing, etc.). Bed wetting and difficulties sleeping were not reported by parents to be a problem. The remaining seven behaviors showed non-statistically significant improvement. Of the five classroom behaviors which were analyzed for pre- to post-treatment change, three showed significant improvement ($p < .01$): working on assigned tasks, communicating with another child with permission, and fidgeting or nervous behaviors. Student raters remarked that the children's behavior indicated a greater degree of positive interaction with their peers. The pre- to post-test WISC scores improved at the following statistical levels: digit span at a .05 level of significance; coding at a .025 level of significance; and object assembly approached significance at the .10 level. Pre- to post-test visual sequential memory scores on the ITPA were found to be statistically insignificant. Lupin et al. (1976) reported that the results of their study suggest that hyperactive children can show behavioral improvement by practicing relaxation and by relaxing during visual imagery. They also concluded that "the parent tapes help the parents learn to relax and deal with their children's behavior in a more positive and effective manner" (p. 111).

Wheeler (1982), in a clinical study, found that parents in parent education groups often feel frustrated and discouraged by their inability to persuade their children to accept what they believe to be important in life. Wheeler found it helpful for parents to become aware of their own values and how their method of attempting to pass along those values to their children may affect their success or failure to do so. By way of example, Wheeler explained that parenting methods which encourage competition between siblings can produce one sibling who wins parental approval through conforming to family values while producing another child who succeeds in an entirely different area, or succeeds at being the "worst." This competing child usually has as much success at being the best "worst" and winning
parental disapproval as the conforming child has at winning approval. Ultimately, neither child is free to choose. One child may feel compelled to compete and conform to parental values, and the other child may feel compelled to compete in another area or in an opposite and negative manner. When families learn to decrease competitiveness within the family environment, all of their children can feel free to follow and be guided by what the parents believe to be important.

Wheeler (1982) has sought to increase parental awareness of family values by introducing a guided imagery or fantasy trip exercise to parent education groups. To reduce resistance to the exercise, she gives parents a choice of participating in the imagery exercise or taking the time to relax or think about other things. Wheeler then begins the exercise by suggesting that parents get into a comfortable position, take a slow, deep breath, and let the tensions leave their bodies. She then tells them to imagine that they have just returned home from their parenting group session and are sitting down in a comfortable place and turning on the television set. Wheeler then guides them toward a picture of a child who really bothers them and asks them to observe what it is that the child is doing that annoys them and how they feel as they react to the child. She then guides them toward a picture of a child who is their "ideal child," and asks them to notice what the child is like, what the child is doing, whether the child is alone, how the child relates to that other person, what they like about the child's personality, and what they would say to the child. She ends the exercise by suggesting that the participants turn off their televisions and gradually return to the group meeting. The clinician then engages the participants in a group discussion where they are encouraged to share their experience with others.

According to Wheeler this experiential exercise has proven useful in introducing Adlerian ideas about parenting to parent education groups. She has found it to be helpful in increasing parental self-awareness of values and improving parent-child interaction.
Summary

In summary, the STEP program has consistently produced changes in parental attitudes which are consistent with democratic rather than authoritarian thinking. These changes have occurred in studies using a variety of populations and measuring devices. Changes related to child-rearing practices and child behavior have been found, but less consistently. STEP, a multi-media approach to teaching Adlerian concepts to parenting groups, has used role-play as a means of motivating parents and giving them a chance to practice their newly learned concepts. Although role-play has been used in many settings and is a viable learning technique, the results of one study (Wilmes-Reitz, 1983) indicates that it is associated with increased use of firm control and lower levels of attendance. Richardson (1982) believes that role-assumption, a form of guided imagery, may be a more powerful technique, because the imager is able to fill in the gaps, making the experience more personal and easier to generalize to other situations.

Guided imagery has been found to facilitate learning, increase awareness of self and others, release human potential, and increase self-regard. Cohen and Twemlow (1981) believe that guided imagery may very well facilitate perceptual and attitudinal change. Guided imagery has been used successfully in both psychiatric and educational settings; however, its use with parents to facilitate the learning of Adlerian parenting concepts has been reported in only one clinical study (Wheeler, 1982). Guided imagery has proven to be helpful in clarifying family values and determining specific factors which may interfere with passing along parental values to children.

Clinicians, educators, and researchers tend to agree on several points when considering the strategy and techniques of good leadership and scenario development associated with successful guided imagery results: (a) the function of the imagery should be explained to participants to make them comfortable and decrease resistance; (b) group members should
be given a choice of participation; (c) the scenario should be described in a fashion that all participants can experience, that is, the descriptions should not conflict with any participant's experience; (d) relaxation should generally be a prerequisite, and is often enhanced by a supine position; (e) pauses are considered essential and should be included so that images have time to take form; (f) imagery should be rich and multi-modal, utilizing as many of the sensory perceptions of seeing, smell, taste, touch, and hearing as possible; and (g) the discussion should always follow the imagery exercise.

In this study, guided imagery techniques were used: (a) to increase motivation as demonstrated by increased attendance and completion of homework assignments; (b) to clarify the Adlerian concepts presented in the STEP program; and (c) to enhance parental self-respect, self-regard, and feelings of competence and confidence, characteristics viewed as essential by Abidin (1980) for a successful parent education program. The substitution of guided imagery techniques for the role-play exercises was also undertaken to determine if guided imagery is associated with higher levels of attendance than role-play.
CHAPTER 2

PROCEDURES

Definition of Terms

For the purposes of this study, the following terms are operationally defined:

Centering is a focusing technique utilizing relaxation and sensory modalities to increase concentration and readiness for learning.

Guided imagery is a perceptual-like experience set up by a leader in the form of a story or scenario which utilizes relaxation and the sensory modalities to increase concentration and focus, and enhance vividness and generality for the imager. Scenarios may be filled in or completed by the leader or left open for the participant to fill in or complete.

Systematic Training for Effective Parenting (STEP) is a nine session multi-media parent education program as updated by Dinkmeyer and McKay in 1989 using videotapes, parent discussion of problem situations, role-play and homework as outlined in the STEP Leader's Manual.

Traditional STEP Group (STEP group) is a treatment group receiving a shortened eight-session STEP program agenda as outlined in the STEP Leader's Manual (1989), with sessions 7 and 8 combined.

Modified STEP Group (STEP-Im group) is a treatment group receiving a shortened eight-session STEP program agenda as outlined in the STEP Leader's Manual (1989) with sessions 7 and 8 combined, the substitution of centering and focusing guided imagery exercises at the beginning of sessions 2 through 8, and guided imagery scenarios in the place of the problem situation or role-play exercises at the end of each session.
Drop-out comparison group is a group much like Hereford’s (1963) non-attendant control group, and is made up of interested parents who inquired about the program or registered for the program and did not attend, but were willing to complete both pretest and posttest surveys.

Hypotheses

The hypotheses for this study were designed to explore the effectiveness of guided imagery as an enhancement to parent education and as a viable expansion of the literature into new areas of investigation from which new questions and research can follow. Due to the exploratory nature of this study, levels of significance were reported, compared, and analyzed, rather than adhering to strict levels of rejection. The following hypotheses were tested:

1. Parents in the STEP-Im group would change their attitudes toward parenting more than would parents in the traditional STEP group and the drop-out comparison group, as measured by the five scales of the Parent Attitude Survey (PAS) which include: (a) confidence, (b) causation, (c) acceptance, (d) understanding, and (e) trust.

2. Parents in the STEP-Im group would attend more parenting sessions than would parents in the STEP group.

3. Parents in the STEP-Im group would report the completion of more reading assignments than would parents in the traditional STEP group.

4. Parents in the STEP-Im group would report practicing the studied concepts with their target children more frequently than would parents in the STEP group.

5. Parents in the STEP-Im group reporting greater amounts of time practicing imagery homework would show greater attitude change from pre- to post-treatment on the five scales of the PAS.
Research Question

Due to the exploratory nature of this study, the following research question was designed to guide the exploration of differences in group experience for the two treatment groups based on their subjective descriptions.

Would STEP-Im and STEP group participants regard their experience differently as revealed by leader observation, discussion during the final session, and written comments at posttest?

Subjects

The subjects were 38 treatment volunteer parents and 15 survey volunteer parents (drop-out comparison group). Subjects were the parents of elementary school students from a North Texas school district. The school district which was solicited for volunteers is composed of primarily a middle-class population, with approximately 85% of its student body Caucasian, 7% Hispanic, 5% Black, and 3% Asian or American Indian. Parent volunteers who responded to publicity about a free STEP parenting program were asked to attend an information gathering session where they were informed about the study and the importance of attending all of the sessions, asked to sign the Informed Consent statement (see Appendix A), fill out the Data Sheet (see Appendix B), pre-tested with the PAS, and assigned to one of two conditions: (a) a traditionally administered STEP program or (b) a modified STEP program using guided imagery techniques.

The drop-out comparison group or survey volunteer parents either filled out the survey at the information gathering session or were mailed a copy to complete. At the end of the 8-week program, they were mailed another survey to complete and return by mail. Fourteen STEP group participants, 14 STEP-Im participants, and 10 drop-out group participants
completed the requirements to be included in the study. Completion of the program was not necessary for participants to be included in the attendance portion of the study.

Treatment

Parent Groups

The group leader, who had led several STEP groups for the parents of the school district in the past and was the group leader for the STEP and the STEP-Im groups was assisted by a beginning level graduate student who was selected based on her knowledge of Adlerian theory and specific experience with the STEP program. A 4-hour session was employed to instruct the assistant and to coordinate teaching efforts. The assistant helped with collecting attendance, and homework data, facilitating and focusing small group discussion, and collecting pretest and posttest data. All guided imagery techniques were administered by the group leader.

The procedures for the STEP group were the standard procedures and format as outlined in the STEP Leader's Manual. The procedures for the STEP-Im group were identical to those in the STEP manual with the substitution of certain guided imagery techniques in the place of role-play and problem situation exercises called for in the traditional format, and the addition of other centering and guided imagery techniques after the initial discussion of the activities for the week at the beginning of each session. The outline of the STEP group agenda with the location of the imagery exercises substituted and administered to the STEP-Im group is provided in Appendix C. The duration of each session for both experimental groups was approximately 2 hours, with the STEP-Im group going slightly past the 2-hour mark on a few occasions due to the length of the imagery exercises. In addition to the standard STEP activities for the week, the STEP-Im group members were
asked to do imagery homework consisting mostly of affirmative outcome images of themselves as parents and of their children (see Appendix D).

The drop-out comparison group parents received no treatment between the pretest and posttest dates. Participants were notified when they were sent their posttest survey of a program to be offered in the fall in appreciation for their participation. In most cases, participants who returned the posttest survey indicated that they would like to be contacted in the fall.

Guided Imagery Techniques

The guided imagery scenarios used were designed or adapted for this study (see Appendix E), with the exception of the ideal child, bothersome child scenario reported by Wheeler (1982). The Wheeler scenario was modified slightly to include more sensory modalities to enhance vividness and to encourage more personalizing of the experience. The guided imagery techniques used in this study seek to enhance learning of the major Adlerian concepts covered by the STEP program by increasing focus and awareness of self and others, and to enhance the release of human potential in converting learned concepts into behavioral change by building feelings of competence and control over images and behavior. Adlerian concepts presented to the STEP-Im group using guided imagery included encouragement, logical consequences, communication techniques of reflective listening and I-messages, and family meetings. Homework imagery exercises included self-affirmations of parenting and being, the development of outcome imagery which focused on the parents' goals for themselves and their children as adults. Guided imagery scripts were used during the classroom sessions, whereas written imagery instructions were used for homework assignments.
Instrumentation

In order to assess parents' attitudes toward their children before and after treatment, the PAS was employed (Hereford, 1963). In creating the PAS, Hereford based the limitation of parent attitudes to be studied on a triple prerequisite: (a) the area had to be important to parent-child relations, (b) the attitude had to be measurable, and (c) the area had to be receptive to influence by educational methods. These three requirements resulted in the selection of five areas of parental attitude to be included as scales of the PAS: (a) the confidence scale, which measures parents' attitudes of confidence in their parenting based on their feelings of having more problems than most parents, their uncertainty as to what to do about those problems, and attitudes that imply that parenting requires suffering and is a difficult and thankless task; (b) the causation scale, which measures the degree to which parents feel that a children's behavior is inherent or predetermined rather than influenced by environment or parents; (c) the acceptance scale, which measures attitudes of pushing or the accepting of childhood behavior, normal developmental changes, and children's behavior and feelings, aggressiveness, need for affection, and self-expression; (d) the understanding scale, which measures attitudes regarding communication between parents and children on a continuum which includes freedom of expression, talking out problems, and joint participation in decision-making; and (e) the trust scale, which measures parents' recognition of the individuality of their children on a continuum from being extensions of the parent who must be watched and monitored constantly to being individuals in their own right who can be trusted.

The developers of the PAS borrowed items from other instruments which they believed to be appropriate to the five parent-attitude areas. In addition, new items were written (Hereford, 1963). The original pool contained more than 200 items, about 40 from each area. Appropriateness for the five areas was determined by five judges working.
independently. Another category was provided for items that the judges considered ambiguous or unrelated to the five parent-attitudes in question. The judges were given shuffled cards with one item on each which they were asked to sort into the six stacks. The majority of the items showed 100% agreement among judges. The remainder, with the exception of a few, won agreement from four of the five judges, with three judges being required for adoption of the item. One hundred and twenty-five items became the preliminary form of the scale. Items were tested on 72 parents from Harris School in Austin, Texas, and three elementary schools in Taylor, Texas. Parents marked Strongly Agree, Agree, Undecided, Disagree, or Strongly Disagree, scoring +2, +1, 0, -1, or -2, depending on whether the item was stated positively or negatively. Scores for each area were summed; each parent received five separate scores, one for each scale. The researchers then refined and shortened the scales by determining the discriminative power of each item for its particular scale. To insure greater homogeneity of content, items were retained when the item score and the total score were high or low for the same subject, and eliminated when there was no relationship. The 15 items in each of the five areas with the highest correlation coefficients were used in the final version of the PAS, making a total of 75 items with a range of scores from -30 to +30 on each scale.

The interscale correlation range and mean for each of the five scales are as follows: (a) .33 - .38 (r = .36), confidence scale; (b) .35 - .57 (r = .46), causation scale; (c) .33 - .62 (r = .51), acceptance scale; (d) .34 - .61 (r = .45), understanding scale; (e) .38 - .61 (r = .54); trust scale. These interscale correlation ranges indicate a relationship but not a duplication between the scales. Hereford stated that although the scales were constructed to measure different areas of parent attitudes, the intercorrelations which were found, "might be expected for scales measuring content in the same broad area" (p. 57). The reliability of the five attitude scales computed by using the split-half method are as follows: (a) .78--
confidence scale, (b) .77—causation scale, (c) .68—acceptance scale, (d) .86—understanding scale, and (e) .84—trust scale.

The PAS was normed on parent volunteers for parent discussion groups in Austin, Texas, a city of approximately 185,000 people at the time of the study (Hereford, 1963). Although attempts were made to obtain a sample representative of the Austin population, participants were primarily Caucasian and middle-class. Segregation existed for Blacks but not for Latin-Americans at the time of this study. There was a relatively small population of Blacks in the population at that time. Volunteer group leaders in Latin-American neighborhoods were difficult to recruit, and therefore, under represented in the study. Generalizability of the scale to non-middle-class, Caucasian populations should be done with caution.

According to Brand and Ellis (1991), "the Hereford [the PAS] can be used effectively to measure parental attitudes before and after the implementation of training procedures with traditional families" (p. 437). Brand and Ellis also note that in their examination of its use over the past few years, it has been surprisingly positive for a paper-and-pencil technique.

Collection of Data

Permission was obtained from the school district administration to conduct the study on an elementary school campus, however permission was later withdrawn due to community controversy regarding the use of guided imagery by district counselors. Once it was learned that public school facilities were unavailable, a church facility was obtained. The school district did, however, agree to solicit volunteers for the study by distributing notices of a STEP program and STEP research to all elementary school students to be taken home to their parents. Information was given to principals and elementary school counselors in an effort to recruit volunteers.
Parent Teacher Association leaders were notified of the parent training study and were asked to publicize it and distribute fliers at their regularly scheduled meetings 2 to 3 weeks prior to the beginning of the study. Short articles were run in two local newspapers, and cable bulletins appeared on two local cable stations which serve the community (see Appendix F). Area retail businesses and apartment managers were asked to allow the posting of the information so that customers and residents could see it.

An attempt was made to assign participants in as random a fashion as possible, balancing the two groups for amount of previous experience with parent training and couple participation. However, told during recruiting that they would be randomly assigned to either a Monday or a Thursday night group, several parents indicated that scheduling conflicts would prevent their attendance unless they were assigned to a specific night. When the need for additional volunteers became evident, interested parents who had called to inquire were contacted and assigned to the night they had requested. Conflicts that prevented their being assigned randomly to either Monday or Thursday were based on a myriad of reasons which appeared to have no pattern. Reasons included evening classes, children participating in soccer, husband participating in softball, and church and organizational commitments. Eight participants required Monday and three required Thursday. Of the eight participants who actually began the Monday sessions (STEP group), six completed the six required sessions for their data to be included in the study. Two of the three recruits who had required placement in the Thursday class (STEP-Im group) actually began the program, and both completed the training.

Pretest data using the five scales of the PAS were collected from treatment group volunteers. Data were collected at an information gathering session on a Thursday night from 23 volunteers. The volunteers began classes on Monday or Thursday night of the following week. Fifteen volunteers (eight assigned to Monday, and seven assigned to
Thursday) were unable to attend the information gathering session and agreed to come early for the first session the following week in order to receive the same information and fill out the pretest data sheet and survey. Because the information gathering session was on a Thursday night, seven of the eight who came late to the Monday group were the same participants who had required Monday in order to attend. Only one of the participants who was assigned and registered late for the Thursday class had required Thursday. For the Thursday group, difficulties attending the information gathering session were generally related to one-time schedule conflicts.

Participants were required to attend at least six sessions for their data to be included in the study, with the exception of the attendance portion of the study. Although eight make-up sessions were given for each of the two treatment groups, no more than two make-up sessions could be included as part of the six; that is, participants had to attend at least four regularly scheduled sessions for their data to be included in the study. Make-up sessions were given for those who missed the second or third session (Chapter 2 and/or 3), the fourth or fifth sessions (Chapters 4 and/or 5), the sixth session (Chapter 6), the seventh session (Chapters 7 and 8), and the eighth session (Chapter 9). Make-up sessions included the specific concepts missed by individuals and included the major teaching techniques of the STEP (group discussion of week's activities and chapter questions, videotape review, etc.). The guided imagery scenario chosen for the STEP-Im participants was the one missed by the most participants, and in most cases was the specific one missed.

Attendance and other data were recorded so that significant differences between the two experimental groups and within groups could be statistically analyzed. At the beginning of each session, participants were asked to record on their coded participant sheet whether they completed the reading assignment and the number of times they practiced program concepts with their target child during the week. The STEP-Im group also was asked to keep a log
from day-to-day and to record on their attendance sheet the total number of minutes they practiced assigned imagery exercises during the week (see Appendix G). These data were collected to explain the nature of possible differences on outcome measures within the guided imagery treatment group.

To help evaluate the research question concerning the differences between participant experience for the two treatment groups, the STEP group was asked to rate role-play and the STEP-Im group was asked to rate classroom imagery on an evaluation sheet (see Appendix H). Participants were asked to rate all of the teaching techniques with the purpose of comparing only the ratings for the role-play and imagery. Participants were asked whether they would recommend STEP training to a friend, if they planned to continue with the support group which was forming, and to make additional remarks. Parents in the STEP-Im group were asked if they would use relaxation and imagery techniques in the future, and to explain a yes response. They were also asked to comment on the use of imagery techniques with parent groups, to give any suggestions they might have for its use with this population, and to comment on its usefulness (if any) to them.
CHAPTER 3

RESULTS

This chapter includes an analysis of the data obtained in this study, a summary of the research findings, conclusions and discussion related to the hypotheses, and recommendations for parent training and future research.

Analysis of Data

This section consists of two sub-divisions: (a) general findings of Parent Attitude Survey (PAS) pretest, posttest, and change score data related to, but not including, the hypotheses in this study, and the rationale and methodology used in reporting data, and (b) a presentation of the specific analyses and findings related to the hypotheses and research question.

General Findings and Methodology

PAS statistics reported in this section and in the section related to the hypotheses consist primarily of means and standard deviations for each scale. Because each scale consists of 15 items with a possible range of -2 to +2 for each item, group statistics are based on scores with a range of -30 to +30 for each scale. Pretest statistics and levels of significant similarity are reported for three research groups and two treatment groups. Pretest statistics and levels of significance for the initial participants who began the program by attending at least one class or who acted as a comparison by completing the data sheet and pretest survey are shown in Tables 1 and 2.
Table 1

**PAS Pretest Statistics for Three Research Groups (Initial Participants)**

| Survey Scale   | Traditional STEP Group  
|                | \( n = 20 \) | STEP - Im Group  
|                | \( n = 18 \) | Drop - Out Group  
|                | \( n = 15 \) |
|----------------|------------|----------------|
|                | Mean  | SD  | Mean  | SD  | Mean  | SD  |
| Confidence     | 2.350 | 8.286 | 1.833 | 6.419 | 2.200 | 5.467 |
| Understanding  | 16.850 | 5.976 | 17.222 | 4.570 | 15.800 | 6.805 |
| Trust          | 11.850 | 8.190 | 10.444 | 7.188 | 7.733 | 7.176 |
| Total score    | 58.750 | 31.533 | 57.222 | 18.559 | 48.533 | 26.734 |

Table 2

**ANOVA Results of PAS Pretest Scores for Three Research Groups and Two Treatment Groups (Initial Participants)**

| Survey Scale   | Three Research Groups  
|                | \( n = 53 \) | Two Treatment Groups  
|                | \( n = 38 \) |
|----------------|----------|----------------|
|                | F-Ratio  | \( p \)  | F-Ratio  | \( p \)  |
| Confidence     | 0.027    | 0.970 | 0.045    | 0.832 |
| Causation      | 0.431    | 0.652 | 0.011    | 0.918 |
| Acceptance     | 1.190    | 0.313 | 0.013    | 0.910 |
| Understanding  | 0.260    | 0.772 | 0.046    | 0.832 |
| Trust          | 1.277    | 0.288 | 0.313    | 0.579 |
| Total score    | 0.713    | 0.495 | 0.032    | 0.859 |
PAS pretest statistics, according to research group, for participants who completed the 8-week training program, or in the case of the drop-out group, completed both the pretest and posttest survey 8 weeks later are shown in Table 3.

Table 3

PAS Pretest Statistics for Three Research Groups (Participants Completing Program)

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Traditional STEP Group $n = 14$</th>
<th>STEP - Im Group $n = 14$</th>
<th>Drop - Out Group $n = 10$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Confidence</td>
<td>2.143</td>
<td>8.699</td>
<td>0.929</td>
</tr>
<tr>
<td>Causation</td>
<td>13.786</td>
<td>7.051</td>
<td>15.571</td>
</tr>
<tr>
<td>Trust</td>
<td>11.000</td>
<td>7.894</td>
<td>10.000</td>
</tr>
<tr>
<td>Total score</td>
<td>56.357</td>
<td>33.297</td>
<td>59.071</td>
</tr>
</tbody>
</table>

By including only participants who completed the program by attending the required number of sessions and posttest survey instrument in pretest ANCOVA comparisons, probabilities that the groups were comparable at pretest is greater for the three research groups and somewhat less for the two treatment groups than those reported previously for initial participants.

Probabilities that the three research groups and two treatment groups were similar at pretest on the individual scales are presented in Table 4.
Table 4

ANOVA Results of PAS Pretest Scores for Three Research Groups and Two Treatment Groups (Participants Completing Program)

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Three Research Groups $n = 38$</th>
<th>Two Treatment Groups $n = 28$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$-Ratio</td>
<td>$p$</td>
</tr>
<tr>
<td>Confidence</td>
<td>0.111</td>
<td>0.895</td>
</tr>
<tr>
<td>Causation</td>
<td>0.508</td>
<td>0.606</td>
</tr>
<tr>
<td>Acceptance</td>
<td>1.194</td>
<td>0.315</td>
</tr>
<tr>
<td>Understanding</td>
<td>0.620</td>
<td>0.544</td>
</tr>
<tr>
<td>Trust</td>
<td>0.376</td>
<td>0.689</td>
</tr>
<tr>
<td>Total score</td>
<td>0.396</td>
<td>0.676</td>
</tr>
</tbody>
</table>

Analyzing the pretest data further, it appeared that the variability as demonstrated by the standard deviations was greater for the STEP group and the drop-out group than for the STEP-Im group. Analysis of the three research groups revealed three outliers, participants whose scores were extreme, lying more than two standard deviations above or below the mean (two from the STEP group and one from the Drop-out group). There were no participants with outlier scores from the STEP-Im group.

Pretest statistics and probabilities of similarity for research groups whose participants completed the program, but did not score in an outlier position, are presented in Tables 5 and 6.
Table 5

PAS Pretest Statistics for Three Research Groups (Participants Completing Program With Outlier Data Removed)

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Traditional STEP Group $n = 12$</th>
<th>STEP - Im Group $n = 14$</th>
<th>Drop - Out Group $n = 9$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Confidence</td>
<td>2.000</td>
<td>6.537</td>
<td>0.929</td>
</tr>
<tr>
<td>Causation</td>
<td>14.083</td>
<td>4.738</td>
<td>15.571</td>
</tr>
<tr>
<td>Understanding</td>
<td>17.000</td>
<td>6.135</td>
<td>18.643</td>
</tr>
<tr>
<td>Trust</td>
<td>11.000</td>
<td>6.889</td>
<td>10.000</td>
</tr>
<tr>
<td>Total score</td>
<td>57.500</td>
<td>23.322</td>
<td>59.071</td>
</tr>
</tbody>
</table>

Table 6

ANOVA Results of PAS Pretest Scores for Three Research Groups and Two Treatment Groups (Participants Completing Program with Outlier Data Removed)

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Three Research Groups $n = 25$</th>
<th>Two Treatment Groups $n = 26$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$-Ratio</td>
<td>$p$</td>
</tr>
<tr>
<td>Confidence</td>
<td>0.423</td>
<td>0.659</td>
</tr>
<tr>
<td>Causation</td>
<td>0.279</td>
<td>0.758</td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.443</td>
<td>0.646</td>
</tr>
<tr>
<td>Understanding</td>
<td>0.332</td>
<td>0.720</td>
</tr>
<tr>
<td>Trust</td>
<td>0.150</td>
<td>0.862</td>
</tr>
<tr>
<td>Total score</td>
<td>0.025</td>
<td>0.975</td>
</tr>
</tbody>
</table>
Removing the extreme outliers from the STEP and the drop-out group data, increased the probability of similarity between the three research groups on the pretest PAS scales, with the exception of the confidence scale. Since removing the outlier data helped stabilize and equalize the data at pretest, research findings associated with the PAS, have been presented with outlier data, and with outlier data removed.

The demographic information obtained during the pretest was reviewed to further assess the similarity of the three research groups. Demographic statistics with outlier data, and with outlier data removed are presented in Table 7.

Table 7

Demographic Statistics for Three Research Groups

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Traditional STEP Group Outlier Data Included</th>
<th>STEP Group Outlier Data Removed</th>
<th>STEP - Im Group No Outliers Exist</th>
<th>Drop - Out Comparison Group Outlier Data Included</th>
<th>Drop - Out Comparison Group Outlier Data Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 14 )</td>
<td>( n = 12 )</td>
<td>( n = 14 )</td>
<td>( n = 10 )</td>
<td>( n = 9 )</td>
</tr>
<tr>
<td>Age of participant</td>
<td>35.35</td>
<td>35.08</td>
<td>36.64</td>
<td>32.60</td>
<td>32.44</td>
</tr>
<tr>
<td>School years completed</td>
<td>14.0</td>
<td>14.33</td>
<td>15.07</td>
<td>13.50</td>
<td>13.44</td>
</tr>
<tr>
<td>Women/men ratio</td>
<td>10/4</td>
<td>9/3</td>
<td>12/2</td>
<td>9/1</td>
<td>9/0</td>
</tr>
<tr>
<td>No. of children</td>
<td>2.35</td>
<td>2.5</td>
<td>1.86</td>
<td>2.30</td>
<td>2.22</td>
</tr>
<tr>
<td>Age of children</td>
<td>6.47</td>
<td>5.86</td>
<td>6.19</td>
<td>6.17</td>
<td>5.80</td>
</tr>
<tr>
<td>Single parent homes</td>
<td>2.0</td>
<td>1.0</td>
<td>1.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The greatest differences between the three research groups occurred on participants' age and on education. The drop-out comparison group participants were the youngest group,
approximately 3 years younger than the STEP group participants and approximately 4 years younger than the STEP-Im group participants. Members of the STEP-Im group attended approximately 1 more year of school than did members of the traditional STEP group, and approximately 1 1/2 years more school than did participants of the drop-out comparison group.

The three research groups consisted primarily of White, middle-class individuals. The STEP group had among its members one Italian immigrant participant and one Hispanic participant; and the STEP-Im group had one Hispanic participant. Although no family income information was gathered on the Parent Training Program Data Sheet, occupation of participants and spouses was obtained. Review of occupational information revealed three research groups which appeared to be comparable.

An attempt was made initially to balance the number of couples in the two treatment groups and the level of parent training experience. Five couples began the STEP training program, and three couples began the STEP-Im training program. One volunteer who registered late for the traditional STEP program brought a spouse who was not expected, and one volunteer who registered late for the STEP-Im program, who was expected to bring a spouse, showed up alone. Three of the five traditional STEP group couples completed the 8-week training whereas two of the three couples from the STEP-Im group completed the training.

Posttest statistics and change score statistics for the three research groups with outliers included and removed, are presented in Tables 8 - 11.
Table 8

**PAS Posttest Statistics for Three Research Groups (Outlier Data Included)**

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Traditional STEP Group ( n = 14 )</th>
<th>STEP - Im Group ( n = 14 )</th>
<th>Drop - Out Group ( n = 10 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Confidence</td>
<td>5.286</td>
<td>5.225</td>
<td>6.429</td>
</tr>
<tr>
<td>Acceptance</td>
<td>13.571</td>
<td>7.187</td>
<td>15.429</td>
</tr>
<tr>
<td>Trust</td>
<td>16.857</td>
<td>7.294</td>
<td>18.714</td>
</tr>
<tr>
<td>Total score</td>
<td>72.071</td>
<td>28.800</td>
<td>83.071</td>
</tr>
</tbody>
</table>

Table 9

**PAS Posttest Statistics for Three Research Groups (Outlier Data Removed)**

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Traditional STEP Group ( n = 12 )</th>
<th>STEP - Im Group ( n = 14 )</th>
<th>Drop - Out Group ( n = 9 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Confidence</td>
<td>5.833</td>
<td>5.202</td>
<td>6.429</td>
</tr>
<tr>
<td>Trust</td>
<td>17.500</td>
<td>7.622</td>
<td>18.714</td>
</tr>
<tr>
<td>Total score</td>
<td>74.333</td>
<td>28.350</td>
<td>83.071</td>
</tr>
</tbody>
</table>
### Table 10

*PAS Change Score Statistics for Three Research Groups (Outlier Data Included)*

| Survey Scale | Traditional STEP Group  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>n = 14</em></td>
<td><em>Mean</em></td>
<td><em>SD</em></td>
<td><em>n = 14</em></td>
<td><em>Mean</em></td>
<td><em>SD</em></td>
<td><em>n = 10</em></td>
<td><em>Mean</em></td>
<td><em>SD</em></td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>3.143</td>
<td>6.049</td>
<td>5.500</td>
<td>4.735</td>
<td>1.400</td>
<td>4.789</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causation</td>
<td>3.000</td>
<td>4.076</td>
<td>4.071</td>
<td>3.385</td>
<td>0.100</td>
<td>8.386</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.429</td>
<td>4.686</td>
<td>1.500</td>
<td>4.895</td>
<td>1.900</td>
<td>5.343</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>3.286</td>
<td>5.525</td>
<td>4.214</td>
<td>2.723</td>
<td>-0.900</td>
<td>6.402</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>5.857</td>
<td>6.735</td>
<td>8.714</td>
<td>3.709</td>
<td>2.600</td>
<td>6.603</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score</td>
<td>15.714</td>
<td>20.296</td>
<td>24.000</td>
<td>13.751</td>
<td>1.000</td>
<td>18.385</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 11

*PAS Change Score Statistics for Three Research Groups (Outlier Data Removed)*

| Survey Scale | Traditional STEP Group  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>n = 12</em></td>
<td><em>Mean</em></td>
<td><em>SD</em></td>
<td><em>n = 14</em></td>
<td><em>Mean</em></td>
<td><em>SD</em></td>
<td><em>n = 9</em></td>
<td><em>Mean</em></td>
<td><em>SD</em></td>
<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>3.833</td>
<td>3.664</td>
<td>5.500</td>
<td>4.735</td>
<td>0.556</td>
<td>4.216</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.750</td>
<td>4.434</td>
<td>1.500</td>
<td>4.895</td>
<td>0.333</td>
<td>2.121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>2.333</td>
<td>4.960</td>
<td>4.214</td>
<td>2.723</td>
<td>-2.222</td>
<td>5.142</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>6.500</td>
<td>5.977</td>
<td>8.714</td>
<td>3.709</td>
<td>1.556</td>
<td>6.064</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score</td>
<td>16.833</td>
<td>15.111</td>
<td>24.000</td>
<td>13.751</td>
<td>-2.000</td>
<td>9.721</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To remove the effect of the pre-test covariate from change scores, the following regression model was used to obtain adjusted means:

\[ \text{change score} = a + b \times \text{(pretest score)} \]

Adjusted means were found to be very similar to the unadjusted means (see Appendix I). This similarity indicated that the STEP group participants and STEP-Im group participants were uniformly distributed relative to the covariate. Another ANCOVA model, therefore, was employed to better investigate the pretest covariate and group influences simultaneously and to correct for any interaction between the two variables:

\[ \text{change score} = a + b \times \text{(pretest)} + c \times \text{(group)} \]

Rather than using adjusted means, this regression model combines a continuous variable (pretest) and a categorical variable (group), which produces \( F \)-statistics on coefficients \( b \) and \( c \). This ANCOVA model was used to investigate both the influence of the pretest covariate and the change score differences between the research groups on each scale of the five scales of the PAS.

The influence of the pretest covariate on attitude change for each scale of the PAS for the three combined research groups is presented in Table 12. The influence of research group on attitude change for each of the five PAS scales and overall, using the pretest scores as the covariates are also reported. Findings are reported with outlier data, and with outlier data removed.
Table 12

ANCOVA Results of PAS Pretest Scores and Attitude Change, and ANCOVA Results of Attitude Change for Three Research Groups

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Outlier Data Included (n = 38)</th>
<th>Outlier Data Removed (n = 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-Ratio</td>
<td>p</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>30.659</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Group</td>
<td>2.478</td>
<td>&lt; 0.099</td>
</tr>
<tr>
<td>Causation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>25.423</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Group</td>
<td>4.930</td>
<td>&lt; 0.013</td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>20.781</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Group</td>
<td>0.574</td>
<td>&lt; 0.569</td>
</tr>
<tr>
<td>Understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>19.139</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Group</td>
<td>6.979</td>
<td>&lt; 0.003</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>13.466</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Group</td>
<td>5.497</td>
<td>&lt; 0.009</td>
</tr>
<tr>
<td>Total score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>29.448</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Group</td>
<td>7.747</td>
<td>&lt; 0.002</td>
</tr>
</tbody>
</table>

It can be seen that the covariate exerted high levels of influence on attitude change with and without outlier data. Group, likewise, exerted significant levels of influence on attitude change on all of the scales, except the acceptance scale.

According to Ferguson (1981), when comparing two groups, the square root of $F = t$ (two-tailed), therefore, the $F$-ratio which was obtained by the ANCOVA model is reported and converted to a $t$-statistic for pair-wise comparisons. Because one-tailed probabilities are appropriate when direction is predicted (Ferguson, 1981), the probability associated with the converted $F$-ratio to $t$-statistic can be halved to reflect one-tailed probabilities.
Probabilities that the STEP group differed from the drop-out group on attitude change on causation, understanding, and trust ranged in significance from the .03 level to the .09 level with outlier data included. The acceptance scale showed an insignificant difference in the opposite direction of that expected. With outlier data removed, levels of significance ranged from .006 to .07 on four of the five scales. The acceptance scale showed insignificant differences. The probabilities of differences between the traditional STEP group and the drop-out group on the five scales of the PAS are shown in Table 13. Two-tailed levels of significance are reported.

Table 13

*ANCOVA Results of PAS Pretest Scores and Attitude Change, and ANCOVA Results of Group Differences in Attitude Change*

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Outlier Data Included (n = 28)</th>
<th>Outlier Data Removed (n = 21)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-Ratio</td>
<td>$t$-statistic</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>29.647</td>
<td>1.197</td>
</tr>
<tr>
<td>STEP &amp; drop-out</td>
<td>1.435</td>
<td>&lt; 0.244</td>
</tr>
<tr>
<td>Causation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test (covariate)</td>
<td>15.776</td>
<td>1.730</td>
</tr>
<tr>
<td>STEP &amp; drop-out</td>
<td>2.995</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test (covariate)</td>
<td>15.027</td>
<td>0.220</td>
</tr>
<tr>
<td>STEP &amp; drop-out</td>
<td>0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test (covariate)</td>
<td>14.419</td>
<td>2.196</td>
</tr>
<tr>
<td>STEP &amp; drop-out</td>
<td>4.825</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>6.717</td>
<td>1.758</td>
</tr>
<tr>
<td>STEP &amp; drop-out</td>
<td>3.090</td>
<td>&lt; 0.017</td>
</tr>
<tr>
<td>Total score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>17.011</td>
<td>1.998</td>
</tr>
<tr>
<td>STEP &amp; drop-out</td>
<td>3.993</td>
<td>&lt; 0.059</td>
</tr>
</tbody>
</table>
Hypotheses Findings

Hypothesis 1 predicted a greater change of attitude in the STEP-Im group than in the drop-out comparison group or the traditional STEP group. Analysis of covariance (ANCOVA) using the pretest scores as the covariates was used to test the significance levels of observed differences. Two-tailed probabilities which can be halved to reflect hypothesized directional differences associated with attitude change between the STEP-Im group and the drop-out comparison group, are presented in Table 14.

Table 14

ANCOVA Results of PAS Pretest Scores and Attitude Change, and ANCOVA Results of Group Differences in Attitude Change

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Outlier Data Included (n = 24)</th>
<th>Outlier Data Removed (n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-Ratio</td>
<td>t-statistic</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>9.984</td>
<td>4.789</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td>4.789</td>
<td>2.188</td>
</tr>
<tr>
<td>Causation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>34.491</td>
<td>13.661</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td>13.661</td>
<td>3.696</td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>27.897</td>
<td>13.661</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td>13.661</td>
<td>3.696</td>
</tr>
<tr>
<td>Understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>22.259</td>
<td>21.752</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td>21.752</td>
<td>4.663</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>9.341</td>
<td>14.006</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td>14.006</td>
<td>3.742</td>
</tr>
<tr>
<td>Total score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>49.267</td>
<td>32.707</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td>32.707</td>
<td>1.998</td>
</tr>
</tbody>
</table>
Probabilities that the STEP-Im and drop-out groups differed on attitude change were significant on four of the five PAS scales with, and without outlier data. Acceptance showed the least difference with significance at the .07 level (one-tailed).

Two-tailed probabilities associated with the differences between the STEP-Im and the traditional STEP group on attitude change from pretest to posttest on the five scales of the PAS are presented in Table 15.

Table 15

ANCOVA Results of PAS Pretest Scores and Attitude Change, and ANCOVA Results for Group Differences in Attitude Change

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Outlier Data Included (n = 28)</th>
<th>Outlier Data Removed (n = 26)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-Ratio</td>
<td>t-statistic</td>
</tr>
<tr>
<td>Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>23.426</td>
<td>1.161</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td>1.350</td>
<td>1.265</td>
</tr>
<tr>
<td>Causation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>6.931</td>
<td>1.219</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td>1.487</td>
<td>1.234</td>
</tr>
<tr>
<td>Acceptance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>7.316</td>
<td>0.823</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td>0.678</td>
<td>0.823</td>
</tr>
<tr>
<td>Understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>5.821</td>
<td>1.105</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td>1.223</td>
<td>1.105</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>11.749</td>
<td>1.413</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td>1.997</td>
<td>1.413</td>
</tr>
<tr>
<td>Total score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest (covariate)</td>
<td>12.003</td>
<td>1.691</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td>2.861</td>
<td>1.691</td>
</tr>
</tbody>
</table>
With outlier data included, the STEP-Im group showed a significance level of .08 (one-tailed) over the STEP group on the trust scale. With outlier data removed, the imagery group showed a significance level of .10 (one-tailed) over the traditional group on the understanding scale.

Pretest scores and change scores were normalized or standardized and plotted in Figure 1 to better illustrate how individual participants from the two treatment groups changed over the 8-week period.

Figure 1. Standardized participant change score sum in relation to standardized pretest sum for STEP (G1) and STEP-Im (G2) groups.

By normalizing the scores, four quadrants were created to demonstrate how participants who initially scored above and below the mean changed from pretest to posttest. Numbers
on the horizontal axes represent standard deviations above and below the mean at pretest. Numbers on the vertical axis represent standard deviations above and below the mean at posttest. Fourteen traditional STEP group participants (G1), including two outliers, and 14 STEP-Im participants (G2) who completed the program are included. One outlier STEP group participant is clearly discernible in the upper left quadrant, and one is clearly discernible in the lower right quadrant. The greatest differences between the two groups occur in the upper and lower left quadrants. Four traditional STEP group members appear in the lower left quadrant, showing those who initially scored low and made changes in a negative direction at posttest. No STEP-Im group (G2) participants are represented in the quadrant. In the upper left quadrant, representing those participants who initially scored low and improved their scores at posttest, there are four traditional STEP group participants (including one outlier) and six STEP-Im group participants. Participants from both groups who scored above the mean at pretest appear to be equally distributed above and below the mean at posttest.

Due to the multivariate nature of the study using five scales, a multivariate or joint probability test to assess the overall, simultaneous differences between the STEP-Im and drop-out groups and the two treatment groups was needed. The Wilks' Lambda test (Johnson & Wichern, 1980) was selected.

The MANCOVA results associated with the simultaneous differences between the STEP-Im group and the drop-out group on the PAS are presented in Table 16. Based on multivariate testing, the likelihood that the greater attitude change observed by the STEP-Im group was obtained by chance was less than 2 chances in 1,000 with outlier data included, and less than 1 chance in 1,000 with outlier data removed. The multivariate test was successful at detecting differences between the two groups.
Table 16

**MANCOVA Results of PAS Change Score Differences Between STEP-Im and Drop-Out Groups**

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>Outlier Data Included (n = 24)</th>
<th>Outlier Data Removed (n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wilks' Lambda Statistic</td>
<td>F-Ratio</td>
</tr>
<tr>
<td>STEP-Im &amp; drop-out</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.255</td>
<td>7.597</td>
</tr>
</tbody>
</table>

When the multivariate test was used to determine the joint probability that change score differences between the STEP-Im and traditional STEP groups as great as those observed in this study would occur by chance, the multivariate test failed to detect differences.

The MANCOVA results associated with the PAS scale change score data for the two treatment groups are presented in Table 17.

Table 17

**MANCOVA Results of PAS Change Scores Differences Between STEP-Im and Traditional STEP Groups**

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>Outlier Data Included (n = 28)</th>
<th>Outlier Data Removed (n = 26)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wilks' Lambda Statistic</td>
<td>F-Ratio</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td></td>
<td>0.925</td>
</tr>
</tbody>
</table>
These findings appear highly suspect because the change scores of the STEP-Im group were consistently and measurably greater than those for the STEP group. Although no single scale had a $p$ value which was conclusive, all scales were in a positive direction which would suggest more than chance. Due to the compelling evidence, further research and analysis were pursued.

According to Wichern and Johnson (1980), multivariate tests assume a normal distribution, an equal covariance matrix, and independence. To test the assumption of normality, change score residuals were analyzed and found to be normally distributed. To test the assumption of a similar covariance matrix, or each treatment group's covariance of change scores from scale to scale varying similarly, covariance matrices were constructed for the two treatment groups. The covariance matrices for the traditional STEP group and the STEP-Im group with outlier data included are presented in Tables 18 and 19.

Table 18

*Covariance Matrix for Traditional STEP Group With Outlier Data Included (n = 14)*

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Confidence</th>
<th>Causation</th>
<th>Acceptance</th>
<th>Understanding</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>36.593</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causation</td>
<td>11.000</td>
<td>16.615</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>9.110</td>
<td>5.077</td>
<td>14.945</td>
<td>30.527</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>29.791</td>
<td>8.385</td>
<td>17.989</td>
<td>11.582</td>
<td>45.363</td>
</tr>
</tbody>
</table>
Table 19

Covariance Matrix for STEP-Im Group (n = 14)

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Confidence</th>
<th>Causation</th>
<th>Acceptance</th>
<th>Understanding</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>22.423</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causation</td>
<td>4.654</td>
<td>11.456</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>4.038</td>
<td>9.500</td>
<td>23.962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>6.423</td>
<td>4.060</td>
<td>7.885</td>
<td>7.412</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>7.538</td>
<td>5.022</td>
<td>3.000</td>
<td>2.912</td>
<td>13.758</td>
</tr>
</tbody>
</table>

With outlier data included, the sum of the covariances for the STEP treatment group was 408.0, whereas the sum of the covariances for the STEP-Im treatment group was 188.8. In 22 of 25 cases, the STEP group showed relatively higher covariance than the STEP-Im group. The sum of the differences of the mean absolute deviation in covariance between the STEP and STEP-Im groups was 228.3. A small mean absolute deviation between the groups suggests a similar covariance. The change score covariance matrices of the two treatment groups appeared to be dissimilar. A randomization test (Noreen, 1989; see Appendix J) was used to test the probability of no differences between the two covariance matrices. On 1,000 shuffles or trials, 510 trials showed covariance magnitudes as great as that observed between the two treatment group matrices. In other words, the probability that the two covariance matrices are the same is 510 out of 1,000. Likewise, the probability of differences between the covariance of the two groups is 490 times out of 1,000, or approximately 50%.

The covariance matrices for the two treatment groups with the outlier data removed from the traditional STEP group are presented in Tables 20 and 21. The STEP-Im
covariance information in Table 21 is identical to that presented in Table 19 because there were no outliers in the STEP-Im group.

Table 20

*Covariance Matrix for STEP Group With Outlier Data Removed (n = 12)*

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Confidence</th>
<th>Causation</th>
<th>Acceptance</th>
<th>Understanding</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>13.424</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causation</td>
<td>-1.197</td>
<td>12.811</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>2.136</td>
<td>4.295</td>
<td>19.659</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>4.879</td>
<td>4.030</td>
<td>15.000</td>
<td>24.606</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>12.182</td>
<td>-1.136</td>
<td>10.682</td>
<td>10.182</td>
<td>35.727</td>
</tr>
</tbody>
</table>

Table 21

*Covariance Matrix for STEP-Im Group (n = 14)*

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Confidence</th>
<th>Causation</th>
<th>Acceptance</th>
<th>Understanding</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>22.423</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causation</td>
<td>4.654</td>
<td>11.456</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>4.038</td>
<td>9.500</td>
<td>23.962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>6.423</td>
<td>4.060</td>
<td>7.885</td>
<td>7.412</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>7.538</td>
<td>5.022</td>
<td>3.000</td>
<td>2.912</td>
<td>13.758</td>
</tr>
</tbody>
</table>
With the outlier data removed from the STEP group, the sum of the change score covariances for the STEP group was 228.2. The sum of the covariances for the STEP-Im group was 188.8. In 10 out of 25 cases, the STEP group had a higher covariance than did the STEP-Im group. The mean absolute deviation between the STEP and STEP-Im group was 148.5. Although removal of the outlier data increased the similarity between the two covariance matrices, the two groups still appeared dissimilar. Again, to test differences between the two covariance matrices, a randomization test was used. Of 1,000 trials, 619 showed covariance magnitudes as great as that observed between the two treatment group matrices. In other words, the probability that the covariance matrices are related was .619. The assumption of similarity between the observed treatment group covariances would probably be wrong 38% of the time.

The Approximate Randomization Technique (ART) is a computer intensive method which is used for testing hypotheses. Like the MANCOVA, the ART can measure joint probabilities of events such as magnitude and direction of change on several variables. Unlike the MANCOVA, the ART makes no assumptions about the variability, independence, or distribution of data. The technique can be reliably used with data that are not distributed normally, data that are not independent, and data from groups that do not have similar covariance matrices. It can also be used with small data samples where parametric methods are not sufficiently sensitive to reliably detect the effects of treatment. Referring to the ART, Noreen (1989) wrote:

Randomization is used to test the generic null hypothesis that one variable (or group of variables) is unrelated to another variable (or group of variables). Significance is assessed by shuffling one variable (or set of variables) relative to another variable (or set of variables). Shuffling ensures that there is in fact no relationship between the variables. If the variables are related, then the value of the
test statistic for the original unshuffled data should be unusual relative to the values of the test statistic that are obtained after shuffling [on multiple iterations]. (p. 9)

Noreen noted that the ART is valid in situations where conventional parametric tests are valid, but that conventional parametric tests are often invalid when the randomization test is valid. In addition, Noreen demonstrated that there is no loss in power when randomization tests are used in place of conventional parametric tests.

By using the ART in this study to test the hypothesis of greater changes by the STEP-Im group over the traditional STEP group, a test statistic was created for comparison to the parametric ANCOVA results on each of the five PAS scales, and to the more questionable MANCOVA results. If the randomization technique produced probabilities on each of the five PAS scales which were similar to the ANCOVA results, but produced a joint probability that differed from the MANCOVA results, it could be concluded that the randomization technique, but not the MANCOVA test, was more appropriate and valid for this situation.

The application of ART to the question of treatment group differences is provided in Appendix K. The steps of application begin with the ART equivalent of the ANOVA/MANOVA tests, and proceed through the equivalent of the ANCOVA/MANCOVA analyses.

In this study, the ART results matched the ANCOVA results very closely for each scale of the PAS and on the total score, however, the MANCOVA probability and the ART joint probability revealed extremely different results. A comparison of the nonparametric ART findings with the more conventional and previously reported ANCOVA and MANCOVA findings are presented in Table 22. Results are reported with outlier data included, and with outlier data removed.
Table 22

*Comparison of ART/ANCOVA and Joint Probability/MANCOVA Results for PAS Change Score Differences Between Two Treatment Groups*

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>Nonparametric ART Probabilities</th>
<th>Parametric ANCOVA Probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outlier Data Included</td>
<td>Outlier Data Removed</td>
</tr>
<tr>
<td>Confidence</td>
<td>0.249</td>
<td>0.388</td>
</tr>
<tr>
<td>Causation</td>
<td>0.248</td>
<td>0.455</td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.402</td>
<td>0.590</td>
</tr>
<tr>
<td>Understanding</td>
<td>0.280</td>
<td>0.165</td>
</tr>
<tr>
<td>Trust</td>
<td>0.164</td>
<td>0.289</td>
</tr>
<tr>
<td>Total score</td>
<td>0.113</td>
<td>0.094</td>
</tr>
<tr>
<td>Joint/MANCOVA</td>
<td>0.0097</td>
<td>0.0190</td>
</tr>
<tr>
<td>STEP-Im &amp; STEP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The MANCOVA results indicate that differences between the two groups of the magnitude observed in this study might occur by chance approximately 920 or 871 times out of 1,000 (with outlier data included, or with outlier data removed, respectively). By using the ART, differences as great as those observed in this study occurred by chance 97 times out of 10,000 random trials with outlier data included. With outlier data removed, differences as great as those observed in this study occurred by chance 190 times out of 10,000. When the hypothesized direction of attitude change differences (STEP-Im > traditional STEP) was taken into account, the ART joint probability estimate was 49 times out of 10,000, or .005 with outlier data included and 95 times out of 10,000, or .010 with outlier data removed. The fact that the ART probabilities on the individual scales of the PAS match the ANCOVA
probabilities lends credibility to the significant simultaneous differences found with the ART. These significant findings provide strong support for Hypothesis 1.

Attitude outlier position was not considered in the analyses for Hypotheses 2 through 5. Hypothesis 2 predicted that the STEP-Im group would attend more sessions than would the traditional STEP group. A t-test was used to compare the mean number of regular sessions attended by the participants of the two treatment groups. Attendance statistics for all beginning subjects from the traditional STEP-Im and STEP groups and results of the test for significance are presented in Table 23. Results indicate that there was no difference in attendance between the two treatment groups. Therefore, there was no support for Hypothesis 2.

Table 23

*Hypothesis 2 -- Attendance Statistics, and t-test Results*

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Mean</th>
<th>SD</th>
<th>t-statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional STEP group</td>
<td>5.850</td>
<td>0.565</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEP-Im group</td>
<td>5.944</td>
<td>0.595</td>
<td>0.114</td>
<td>&lt; 0.909</td>
</tr>
<tr>
<td>(n = 18)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis 3 predicted that STEP-Im group participants would report completion of reading assignments more frequently than would the traditional STEP group participants. Reading assignment statistics for the STEP-Im and STEP groups based on the data of participants who completed the study by attending at least six sessions and results of the test for significance are presented in Table 24. Analysis of the data from the two treatment groups yielded identical means. There was no support for Hypothesis 3.
Table 24

Hypothesis 3 — Reading Assignment Completion Statistics, and t-test Results for STEP and STEP-Im Groups

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Mean</th>
<th>SD</th>
<th>t-statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional STEP group (n = 14)</td>
<td>7.429</td>
<td>1.222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEP-Im group (n = 14)</td>
<td>7.429</td>
<td>1.158</td>
<td>0.001</td>
<td>&lt; 0.999</td>
</tr>
</tbody>
</table>

Hypothesis 4 predicted that the participants of the STEP-Im group would report practicing the parenting concepts with their target children more frequently than would the participants of the traditional STEP group. A t-test was used to analyze differences between the concept practice means of the two treatment groups. Concept practice statistics for the STEP-Im and traditional STEP groups and the results of the test for significance are presented in Table 25.

Table 25

Hypothesis 4 — Concept Practice Statistics, and t-test Results for STEP-Im and STEP

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Mean</th>
<th>SD</th>
<th>t-statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional STEP group (n = 14)</td>
<td>31.857</td>
<td>21.038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEP-Im group (n = 14)</td>
<td>63.357</td>
<td>29.188</td>
<td>3.275</td>
<td>&lt; 0.003</td>
</tr>
</tbody>
</table>
STEP-Im group participants reported having practiced the Adlerian parenting concepts approximately twice as often as did the traditional STEP group participants. Differences of the magnitude observed in this study might be expected to occur by chance approximately 3 times in 1,000. When halved to reflect the hypothesized direction of differences, significance was at the .001 level. There was strong evidence to support Hypothesis 4.

Hypothesis 5 predicted that attitude change from pretest to posttest on the five attitude scales by the STEP-Im group would be associated with participant reporting of amount of time spent on imagery homework. Five regression analyses and a multivariate test for significance of simultaneous differences were used to test the hypothesis. The multivariate results associated with Hypothesis 5 as well as the significance levels of the regression findings on each of the individual scales are presented in Table 26.

Table 26

<table>
<thead>
<tr>
<th>Survey Scale</th>
<th>$F$-Ratio</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td>0.407</td>
<td>&lt; 0.536</td>
</tr>
<tr>
<td>Causation</td>
<td>0.026</td>
<td>&lt; 0.875</td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.552</td>
<td>&lt; 0.472</td>
</tr>
<tr>
<td>Understanding</td>
<td>0.108</td>
<td>&lt; 0.748</td>
</tr>
<tr>
<td>Trust</td>
<td>1.912</td>
<td>&lt; 0.192</td>
</tr>
<tr>
<td>Multivariate regression (Wills' Lambda Statistic 0.748)</td>
<td>0.538</td>
<td>&lt; 0.743</td>
</tr>
</tbody>
</table>
Multivariate test results revealed an insignificant relationship between the two variables. There was no support for Hypothesis 5.

The research question, asking whether participants would experience the two treatment programs differently was approached through a Course Evaluation (see Appendix H), comments by participants at the last session, and by behavioral observation by the leader during the 8-week program and during the final discussion at the last session.

All of the participants from both groups indicated that they would recommend STEP to a friend. Participants from each treatment group were asked to rate role-play or classroom imagery on a scale from 1 to 10 (1 being lowest) in terms of helpfulness to their insight, learning, and understanding. The groups rated the two techniques somewhat differently. The STEP-Im group compiled a mean rating of 7.5 for the classroom imagery technique. The traditional STEP group showed a mean rating of 6.23 for role-play. It should be noted, however, that a great deal more classroom time was devoted to guided imagery for the STEP-Im group than to role-play for the traditional STEP group. It is also interesting to note that the STEP-Im group gave imagery homework a 6.5 rating as compared to their 7.5 rating of classroom imagery.

STEP-Im group participants were asked if they would use relaxation and imagery again in the future. Of the 14 STEP-Im group participants, 12 stated that they would use relaxation and imagery again. The most commonly given reason for continued use of the techniques were (a) to relieve stress and "get away," (b) understanding of self and others, and (c) to improve outlook and realize goals. Other categories mentioned by more than one person were (a) help in solving problems, (b) better internal focusing, (c) parenting issues, and (d) spiritual preparation and purposes. Other uses mentioned by at least one person were (a) increasing self-discipline, (b) practicing or rehearsing something, (c) reviewing material
to be learned, and (d) self-healing. Two participants stated that they would not use imagery again. One stated that he had a conflict of effort trying to focus and relax at the same time, but rated classroom imagery slightly higher than homework imagery. The other participant said that she thought it was useless and gave both activities a low rating of 2. Of the 14 STEP-Im participants, 11 had intentions of continuing with the support group that was forming, whereas 8 of the 14 traditional STEP group participants had intentions of continuing.

Both written and verbal comments made by the STEP group participants at the end of the eight sessions centered primarily on the progress they had made by "letting go", how this aspect of the program had already made a difference with their children, and their enjoyment of the class and appreciation of time and efforts of the leaders. Other areas mentioned were the value of discussion with other parents and the comfortable atmosphere of the class.

Both written and verbal comments by the STEP-Im group participants centered primarily on the usefulness of the imagery work which included personal insights they had acquired along the way, progress they had made in "letting go" and how this aspect of the program had already made a difference with their children, and how they intended to continue with the support group. Other areas mentioned were appreciation to leaders, excellence of materials, and enjoyment of the class. Two participants asked if the class would be offered again later because they wanted their spouses to attend.

Other than the comments by the STEP-Im group that referred directly to the imagery work and what it meant to them, comments from the two groups regarding the class were differentiated more by manner and intensity than by kind. Comments by participant members and subjective observations are discussed later.
Summary of Findings

Although no hypothesis was made regarding greater attitude changes by the traditional STEP group over the drop-out group and no multivariate testing was undertaken, the traditional STEP group demonstrated statistically significant differences over the drop-out group on several PAS scales.

The attitudes of the STEP-Im group changed significantly more on the PAS than did the attitudes of the drop-out comparison group. Multivariate testing for simultaneous differences in the hypothesized direction revealed probabilities at the .001 level (one-tailed) with outlier data included, and with outlier data removed. Four of the five scales revealed results which were statistically significant. The smallest level of difference was demonstrated on the acceptance scale which showed significance at the .07 level (one-tailed) with, and without outlier data.

The STEP-Im group also achieved greater attitude change than the traditional STEP group. The ART revealed significance at the .005 level, (one-tailed equivalent) with outlier data included and significance at the .01 level (one-tailed equivalent) with outlier data removed. The greatest differences were demonstrated on the trust and understanding scales. The trust scale showed significance at the .04 level with outlier data included, and the understanding scale showed significance at the .04 level with outlier data removed. There was strong support for Hypothesis 1.

Data from Hypothesis 2 revealed virtually no difference between the two treatment groups on attendance. There was no support for Hypothesis 2.

Data from Hypothesis 3 revealed no differences between the two treatment groups on the number of reading assignments completed. There was no support for Hypothesis 3.

Data from Hypothesis 4 revealed significant differences at the .001 level (one-tailed) in favor of the STEP-Im group over the traditional group on the number of times participants
practiced the concepts with their target children. The STEP-Im group practiced the concepts approximately twice as often as did the traditional group. There was strong support for Hypothesis 4.

Data from Hypothesis 5 showed no relationship between imagery practice at home and attitude change. Multivariate testing showed no support for Hypothesis 5.

The research question was developed to determine differential program experiences by the two treatment groups. Although analysis was, for the most part, subjective, one unscientific, but objective, measure was administered. Participants were asked to rate classroom imagery and role-play on a scale from 1 to 10 (1 being the lowest) as being helpful to their insight and learning. The STEP-Im group showed a mean rating of 7.5 for the classroom imagery technique, and the traditional STEP group compiled a mean rating of 6.5 for the role-play technique. It should be noted, however, that the classroom imagery technique was used more frequently and had a greater emphasis in the modified program than the role-play technique did in the traditional program. Group differences with regard to comments at posttest were characterized by level of enthusiasm and intensity rather than by content. Observations made at posttest and throughout the program are discussed in depth in a subsequent section.

Discussion and Conclusions

In this section the major findings of this study are compared with the findings of other researchers. Due to the exploratory nature of this study which used guided imagery with an adult population and with a parent training program, comparisons focused on guided imagery research populations which were for the most part unlike that used in this study and parent education research using the traditional STEP program and its effect on attitude change. The major findings of this study are related to Hypothesis 1 and Hypothesis 4. Conclusive
evidence was found for Hypothesis 1 which predicted that the participants attending the STEP-Im program would demonstrate a greater attitude change than participants who showed interest in the program but did not attend, or participants who attended the traditional program.

The findings of this study are very similar to those reported by Summerlin and Ward (1981) who found significant simultaneous differences for the STEP group over a control group. The findings of this study, however, go a step further with significantly higher levels of attitude change by the imagery participants over those of traditional participants. These results show that a guided imagery modification can make STEP more effective at changing attitudes which are important to parent-child relations.

Guided imagery has been associated with attitudinal change and increased understanding. The greater differences on the understanding and trust scales in the present study, which indicate a greater level of understanding and trust of their children by parents receiving the guided imagery treatment, lend further support to Cohen and Twemlow's (1981) conclusions that guided imagery facilitates perceptual and attitude change, increases capacity to be self-supporting, and significantly changes the way imagers see themselves and others. Participants who are guided through imagined scenarios of themselves as children in various situations and of themselves communicating freely with their children appear to gain an increased understanding of their children's intellectual and emotional life and an attitude of freedom toward their children's expressions of individuality. Not unlike the findings of Cohen and Twemlow, as well as other researchers (Galyean, 1985; Richardson, 1982), the major findings of this study suggest that guided imagery may increase participants' focus, and thereby enhance their understanding and appreciation of the perspectives of others.

As in Kozlowski's (1978) study, the weakest scale difference was demonstrated on acceptance in this study. No significant difference was observed on the acceptance scale
between the traditional STEP group and the comparison group. Although no significant difference was found on the acceptance scale between the STEP-Im and the traditional STEP groups, the relatively higher probability reported between the STEP-Im group over the drop-out comparison group (p < .07, one-tailed) suggests that change in parental acceptance, which can be difficult to influence, is more effectively influenced by STEP enhanced by guided imagery.

Strong support was found for Hypothesis 4, which predicted that the participants from the STEP-Im group would practice the parenting concepts more with their target children than would the participants of the traditional STEP group. Results from the present study support previous findings that students experiencing educational imagery develop more proactive attitudes toward learning, and that educational imagery allows students to incorporate studied concepts, make decisions, and have more confidence in their decisions (Richardson, 1982).

The classroom imagery scripts developed for this study asked the participants to create scenarios in which they chose between using their typical method of handling a problem or trying out a newly learned method in imagery. The parents risked little by making the decision to try the technique in imagery. They were able to make the decision in a deliberate way and to carry it out with resolve. Each person in the group was able to apply the newly learned skill to a personally relevant situation and to see themselves performing the skill calmly and successfully. Parents who made the decision to imagine themselves performing the skills with their target children often were taking the first step in initiating the skill in actuality. Making the decision and performing the skill successfully in imagery can create a positive mind set for continued action and practice. Sheikh and Jordan's (1983) conclusions that experiencing something in imagery is very much the same psychologically as
experiencing it in actuality, and that images act as sources of motivation for future behavior, seem particularly relevant to these findings.

The present findings also support previous findings that guided imagery can be helpful in ways that accomplish educational objectives (Richardson, 1982). The results suggest that guided imagery can affect motivation and stimulate more aggressive and self-responsible actions toward learning. Although further statistical analysis revealed no increase in attitude change for participants who reported more practice, it seems reasonable to believe that in time increased practice might lead to improved parent-child relations and childhood behaviors. These relations can, in turn, encourage and strengthen parents in their newfound attitudes and behaviors.

Hypotheses 2 and 3 which predicted that participants in the STEP-Im group would demonstrate higher levels of attendance and would read more chapters than would participants in the traditional STEP group, were not supported. Findings from this research indicate no differences between the two treatment groups on the number of sessions attended or the number of chapters read by participants.

It should be noted, however, that the findings related to Hypothesis 2 may have been negatively influenced by diligent efforts to maintain high levels of attendance. Post-cards of encouragement were sent periodically throughout the 8-week program. Homework assignments were mailed with handwritten notes to participants who missed a class. Participants were called on the telephone twice during the course of the program to see if they had any concerns and to encourage their continued progress and attendance. Make-up classes offered early and frequently, although not included in attendance comparisons, helped keep participants current, and may have prevented drop-outs. Although many make-up classes were offered, only two or three participants were usually present, and regular attendance was generally good.
The influence of the controversy of guided imagery within the school district where the study took place appeared to have had little influence on the lack of significant attendance differences, although one couple left the STEP-Im program after the first session because of it's reported "new-age, meditation, and satanic ties." No other drop-outs appeared to be related to this perception. All of the participants who dropped out of the groups were contacted shortly after they quit attending. In each case, the participant related reasons such as conflicting schedules or family illness that had nothing to do with the techniques being used in the class.

Results indicate that while guided imagery may be more effective at changing parental attitudes and increasing concept practice, the technique probably has no influence on attendance. There is no support for Wilmes-Reitz's (1983) suggestion that role-play might be associated with poor levels of attendance. Leader perseverance may exert more influence on attendance than either the role-play or imagery techniques.

Results also suggest that the completion of reading assignments is associated with a minimum level of commitment and effort for attending the class. Participants may view the reading homework as the smallest level of preparation that is acceptable for their continued involvement. This minimum level of investment may continue to be made, even when participants do not practice the concepts with their children.

Hypothesis 5 which predicted that greater imagery practice at home would be associated with higher levels of attitude change by STEP-Im group participants was not supported, even though other researchers have associated practice with vividness of imagery and vividness with better outcome (Richardson, 1982).

The lack of significance overall for this hypothesis indicates that the imagery practice that was required of the STEP-Im participants contributed little to the findings related to group difference. It is difficult to assess whether the lack of significant findings is related
more to the quality or type of imagery work done, the lack of a guide, or to the premise that
more is not necessarily better. Homework assignments were primarily related to general
outcome of goals and self-affirmation. Imageries of this type may contribute more directly to
factors associated with motivation than to attitude change, although some level of motivation
is required to complete the imagery homework. If outcome and self-affirmation imageries
influence more concept practice, it seems logical that continued practice would eventually
lead to higher levels of attitude change. However, the 8-week period may not have provided
time to observe that change. Evidence suggests that subjects who experience imagery
techniques continue to make gains after program completion (Cohen & Twemlow, 1981).

Regardless of the reasons for the lack of findings associated with Hypothesis 5 or other
indirect contributions imagery homework might provide, the evidence suggests that
classroom imagery alone is sufficient to influence statistically significant levels of difference
in attitude change. Results indicate that classroom imagery can be a powerful tool in
teaching parenting skills, influencing attitude change, and in motivating parents to practice
those skills with their children. Results suggest that classroom imagery alone can influence
attitude change without imagery homework.

Discussion of the research question which addressed differences between group
experience for the STEP-Im and traditional STEP groups was based on written and verbal
comments at posttest and on behavioral observations during the course of the program.

STEP-Im participants were asked to comment on the guided imagery techniques used in
their class, the class in general, and to make suggestions regarding the use of guided imagery
for future parenting classes. One participant who was aware that role-play was being used in
the other class wrote,

I don't think I could have experienced the same feelings with role playing (as I have
done a lot of role-playing when I went to seminars . . . when I worked).
recommend it [imagery] to be used in future classes. I was very impressed with the imagery. I was skeptical at first but after the chapter on encouragement, the imagery really hit me to the core. It was very powerful!!

Another participant who had a very intense and emotional reaction to the fourth session imagery, where participants were asked to imagine themselves as children being listened to in a reflective way or with a closed response, commented about the imagery experiences from the program:

I can't say enough for it--on three or four occasions, I've come home from class with a deepening understanding of things I knew I need to see "deep down", but aren't there yet. I'd like to maintain this every day! It's been especially good for me to go back into my own childhood and "re-see" certain things -- it seems to have helped with some repairs.

Another STEP-Im group member commented:

I feel the imagery was a great way to relax and relate to what we are in this class for --how to be a great parent and love our children and how to deal with every day life at the same time. I will use imagery to relieve stress and just for relaxation and to explore how to use it to work out some problems that I have been dealing with for about a year now.

Not all comments by participants were favorable. Two participants did not find the technique helpful. One participant commented, "[I] can't stay focused when relaxing (conflict of effort)". Another imagery group member commented, "although I enjoyed the relaxation I found it useless".

One recommendation for future classes was that more time be devoted to imagery work during the class. Another participant who observed that some members were shy about lying on the floor recommended, that "it would be better if all participants laid in the floor--it is much more fulfilling and relaxing." One imagery group member stated that he or she would have liked the classroom imagery "to have focused more often and intensely on responsible and effective parenting, while letting go of old styles."
One traditional STEP group member commented, "Allowing the time for us to gain insights from other parents was extremely helpful! I felt very comfortable in this group."

Another STEP participant wrote, "I have really enjoyed this course--I feel I have learned a lot of practical parenting information. The varied teaching techniques helped to understand the principles. Thank you!" Another more enthusiastic and verbal participant remarked:

I have gotten more than I had imagined I would over a mere 8 sessions. Just making a few relatively simple changes in my own behavior seems to have improved my parenting a lot. My daughter has reacted positively and seems more mature and even glad for the relief (i.e., let up on control!)

The differences in group comments during the last session regarding group experience were characterized by a broader range of benefits expressed by parents who participated in the STEP-Im group. Participants in both groups made similar comments regarding the usefulness of the parenting concepts and the contribution of the concepts to their relationship with their children. The STEP-Im group, however, appeared to view the class more as a personal growth experience than as a classroom learning experience. Comments were more personal and anecdotal, and discussion referenced personal and interpersonal insights regarding issues other than parenting. Comments were conveyed with a depth of enthusiasm that was not generally present in the traditional group.

Over the course of the 8-week program, the participants in STEP-Im group appeared to develop a greater cohesiveness. They spent more time talking in the classroom and in the parking lot than did participants in the STEP group. On several occasions two or more parents were still talking in the parking lot 15 to 20 minutes after the end of the sessions. At the last session, participants from the imagery group talked more about continuing the support group, getting their spouses to attend, and were generally slower to separate from the leader and fellow group members than were the STEP participants.
By the second or third week, and throughout the remainder of the program, the STEP-Im group participants were more self-disclosing than were participants in the traditional STEP group. They revealed situations that placed them in a bad light more frequently and were more willing to call into question their understanding and grasp of the concepts. Participants in the traditional STEP group, on the other hand, gave more "right" answers and disclosed less information regarding their personal experience and difficulties applying the concepts. Because it seemed evident that the traditional group participants understood the concepts better and were perhaps even more academically inclined, the years of school completed by the two groups were reviewed. Based on demographic data collected at pretest, the two groups were comparable; in fact, the STEP-Im group actually averaged 3 years of college as opposed to 2 years for the traditional group. It soon became evident that the STEP-Im participants, unlike the STEP participants, were simply more willing to take a risk, be imperfect, and share their feelings and failures as well as their successes. They appeared to view the experience as more personal than academic; or more as a growth experience than an academic pursuit.

Recommendations

This section consists of recommendations related to the use of the guided imagery modification with parent education groups and recommendations related to future research with this population.

Due to the controversial nature of guided imagery within the community and school district where this study took place, it is recommended that clinicians and researchers be aware of such issues within a district or community before the technique is used. Care should be given in preparing participants for the use of the technique and the objectives behind its use. Although participants agree to participate in the class, instructions and
scenarios should always allow participants to chose whether or not to participate imaging a certain scene.

Because strong emotions are aroused for some participants, group members should be encouraged at the beginning and throughout the program to talk with the leader during the session or privately after the session if they experience any bad feelings or pain from the imagery experience. Adequate time should be built into the program agenda to make sure these issues have an opportunity to surface and be discussed.

Adequate space for participants to lie on the floor at a comfortable distance from others should be provided. The room where this study took place, although adequate for sitting in chairs, was too small for all of the participants to feel comfortable with the amount of personal space which was available if they all chose to lie on the floor at the same time. Therefore, many participants chose to remain in their chairs for the exercises.

The findings of this study suggest that imagery homework is not necessary in order for classroom imagery to be an effective tool for increasing attitude change. It is recommended, however, that at least the first imagery exercise used in this study remain in the format because it contains a number of sensory exercises during the first week that help to sharpen the vividness of imagery for the classroom exercises which follow. Or, rather than being assigned for homework, it might be included during the first session.

Although following up absentees with telephone calls, letters, and missed homework, and offering frequent make-up classes may appear to be assuming too much of the group members' responsibility, it was no doubt helpful in maintaining a high level of attendance and completion of the program. To help neutralize my "good" leader example, I joked with group members that I, unlike they with their children, only had to "live with them" for 8 weeks. As the program progressed, participants, especially from the STEP-Im group, were more likely to let me know if they had to miss a class or needed to make alternate
arrangements. It is my belief that with very discouraged parents, this kind of follow-up may be necessary until some level of success is experienced. It is also my belief that this kind of follow-up may be necessary to maintain adequate levels of attendance for research purposes during an 8-week program.

Guided imagery is no doubt a powerful tool when used with care and planning with a parent population. Because this research is exploratory in nature, possibilities for future research are many. Research using delayed follow-up testing to determine if attitudinal changes persist or increase (Cohen & Twemlow, 1981) is an area which needs further clarification. Another area of obvious importance and relevance to the study of guided imagery with this population is the effect of increased attitudinal change and concept practice on parenting practices and child behavior. Further inquiry into the effects of using guided imagery with parents and children simultaneously also appears to be a logical direction for future research (Lupin, Baud, Baud, & Duer, 1976).
APPENDIX A

INFORMED CONSENT
Informed Consent

I, ________________________________, agree to participate in a study which involves the use of the Systematic Training for Effective Parenting (STEP) program, a widely used parent education program that has been used successfully in educational settings for several years. STEP is a multi-media, 8-week program which will meet for approximately two hours each week. The purpose of this study is to assess the differential effects of the traditional STEP program with a modified STEP program using a guided imagery technique in place of a role-play procedure that is included in the traditional program. This technique has been used successfully in various educational settings. We hope to use the information obtained from this study to modify or enhance the STEP program to better serve future participants.

As a participant, I understand that I may be placed randomly in one of two classes: a traditional STEP program or a modified STEP program, where I will provide information at the beginning and end of this study. I understand that regardless of my assigned group, I will be expected to provide personal data information and complete an attitude survey related to parenting attitudes prior to the beginning and at the completion of the eight-week research period.

I have been informed that any information obtained in this study will be recorded with a code number that will allow the researcher, Dianne Smith, to determine my identity. At the conclusion of this study, the key that relates my name with my assigned code number will be destroyed. Under this condition, I agree that any information obtained for this research may be used in any way thought best for publication or education.
I understand that there is no personal risk or discomfort directly involved with this research, and I am free to withdraw my consent and discontinue participation in this study at any time.

If I have any questions or problems that arise in connection with my participation in this study, I should contact Dianne Smith, the group leader and research project director, at (817) 491-3956.

Date ____________________  STEP Program Participant ________________________

Investigator ________________________

Witness __________________________
APPENDIX B
PARENT TRAINING PROGRAM DATA SHEET
### Parent Training Program Data Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Marital Status (Check one)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Married</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone #</th>
<th>(Home)</th>
<th>(Work)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Single</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Your Age</th>
<th>Separated/Divorced</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Years of School Completed</th>
<th>Widowed</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Occupation of Spouse</th>
</tr>
</thead>
</table>

**List your children (include sex, age, grade, regular or special education):**

- 
- 
- 

**List other children who regularly live in household (include sex, age, grade, regular or special education):**

- 
- 

**Have you attended a parenting group previously?**

- **Yes**
- **No**  
(Circle one)

**If yes, When?**

- 

**Where?**

- 

**How Long?**

- 

**Did you complete the program?**

- 

**What type and Comments**

- 
- 
-
Child care service will be available by appointment.

Please state the frequency and ages of children who will likely need the service

__________________________________________________________

__________________________________________________________

__________________________________________________________

Will the service likely improve your attendance? Yes No

Terms of Agreement

I understand that there is no charge for this class, except my sincere and sustained effort to attend all of the 8 consecutive 2-hour sessions, complete the weekly readings and homework assignments, and complete the pre and post-course survey. I also understand that I will be assigned to either of two classes which will begin the week of April 5th. If I am in need of the child care, I will contact the program director at least one day prior to my class. At the end of the program, or if I should be unable to complete the program for any reason, I agree to return the Parent's Handbook which has been loaned to me by the program director, Dianne Smith.

__________________________________________________________

Signature
APPENDIX C

SESSION AGENDAS FOR TREATMENT GROUPS
Session 1 - Chapter 1 - Understanding Children's Behavior and Misbehavior

Introduction

Traditional STEP group - activities as outlined in the Procedures Introduction section from the STEP Leader's Manual.

STEP-Im group - activities as outlined in the Procedures Introduction section from the STEP Leader's Manual with the addition of a program objective stating that the parent will "Learn to relax and realize your potential in terms of learning new techniques and becoming the kind of parent you want to be".

Distribute Books and Read Chapter

Discussion of Reading

Chart - The Goals of Misbehavior

Videocassette

Discussion of the Video

Chart

Problem Situation - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Substitutes for Problem Situation - A general introduction to guided imagery as used in the course (Richardson, 1982); a choice to participate (Wheeler, 1982); a modified Jacobson's progressive relaxation (1977) technique; guided imagery of the "Ideal child" - "Bothersome child" adapted from Wheeler (1982) (see script in Appendix E). A discussion of the guided imagery experience will follow. (STEP-Im group only).
Summary - summary of Chapter 1 ideas and learning.

Activities for the Week

Traditional STEP group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 1.

STEP-Im group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 1 plus practice of relaxation techniques and imagery of sensory perceptions including visual, auditory, cutaneous, kinesthetic, gustatory, olfactory, physiological, and affective senses to improve imaging abilities (see assignment handout instructions in Appendix D).

Reading Assignment - Read Chapter 2.

Session 2 - Chapter 2 - Understanding How Children Use Emotions to Involve Parents and The "Good" Parent

Discussion of the Activities for the Week

Relaxation/Guided Imagery Exercise - Deep breathing relaxation (Richardson, 1982); centering and learning readiness adapted from Galyean (1985) (see script in Appendix E).

Brief comments will be solicited. (STEP-Im group only).

Discussion of the Reading Assignment

Videocassette

Discussion of the Video

Chart
Problem Situation - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Substitutes for Problem Situation - Deep breathing relaxation (Richardson, 1982); open, decision-making scenario involving the "good" versus the "responsible" (see script in Appendix E). A discussion of the guided imagery experience will follow. (STEP-Im group only).

Summary - summary of Chapter 2 ideas and learning.

Activities for the Week

Traditional STEP group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 2.

STEP-Im group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 2 plus imagery practice of their home inside and out (see handout instructions in Appendix D).

Reading Assignment - Read Chapter 3.

Session 3 - Chapter 3 - Encouragement

Discussion of the Activities for the Week

Relaxation/Guided Imagery Exercise - Deep breathing relaxation (Richardson, 1982); centering and learning readiness exercise (Galyean, 1985) (see script in Appendix E). Brief comments will be solicited. (STEP-Im group only).

Discussion of the Reading Assignment

Chart

Videocassette (discussion interjected as instructed on tape).
Discussion of the Video Exercise

Role-Play - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Substitutes for Role-Play. Deep breathing relaxation (Richardson, 1982); a guided imagery scenario comparing the differential experience of receiving "encouragement" and "praise" (see script in Appendix E). A discussion of the guided imagery experience will follow. (STEP-Im group only).

Summary - summary of Chapter 3 ideas and learning.

Activities for the Week

Traditional STEP group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 3.

STEP-Im group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 3 plus imagery practice during the week of a general outcome goal for your child (see handout instructions in Appendix D).

Reading Assignment - Read Chapter 4

Session 4 - Chapter 4 - Communication: Listening

Discussion of the Activities for the Week

Relaxation/Guided Imagery Exercise - Deep breathing relaxation (Richardson, 1982); guided imagery metaphor about the importance of small changes. A brief discussion of the experience will follow (STEP-Im group only).
Discussion of the Reading Assignment

Chart

Videocassette

Discussion of the Video

Role-Play - (Traditional STEP group only).

Problem Situation - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Substitutes for Role-Play and Problem Situation -
Deep breathing relaxation (Richardson, 1982); open, decision-making scenario involving the
reflective listening technique (see script in Appendix E). A discussion of the guided imagery
experience will follow. (STEP-Im group only).

Summary - summary of Chapter 4 ideas and learning.

Activities for the week

   Traditional STEP group - A handout will be given to the participant with the
   same activities as outlined in the STEP Parent Handbook at the
   end of Chapter 4.

   STEP-Im group - activities as outlined in the STEP Parent Handbook at the end
   of Chapter 4 plus imagery practice during the week of a general
   outcome goal for you as a parent (see handout instructions in
   Appendix D).

Reading Assignment - Read Chapter 5.

Session 5 - Communication: Exploring Alternatives and Expressing Your
   Ideas and Feelings to Children

Discussion of the Activities for the Week
Relaxation/Guided Imagery Exercise - Deep breathing relaxation (Galyean, 1983); centering exercise adapted from Galyean (1983). Brief comments will be solicited. (STEP-Im group only).

Discussion of Reading Assignment

Chart

Videocassette

Discussion of the Video

Role-Play - (Traditional STEP group only).

Problem Situation - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Substitutes for Role-Play and Problem Situation - Deep breathing relaxation (Richardson, 1982); detailed guided imagery review of the communication concepts of problem ownership and I-messages versus you-messages; open decision-making scenario involving a parent problem and communication of feelings using old methods or I-messages (see script in Appendix E). A discussion of the guided imagery experience will follow. (STEP-Im group only).

Summary - summary of Chapter 5 ideas and learning.

Activities for the Week

Traditional STEP group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 5.

STEP-Im group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 5 plus imagery practice of a favorite place (see handout instructions in Appendix D).
Reading Assignment - Read Chapters 6.

Session 6 - Chapter 6 - Developing Responsibility

Discussion of the Activities for the Week

Relaxation/Guided Imagery Exercise - Deep breathing relaxation (Richardson, 1982); centering exercise (Galyean, 1983); centering for learning readiness (Galyean, 1983; see script in Appendix C). Brief comments will be solicited (STEP-Im group only).

Discussion of the Reading Assignment

Videocassette

Discussion of the Video

Exercises

Chart

Problem Situation - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Substitutes for Problem Situation - Deep breathing relaxation (Richardson, 1982); detailed guided imagery reviewing the concept and implementation of the discipline technique of logical consequences; open, decision-making scenario involving the use of old discipline techniques, the use of logical consequences, or other parenting skills in dealing with a parent problem (see script in Appendix E). A discussion of the guided imagery experience will follow. (STEP-Im group only).

Summary - summary of Chapter 6 ideas and learning.

Activities for the Week

Traditional STEP group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 6.
STEP-Im group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapter 6 plus practice of general outcome images your target child and of yourself as a competent parent. This imagery is identical to the homework and handout from Sessions III and IV (see handout and instructions in Appendix D).

Reading Assignment - Read Chapters 7 and 8.

Session 7 - Decision Making for Parents and The Family Meeting

Discussion of the Activity for the Week

Relaxation/Guided Imagery Exercise - Deep breathing relaxation (Galyean, 1983); guided imagery of your life prior to children (Galyean, 1983) (see script in Appendix E). Brief comments will be solicited. (STEP-Im group only).

Discussion of the Reading Assignment - (Chapter 7).

Videocassette (Chapter 7)

Discussion of the Video

Exercises

Chart - Selecting the Appropriate Approach

Problem Situation (Traditional STEP group only)

Discussion of the Reading Assignment (Chapter 8)

Videocassette (Chapter 8)

Discussion of the Video

Role-play (Traditional STEP group only)
Chart 8 - Essentials of Family Meetings

Problem Situation (Traditional STEP group only)
Relaxation/Guided Imagery Exercise - Substitutes for the Problem Situations and
Role-play - Deep breathing relaxation (Galyean, 1983); detailed guided imagery review of family meeting concepts; open guided imagery scenario involving a family meeting using old or newly learned or adapted concepts; "Getting Rid of Anger", and "Successful Me" guided imagery (Galyean, 1983; see script in Appendix E). A discussion of the guided imagery will follow. (STEP-Im group only).

Summary - summary of Chapter 7 and 8 ideas and learning.

Activities for the Week

Traditional STEP group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapters 7 and 8.

STEP- Im group - A handout will be given to the participants with the same activities as outlined in the STEP Parent Handbook at the end of Chapters 7 and 8 plus imagery practice of yourself as a photographer catching and photographing your child being "good" and imagery practice of life and activities prior to being a parent (handout and instructions in Appendix D).

Reading Assignment - Read Chapter 9.

Session 8 - Chapter 9 - Developing Confidence and Using Your Potential

Discussion of the Activities of the Week from Chapters 7 and 8.
Relaxation/Guided Imagery Exercise - Replaces Problem Situation at end of session - Deep breathing relaxation (Galyean, 1983); metaphorical guided imagery ego strengthening technique (Pelletier, 1983); "I am not my problems", guided imagery of ability to change and control one's problems, adapted from Galyean (1983; see script in Appendix E). Brief comments will be solicited. (STEP-Im group only).

Discussion of the Reading Assignment

Videocassette

Discussion of the Video

Exercise

Final Exercise

Chart

Problem Situation - (Traditional STEP group only).

Relaxation/Guided Imagery Exercise - Replaces Problem Situation - Deep breathing relaxation (Galyean, 1983); metaphorical guided imagery ego strengthening technique (Pelletier, 1983); "I am not my problems", guided imagery of ability to change and control one's problems, adapted from Galyean (1983; see script in Appendix E). Brief comments will be solicited. (STEP-Im group only).

Summary and Concluding the Final Session - summary of Chapter 9 ideas and learning as well as personal accounts of what participants have learned, changed, or plan to change based on their course experience.

Post Test Procedures - The PAS will be re-administered at the close of the session.
APPENDIX D

STEP AND STEP-JM ACTIVITIES FOR THE WEEK
SESSION 1 - ACTIVITIES FOR THE WEEK

Read Chapter 2 and do the activities listed at the end of Chapter 1 under Activities for the Week in your Parent's Handbook. Although you may apply this homework assignment to all of your children, try to focus on one elementary age child (your target child) for purposes of homework reporting which includes logging the number of misbehaviors that you analyze and choose an alternate response to during the week [STEP-Im only]. In addition to the activities listed at the end of Chapter 1, practice as often as possible and keep a log of the amount of time you spend during the next week on the following exercise:

Close your eyes, take a few deep breaths, letting out the tension as you exhale, and relax yourself. Then image each of the following senses:

<table>
<thead>
<tr>
<th>SENSE</th>
<th>DESCRIPTION</th>
<th>HOW TO PRACTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>Seeing the scenes with with shape and color</td>
<td>Visualize the colors in the rainbow or look at an object and then close your eyes and see it in your mind's eye.</td>
</tr>
<tr>
<td>Auditory</td>
<td>Hearing the sounds in the scene</td>
<td>Imagine the sound of a train whistle, thunder, a glass breaking, the wind in the trees.</td>
</tr>
<tr>
<td>Cutaneous</td>
<td>Sensing how something feels to the touch</td>
<td>Imagine the touch of cotton, of a pin point, or of sandpaper.</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>Seeing action or movement</td>
<td>See someone walking up stairs, a child on a swing, someone dancing.</td>
</tr>
<tr>
<td>Gustatory</td>
<td>Sensing the taste of something</td>
<td>Taste the bite into a sweet, juicy orange, or taste the bite of a sour lemon.</td>
</tr>
<tr>
<td>Olfactory</td>
<td>Sensing the smell of something</td>
<td>Smell the smoke from a campfire or bread baking in the oven.</td>
</tr>
<tr>
<td>Physiological</td>
<td>Sensing the bodily state of a situation</td>
<td>Imagine being sleepy or the feeling of having an upset stomach.</td>
</tr>
<tr>
<td>Effective</td>
<td>Feeling the emotions of a situation</td>
<td>Imagine bubbling with happiness, totally in love, or very angry.</td>
</tr>
</tbody>
</table>

Time Log: Fri. ____ Sat ____ Sun ____ Mon ____ Tues ____ Wed ____ Thurs ____
SESSION 2 - ACTIVITIES FOR THE WEEK

Read Chapter 3, and do the activities listed at the end of Chapter 2 under Activities for the Week in your Parent's Handbook. Although you may apply this homework assignment to all of your children, try to focus on one elementary age child (your target child) for purposes of homework reporting. Keep a log of the number of emotional displays you analyze, using what you have learned in Chapter 2. Also, log the number of situations in which you are trapped -- or nearly trapped-- into being the "good" parent, but take steps to avoid it's happening again. [STEP-Im only] In addition to the activities listed at the end of Chapter 2, read and do the following:

The purpose of this assignment is to more fully develop your imaging ability, so it is important that you pay close attention to sensory details, that is, what you see (colors, textures, shapes, etc.), hear, smell, taste, and feel (to the touch and internal emotions), much as you did in your homework assignment last week.

Close your eyes, take a few slow, deep breaths, letting out the tension as you exhale, and relax yourself completely. Then picture in your mind's eye your home. Walk all around the outside, noticing every detail. Then go inside and walk from room to room, examining each room and its contents. Be sure to use all your senses. Do this as thoroughly as possible several times during the next week. If you tire of going through your own home, image another place in which you are very familiar, and image it, using all of your senses. Log the time you spend practicing these images throughout the week.

Time Log:

Friday_____ Sat _____ Sun _____ Monday_____Tuesday______ Wednesday______ Thursday_____


SESSION 3 - ACTIVITIES FOR THE WEEK

Read Chapter 4, and do the activities listed at the end of Chapter 3 under Activities for the Week in your Parent's Handbook. Although you may apply this homework assignment to all of your children, try to focus on one elementary age child (your target child) for purposes of homework reporting. Look for a number of ways and keep a log of the number of times you encourage your child. Be sure that what you do is encourage rather than praise. Pay attention to what happened, how you encouraged the child, and the child's response. [STEP-Im only] In addition to the activities listed at the end of Chapter 3, read and do the following:

Close your eyes, take a few deep breaths, letting the tension go as you exhale. Relax yourself fully. Now, picture your child grown-up. Try to keep your image general, omitting details such as occupation or profession, married or single, lifestyle, etc. Image your child more in terms of respect for others, responsibility, happiness or enjoyment of life, usefulness, and contribution (but not specific contributions), and child/parent relationship. This is to be a general outcome image, one you can image often throughout your day, as you go to sleep at night, and other times you may set aside. Spend as much time and do this as many times as possible during the following week. Remember to keep your images very general, but use all your senses to experience this person. Log the time you spend practicing these images throughout your week.

Time Log:

Fri. _____  Sat. _____  Sun. _____  Mon. _____  Tues. _____  Wed. _____  Thurs. _____
SESSION 4 - ACTIVITIES FOR THE WEEK

Read Chapter 5 and do the activities listed at the end of Chapter 4 under Activities of the Week in your Parent's Handbook. Although you may apply this homework assignment to all of your children, try to focus on one elementary age child (your target child) for purposes of homework reporting. Log the number of times you practice reflective listening with your target child. [STEP-Im only] In addition to the activities listed at the end of Chapter 4, read and do the following:

Close your eyes, take several slow, deep breaths, and relax yourself fully. Now, picture yourself performing as the kind of parent you would like to be. See yourself walking, talking, interacting, and communicating with your target child in a competent way which you value and admire. Keep your images general, that is, do not spend the time deciding how to handle a specific situation or child behavior, but rather a general image of yourself moving and doing what needs to be done with ease and confidence. This is to be a general outcome image of yourself as you would like to be in the near future, an image you can picture often throughout your day, and as you go to sleep at night or during some other time you set aside. Spend as much time and do this as many times as possible during the following week. Remember to keep your images very general, but use all your senses to experience yourself as this person (how you look doing it, the look and touch of your surroundings, how you feel about yourself, etc.). Log the time you spend practicing these images throughout your week.

Time Log:

Fri. _____ Sat. _____ Sun. _____ Mon. _____ Tues. _____ Wed. _____ Thurs. _____
SESSION 5 - ACTIVITIES FOR THE WEEK

Read Chapter 6 and do the activities listed at the end of Chapter 5 under Activities for the Week in your Parent's Handbook. Although you may apply this homework assignment to all of your children, try to focus on one elementary age child (your target child) for purposes of homework reporting which includes logging the number of times you use I-messages and help your child explore alternatives. [STEP-Im only] In addition to the activities listed at the end of Chapter 5, read and do the following:

Close your eyes, take several slow, deep breaths, and relax yourself fully. Then go to a place that you love to visit: the beach, the mountains, or home with family or friends, a place where you really feel good! Be sure to notice the colors, textures, sounds, smells, and tastes, all the sensory details about the place. Be especially aware of your feelings. Spend as much time and do this as frequently as possible during the following week. If there is more than one place that is especially enjoyable to you, vary the location. Remember to use all your senses to experience yourself and your surroundings. Enjoy your visit!

Time Log:

Fri._____ Sat _____ Sun._____ Mon._______ Tues._____ Wed._______ Thurs._______
SESSION 6 - ACTIVITIES FOR THE WEEK

Read Chapters 7 and 8, and do the activities listed at the end of Chapter 6 under Activities for the Week in your Parent's Handbook. In addition to the activities listed at the end of Chapter 6, read and during the following week, practice each of the general outcome imagery exercises that follow:

[Hand out identical imagery assignments as were handed out at Session III and Session IV, that is, general outcome imagery of your target child, and general outcome imagery of yourself performing as the kind of parent you would like to be (see Session III and Session IV Activities for the Week).]
SESSION 7 - ACTIVITIES FOR THE WEEK

Read Chapter 9 and do the activities listed at the end of Chapters 7 and 8 under Activities for the Week in your Parent's Handbook. [STEP-Im only] In addition to the activities listed at the end of Chapters 7 and 8, read and do the following:

Close your eyes, take a few deep breaths, and relax yourself fully. Picture yourself as a photographer, a photographer with a really good camera, and on a mission to take many good pictures. Think back over the last week and take photographs of your target child "being good". Spend as much time, and take as many pictures as possible during the following week, including up-to-date pictures as the week progresses. Just as pictures reflect moments, your pictures will capture moments in time, not whole days, or hours, but moments of good behavior. As you take your photograph, be sure to capture all the sensory details that are characteristically your child.

In addition to your photography imagery, also enjoy the following imagery:

Close your eyes, take a few slow, deep breaths, and relax yourself fully. Now, image yourself doing something you enjoyed prior to being a parent, something that you haven't done for a long time, but something that is pleasing to you. If there is more than one thing that comes to mind, image that activity at another time. Image only one activity on an occasion, and image it fully, using as many sensory details as possible to experience it completely and enhance your enjoyment. Spend as much time as possible to fully experience the imagery, and practice these imageries as often as possible during the next week.

Time Log:
Fri. ____  Sat. ____  Sun. ____  Mon. ____  Tues. ____  Wed. ____  Thurs. ____
APPENDIX E

RELAXATION/GUIDED IMAGERY SCRIPTS
Relaxation/Guided Imagery Scripts

Session 1 - General introduction to guided imagery and relaxation (Richardson, 1982); a choice to participate (Wheeler, 1982); deep breathing relaxation techniques (Richardson, 1982); a modification of the "Bothersome child" - "Ideal child" and questions for discussion (Wheeler, 1982).

We are going to do some different kinds of things in this group to help clarify the parenting concepts we study, and to learn and understand more about ourselves and those with whom we are close. Many people have found these techniques to be helpful in focusing their attention and readying their minds for learning, increasing understanding and comprehension, and increasing their potential and a sense of well-being. The technique has been used with athletes practicing new skills, with medical patients learning about their illness and how to carry out medical instructions. It has been used with families and individuals in counseling settings to help clarify understanding of self and others and with children in educational settings to enhance learning and decision-making. At each of our meetings, there will be times when I will ask you to relax and imagine as clearly as you can the scenes I will describe and to complete the scene or story, using your mind’s eye to notice all the things around you. You will imagine the sounds you would hear, the smells you would smell, and even the feel of the things you might touch. If there are emotions that would arise from the situation, I would ask that you let yourself feel those emotions. Afterwards, you will have an opportunity to discuss the exercises and express any aspect of your experience or feelings that you wish. You may choose to participate in these relaxation and imagery exercises or you may take the time just to relax or to think about other things you have on your mind.
At this time, I would like for you to get into a comfortable position, either sitting or lying on the floor. Most people prefer lying on the floor, and most people prefer closing their eyes. Get into a comfortable position, and begin to relax yourself. [Wait until all the participants have settled in their preferred place to relax.]

As you get into a comfortable position, you begin to relax. Take a deep, cleansing breath and let it out [pause], and then take another deep breath and hold it for five seconds [pause]; let it out and feel the tenseness leave your body [pause]. As you continue to take deep breaths, concentrate on the increasing relaxation and tension relief you feel each time you exhale. Concentrate only on your breathing. (p. 25) [Pause].

Imagine that you have just returned home, and you are turning on the television and settling down in a comfortable place. As you continue to breathe, your body relaxes further [pause] and you begin to see children on the television screen doing various things in various places such as restaurants, stores, and in your neighborhood. [Pause to allow time for visualization]. Watching and observing, your focus begins to narrow... and slowly with increasing clarity you can see a child who really bothers you, [pause]. a child who really gets to you [pause]. As you notice the many details of what this child is like [pause], and what this child is doing [pause], you are becoming aware of very strong and negative feelings within [pause], noticing every detail, becoming more and more aware of what the child is doing that annoys you [pause], the emotions you are feeling [pause], and your reaction to the child. [Pause].

Just as you begin to think of turning off the television in disgust, a new sense of pleasure and relaxation comes over you as a picture of an ideal and admirable child
emerges [pause], a child you can see and hear with increasing clarity [pause]. As you observe this child slowly and carefully, you can note every detail [pause], noticing what the child is like and what they are doing, [pause], and how they behave and act [pause]. As you continue to observe the child, you become aware of your very strong and positive feelings [pause]. You can begin to sense how you would relate to this child [pause], and what you would say to this ideal child [ pause], and how you would react and go about solving an everyday problem with this child [pause]. You enjoy watching your ideal child, but you are eager to discuss your experience with the group, so you turn off the television and gradually return to the group meeting.

[Wait until all the participants have opened their eyes and have returned to the group setting.]

An open invitation is then made for members to share their experiences with the group. Wheeler suggests focusing the discussion around family values with the following questions:

1. What family values do your pictures reflect? Is your ideal child one who is behaving, quiet, clean, studious, serious, etc., and are these traits valued in your family?

2. How do the values you have become aware of relate to your own family of origin? For example, if education is valued by you, which of your parents also valued education?

3. Did any of you see opposites expressed in the two pictures? What is the value that these opposites reflect?

4. If not opposites, what common theme do your pictures have? How does this theme reflect a family value?
5. How effective do you think you have been in passing this value along to your children?

6. Could it be that your strong belief in this value gets in the way of your passing it along to your children? (p. 140).

Wheeler also suggests that by asking the participants whether they were happy with the way they would have responded to the bothersome child can lead the discussion toward learning alternative methods of parenting.

Session 2 - Exercise 1 - Deep breathing relaxation (Richardson (1982); centering and learning readiness adapted from Galyean (1985).

[Deep breathing relaxation as scripted above with the participants sitting in their chairs.]

[Pause].

Now picture a lovely, juicy apple, the most beautiful apple you've ever seen [pause]. Notice the color [pause], and if it has any other colors running through it [pause]. Be aware of the subtleties of its shape [pause], whether there are any blemishes or marks [pause], whether the skin is shiny or dull? [pause]. Now take it in your hand and feel the shape [pause], texture [pause], and firmness or softness [pause]. Draw it close to your nose. Smell the scent as the apple gets closer to your nose [pause]. Notice the feel of your mouth as you begin to smell the apple [pause], the feelings in your stomach [pause]. Now, open your mouth and take a bite right now [pause]. Be aware of its taste [pause], its juice [pause], the feel and texture of the apple in your mouth [pause]. Now, finish eating your apple.

[Pause].
As you enjoy the lingering taste of that juicy apple, be aware that today you are
going to study and learn more about yourself as a parent and becoming the parent
you want to become. Picture yourself comprehending and understanding each of the
concepts you study [pause]. Feel your pride in understanding [pause] and your
excitement in the potential that each new idea offers [pause]. Picture yourself
hearing the experiences of others with new insight and openness [pause], and gaining
new understanding and insight about yourself and your loved ones [pause]. Picture
yourself finding new ways to assess old situations [pause], selecting and
incorporating new methods which attract you and fit your style [pause]. Feel your
sense of pride in learning [pause] and confidence in making choices [pause]. Sense
a feeling of success [pause]. Keep this image of success with you throughout the
entire session and throughout the week as you try out new attitudes and parenting
techniques. Take another deep breath, and on the count of three, begin to return to
the group fully refreshed, alert, and ready to work [pause] . . . one, two, three
[Wait until the participants have opened their eyes and have returned to the group
setting.]

Exercise 2 - Deep breathing relaxation (Richardson, 1982); open, decision-making scenario
involving the "good" versus the "responsible" parent dilemma.

[Deep breathing relaxation as scripted above with the participants either sitting or
lying on the floor.]

Now, as you continue to relax, and your breathing becomes more shallow and
regular, a picture of your elementary age child in a familiar and worrisome situation
where they forget to do something... or they are slow to do something... begins to
take form [pause]. This situation has occurred many times, and you can re-create
the scene in your mind's eye very well [pause], how your child looks [pause], how your child sounds [pause], and acts [pause], and the emotions you feel each time this situation arises [pause], and the emotions you feel each time after you handle the situation in the typical way [pause]. On this occasion, however, you are considering something different [pause], a way you might have considered responding in the past or may only be considering at this moment [pause], but may fear others like teachers or neighbors, or another loved one might question [pause]. Now you reconsider this option more carefully, reassessing what this new course of action might really communicate on a deeper level to your child [pause], and what your child might learn from this new method [pause]. After considering these important aspects of your parenting choice, you now decide to try the new behavior, or to handle the situation in the usual way. Now, as you decide how you will deal with your child, you can finish the scene, attending to the many sensory details and the behavior and feelings associated with the experience, handling any questioning of your method by others with quiet resolve and confidence. [Pause]. As the scene comes to a close, you slowly return to the group setting feeling refreshed and ready to share your experience.

[Wait until all the participants have opened their eyes and have returned to the group setting.]

Session 3 - Exercise 1 - Deep breathing relaxation; centering and learning readiness adapted from Galyean (1985).

Take a few deep breaths, and begin to relax yourself. Take a deep breath, and hold it for five seconds (pause); now exhale. With each succeeding breath, feel an increasing sense of relaxation (pause). As I slowly count backwards from 10, and
you can see each number in your mind's eye, your tenseness diminishes with each diminishing number: 10 ....9 ....8 ....7 ....6 ....5 ....4 .... 3 ....2 ....1 (pause). As your body becomes more and more relaxed, the picture of a rambling country road leading through a beautiful valley begins to settle into your mind's awareness [pause]. As the sunlight reaches through the gently swaying trees, reflecting its subtle dancing patterns amongst the grasses and flowers, you begin your leisurely walk down that lovely winding road [pause]. Enjoying the day, you are sensitive to every sight along the way [pause], every small sound [pause], each smell or fragrance [pause], and the feeling of the atmosphere against your skin. [Pause]. As you walk along, you see a house on the side of the road just ahead. Noticing every detail of the house, its color [pause], the various textures of the building materials [pause], the shape and detail of the surrounding landscape [pause], and the changing perspective of size and shape as you grow nearer [pause], you realize that inside that house you might encounter a concern or fear you have about yourself not learning or getting what you want out of your efforts in this class. If you do have such a concern and you would like to change it into a more positive source of energy, go into your house and ask it to appear right now, remembering that you are totally in control of your images and have nothing to fear [pause]. When you meet this concern, ask it to tell you about itself, where and when it started and where it gets its power [pause]. Now converse with this concern and learn how it can be changed into a powerful and helpful ally, a friend who can help you learn and achieve in this class [pause]. How does this helpful friend act and what does it do to help you? [pause]. Now, see yourself, with the help of your new ally succeeding in this class [pause], noting all of your behaviors and actions which bring about your success [pause]. Now, spend a few moments noting all the feelings of this success [pause],
and on the count of three, bring these feelings with you, as you open your eyes, fully refreshed, alert, and ready to work with these feelings [pause]. One, two, three [pause]

*Exercise 2 - Deep breathing exercise*

[Deep breathing relaxation with participants either sitting or lying on the floor.]

Get into a comfortable position, and begin to relax yourself by taking a few deep breaths, holding them and letting them out, just as you did previously (pause). Take this time to count backwards for yourself from 10 to 1, seeing the numbers in your mind’s eye, and feeling an increasing sense of relaxation with each diminishing number, starting with 10 (pause). As you become more and more relaxed, an image of yourself as a child begins to emerge in your mind’s eye, wearing a remembered or favorite piece of clothing [pause], yourself in every detail [pause], the color of your hair [pause], the shape and feel of your body [pause], the sound of your voice [pause], the manner of your movement [pause] the way you behave and act with others [pause], and the feelings within [pause]. Slowly you become aware of a discouraging situation where you have tried very hard to accomplish something in particular, but it hasn’t worked out [pause]. You become aware of your disappointment and feelings [pause], feelings in your chest [pause], feelings in the pit of your stomach [pause]. You become aware of thoughts going through your mind [pause], things you may be telling yourself about what that might mean about you as a person [pause], or what others may think about you [pause]. You want to talk to someone who cares, someone who will understand, and knows you very well [pause]. As you’re feeling your most discouraged, you see a family member and decide to confide your disappointment. You tell them what has happened and wait to hear their familiar voice. Almost as quickly as you finish your story, they say,
"Well, I think you’re great; I wouldn't worry about it"! I’m really proud of you anyway [pause]. As you listen to their words, you become very aware of your feelings [pause], whether they understand you [pause], and aware of what they are really saying to you.

[Pause].

As you turn to walk away, you see another family member and decide to tell them about your disappointment. While you relay your story, you notice the familiar details of their face [pause] and their familiar manner [pause]. Just as you finish your story and listen for the oft-heard sound of their voice [pause], they remark, "But look at how far you've come by doing this [pause] and this [pause]. You may not feel you've reached your goal, but look at the progress you've made! " [pause]. As you listen to their words pointing out the specific things you've done to accomplish your goal, you become aware of your feelings [pause], whether they understand you [pause], and aware of what they are really saying to you [pause]. As you walk away, and the scene closes, you become aware of your present age (pause) and slowly return to the group setting feeling refreshed and eager to share your experience.

[Wait until all the participants have opened their eyes and have returned to the group setting.]

Session 4 - Exercise 1 - Deep breathing relaxation (Galyean, 1983); guided imagery metaphor about the importance of small changes.

Get into a comfortable position sitting in your chair, and begin to relax.

[Pause].

On the count of three take a deep breath and fill your lungs with the fresh
air around you . . . One . . . two . . . three . . . Take a deep breath, and let this feeling of lightness permeate every cell in your body . . . making you lighter and lighter . . . and brighter and brighter (pause) . . . Now exhale with a slight sigh and breathe out any tiredness or tension you may be feeling (pause). (Repeat deep breathing procedure two or more times until you sense that the students are relaxed) . . . Now gently float away from this room. [Pause.]

Now as you relax, imagine yourself in an open field or a big yard, a place where you have been before and know well [pause]. As you look around and notice the familiar surroundings [pause], you become aware that you are carrying a bow and arrow [pause], and that there is a brightly colored target with concentric circles in the distance [pause]. As you study the contrasts of the colorful circles within circles before you [pause], and feel the texture and the shape of the arrow in your hand [pause], you can hear the sounds of others about you [pause], familiar voices and sounds you have heard many times [pause]. Continuing to study the target, you remember how erratic and uncontrollable your aim seemed at first [pause], how you often released the arrow without first aiming carefully, how easily you were distracted by others talking and telling you how you should position and aim your arrow [pause], and how difficult it was to keep your focus on the target rather than listening to their talk or allowing your attention to stray toward distractions and fears [pause], fears of how you might never be able to aim your arrow with precision, and hit your target with ease and confidence [pause], fears that you might never accomplish your goal of being a good and steady archer. As you look at the bow and arrow in your hands, you begin
to feel pride in your continuing work and practice to perfect your aim and realize your goal [pause]. As you lift the bow and place the arrow in position, you are aware of a growing feeling of confidence in your approach which you continue to adapt to fit your individual style [pause]. You are finding that by adjusting your aim ever so slightly, you can achieve a dramatic difference [Pause.]

You are noticing that by moving your arrow tip just 1/4" in the right direction, you can change the results of your effort by a few feet [pause]. By adjusting your arrow tip only slightly, you can change the trajectory tenfold [pause]. As you adjust your arrow, you become aware that if your aim is not perfect the first time . . . or every time [pause], only a slight change in your aim can bring the arrow closer and closer to the center of the target each time you try[pause]; an adjustment to your aim by a fraction can allow you to see a difference in the desired direction [pause], bringing the arrow closer and closer to the center of the target [pause] and getting closer and closer to your goal of becoming a good and steady archer [pause]. You become aware that with each try your aim is becoming better and better, and that your efforts are making a visible difference [pause], and greatly influencing the realization of your goal and the success of your endeavor [pause]. As you pull back the cord of the bow this time, aiming the arrow carefully, and letting go with confidence and assurance [pause], you are aware that these same small changes through continued patience and practice to aim your arrow carefully are responsible for the exultation you feel as the arrow hits the center of the target [pause]. After taking a while to fully enjoy the success of your efforts, you decide to return to the group, feeling refreshed and ready to share your joy and take on
new challenges [pause].

[Wait until all the participants have opened their eyes and have returned to the group setting.]

**Exercise 2** - Deep breathing relaxation (Richardson, 1982), open, decision-making scenario involving reflective listening.

Get into a comfortable position, [either sitting or lying on the floor] and begin to relax [pause]. Take several deep breaths and slowly let them out, [pause] concentrating on the increasing relaxation you feel with each breath. [Pause].

As you listen to my voice, and your body continues to relax, an image of your child in every way emerges [pause]. As you see the expressions of your child's face [pause], hear the distinctive quality of your child's voice [pause], and perceive all the sensory details that are characteristically your child's [pause], you become aware that your child is expressing anger, disappointment, joy, or distress over something [pause]. Now, use the next minute, which is all the time you will need, to complete the scenario as it would typically occur, the response and behavior you would typically use, including all the details and emotions of your child's behavior, the emotions of your response to your child, and your child's response to you. [Pause.]

As you complete your scene, you become more acutely aware of the underlying meaning and feelings expressed by your child [pause], any
feelings of discomfort or pressure, or pride experienced by you [pause],
and the underlying feelings and messages you may have communicated
to your child [pause]. Reviewing the effectiveness of your communication
with your child, the message your child may have received from your
response [pause], and your intended message [pause], you decide to
either recreate the scene and respond to your child as you did previously, or
if you didn't before, try the technique of reflective listening to communicate
your respect and understanding [pause]. Remembering that communication
is both verbal and nonverbal, utilizing posture and tone of voice, use the
next minute, which is all the time you will need, to recreate the scene [pause].
On the count of three, take a deep breath and slowly return to the group,
eager to share your experience with others. One... two... three.
[Wait until all the participants have opened their eyes and have returned to
the group setting.].

Session 5 - Exercise 1 - Deep breathing relaxation (Galyean, 1983), adaptation of centering
exercise (Galyean, 1983).

Get into a comfortable position either sitting or lying down and begin to
relax.

[Pause.]
Close your eyes and take a slow... deep breath... hold it... now exhale
any tiredness, tension or distractions you might be feeling at this time
(pause 10 sec.)... Take another deep breath, only this time exhale with a
slight sigh and let your body feel yourself getting rid of annoying
thoughts, distractions and/or feelings of tiredness (pause 10 sec.)...
(Repeat deep breathing two or three more times until you sense the group is quite relaxed.) (p. 36)

[Pause.]

Now imagine you are lying in the sun, a very warm [pause], constant [pause], and soothing sun [pause]. As the rays of the sun slowly penetrate your skin, and you can feel the warmth of its gaze deep within you, your body becomes even more relaxed [pause], fully assured that you are protected, and the sun is posing no threat to your skin. Lying there, feeling your body against the surface on which you lie [pause], enjoying the warmth which envelopes you [pause], and listening carefully to any sounds around you [pause], you are slowly becoming aware of where you are at this time, a park?, at the beach?, at a lake or river?, in your yard?, on a deck? [pause]. Suddenly you become aware of the smell of something truly delicious, a favorite food that you love to eat [pause], and the direction and place from which it comes [pause]. If it is not possible for you to go over and enjoy some of this food, you may content yourself with its wonderful aroma, or, if it is possible to partake, you may do so at this time [pause]. You can either enjoy every bite or savor the delicious smells and note how your body responds to these favorite smells [pause].

Now let the images of this food and the delicious aroma fade, and concentrate once again on the feel of the sun's friendly warmth and penetrating gaze upon your body [pause], increasing your relaxation and making you feel deeply content [pause], and knowing that you can keep this pleasant feeling with you throughout the remainder of your day [pause], or recreate it for yourself at any time [pause], as you prepare yourself
to return to us here in this room, fully alert, refreshed, and ready to work
[pause]. On the count of three, take a deep breath, hold it [pause], and
slowly exhale as you open your eyes and stretch your body [pause]. One... two... three.
[Wait until all the participants have opened their eyes and returned to the
group setting.]

**Exercise 2** - Deep breathing relaxation (Richardson, 1982); detailed guided imagery review of
the communication concept of problem ownership and I-messages versus you messages; open,
decision-making scenario involving a parent problem and communication of feelings using old
methods or I-messages.

Get into a comfortable position, and begin to relax [pause]. Take several deep
breaths and slowly let them out [pause] concentrating on the increasing relaxation
you feel with each breath [pause]. Take a deep breath and hold it [pause]. Now,
exhale, paying close attention to the release and relaxation of any tensions or
tightness in your body [pause]. Now, take another deep breath, hold it [pause].
Now exhale, becoming more and more relaxed.

[Pause.]

Now as you continue to relax, you begin to consider the communication concepts
studied in this class, and the choices of using reflective listening, exploring
alternatives, and I-messages [pause]. You may be recalling that to determine which
technique to use, you must first determine problem ownership [pause], and that to
determine problem ownership, you can ask who is experiencing the difficulty?
[pause] or whose purposes are not being met? [pause], and this will determine which
communication technique is called for in a given situation [pause]. As you grow
more comfortable and confident with your ability to decide problem ownership, you
continue to review the various communication skills. You may be able to see in your mind's eye the words written about these concepts on the pages of your book, or you may be seeing the practice of these concepts as you saw them on the video, or hearing the discussion of these concepts when you or other group members talked about them. As you review the specifics of these skills, you are recalling that reflective listening is used when the problem belongs to someone else, and that exploring alternatives is also used after listening reflectively when the problem belongs to someone else, and that these techniques help build relationships by showing your understanding and respect, and trust that the other person can solve their own problem. You may also begin to recall that I-messages are used when the problem belongs to you, and that I-messages communicate mutual respect, respect for yourself by acknowledging that your feelings are important, and respect for others by trusting that others can handle and care about your feelings. You realize that this technique is also helpful at building relationships by giving the other person opportunities to hear and respond to your feelings, and giving yourself opportunities to express and solve your problem. Continuing to review these techniques, you may be recalling that you-messages break down communication and solution by laying blame and offering criticism, forcing others to tune out your problem and defend their behavior, or leading others to fulfill your beliefs about them and their value, or to seek power and revenge, whereas I-messages open up communication by specifically focusing on you and your problem, not the other person and their erring behavior. As you review the concept of I-messages, you may remember that to construct an I-message, you first describe the behavior which is interfering with you
in a calm and non-judgmental way [pause]. Then, you state your feeling about the consequences the behavior produces for you [pause], and why [pause]. Or, stated simply, "when you do this" [pause], "I feel this way" [pause], "because this happens to me" [pause]. As you become more and more comfortable with the manner and intent of I-messages, you realize that it is not necessary to state your message in a rigid, formula-like manner, but to simply show respect for the other person and yourself by making your communication as clear, as calm, and as concise as possible [pause], including a description of the behavior [pause], the feelings you have about the behavior [pause], and why that is a problem for you [pause]. Feeling confidence with your understanding and learning of this technique, you decide to create a scenario in your mind's eye communicating with your child in the usual way about a problem you have. . . or, to use an I-message [pause]. In the beginning of your scenario, feel the anger, disappointment, or frustration this situation elicits in you [pause]. Then, during the next minute, which is all the time you will need, complete your scenario. [Pause.] As your scene comes to an end, on the count of three, you return to the group setting, feeling refreshed, relaxed, and fully alert and ready to share your experience. One. . . two. . . three. . . [Wait until the participants have opened their eyes and returned to the group setting.]

Session 6 - Exercise 1 - Deep breathing relaxation and centering exercise for learning readiness (Galyean, 1983).

[Instruct participants to start relaxing while sitting in their chairs.]

[Deep breathing as scripted above at the beginning of Session V.]

[Pause].
Find a wonderful road and place yourself on this road (pause)... The day is beautiful and there is much sun... A soft breeze is blowing though the leaves...

Enjoy the beauty of the day (pause)... Continue walking down your road until you find a rose garden... There are hundreds of roses in this garden (pause)... Look around until you find one special rose (pause)... You will know this rose because it will stand out among the others (pause)... Examine your rose... look at it carefully... Notice the color... the texture... Feel the stem... the delicate petals... the thorns (pause)... Smell your rose... Take a deep breath and allow the scent to fill your lungs... to fill every cell in your body (pause)... Silently... within your own mind... tell your rose how beautiful it is (pause)... Now give your rose a voice and let it say something nice to you (pause)... Thank your rose for being there for you and prepare yourself to return to us here in the room... fully alert... refreshed... and ready to work with the imagery... On the count of three... (p. 94)

*Exercise 2* - Deep breathing relaxation (Richardson, 1982); detailed guided imagery reviewing the concept and implementation of the discipline technique of logical consequences; a decision-making scenario where participants choose between their usual discipline techniques, the technique of logical consequences, or other newly learned parenting skills.

[Deep breathing as scripted in Session V - Exercise 2 sitting or lying on the floor.]

Now, as you continue to relax more and more, you begin to review in your mind's eye the concept of logical consequences and how it differs from reward and punishment [pause]. You are remembering that reward and punishment tends to make parents responsible for children's behavior [pause], preventing children from making their own decisions and internalizing rules about their own behavior [pause], promoting the idea that acceptable behavior is expected only in the presence of...
authority figures [pause], and inviting resistance by forcing compliance [pause]; while logical consequences hold children responsible for their behavior [pause], allowing children to make their own decisions and determine the appropriate course of action [pause], permitting children to learn from the impersonal natural or social order, rather than being forced [pause]. As you continue to relax and review the concept further, you specifically remember that punishment expresses the power of personal authority [pause], whereas logical consequences acknowledge mutual rights and mutual respect [pause]; you remember that punishment is arbitrary or barely related to the logic of the situation [pause], whereas logical consequences is related to the misbehavior [pause]; you recall that punishment is personalized and implies moral judgment [pause], while logical consequences are impersonal and implies no element of personal moral judgment [pause]. As your body continues to relax further, and your mind continues to focus clearly, you also remember that punishment is concerned with past behavior [pause], whereas logical consequences are concerned with present and future behavior [pause], that punishment threatens the "offender" with disrespect or loss of love, and puts them down [pause], while logical consequences delivered with friendliness and calmness convey mutual respect and good-will [pause], that punishment demands obedience [pause], while logical consequences permit choice [pause]. You are also realizing subtle differences: that anger, warnings, threats, and reminders can turn a consequence into punishment [pause], that a parent can communicate or send messages of their hostility nonverbally [pause], that timing is extremely important, and that it's best to delay action, except in emergency situations, until you can approach the problem calmly [pause], that remaining matter-of-fact and viewing misbehavior objectively and separating it from the doer, rather than viewing it as a personal affront, can make
you much more effective [pause]. You recall that logical consequences is viewed as a teaching method, where the patient teacher expects and accepts mistakes [pause], and does not view these mistakes as violations of parental authority [pause]. As you become more comfortable with the details of this concept, you remember that logical consequences are more appropriate for attention-getting behavior than for goals of power or revenge [pause] since logical consequences are often viewed by these children as an arbitrary punishment, intensifying the conflict [pause]; the relationship must be improved through respect and encouragement [pause], and action postponed until the relationship is improved [pause]. Reviewing these concepts, you additionally become aware of a few basic principles regarding the use of logical consequences: a) understand your child's goals, behavior, and emotions [pause]; be both firm and kind [pause], don't try to be a "good" parent, but a responsible one [pause]; become more consistent in your actions [pause]; separate the deed from the doer [pause]; encourage independence [pause]; avoid pity [pause]; refuse to become over concerned about what other people think [pause]; recognize who owns the problem [pause]; talk less, act more [pause]; refuse to fight or give in [pause]; and let all the children share responsibility to decrease rivalry among children [pause].

Now, having reviewed all the aspects of this concept and all the steps and principles of this technique, you recognize that the method may take time to be effective [pause] because you are changing from your typical responses, and your child may choose to test the limits often and expect you to return to the old way [pause]. As you consider these difficulties and drawbacks in implementing logical consequences with your child now, or in the future once your relationship has improved [pause], you decide to either try the technique by creating a scenario where you use logical
consequences with your child or your usual method [pause]. In the next minute, which is all the time you will need, create and complete a scenario of a typical problem which you own, using your usual or this newly learned technique.

[Pause.]

As your scenario comes to completion, on the count of three you return to the group setting, feeling fresh, alert, and ready to share your experience [pause]. One . . two . . three . .

[Wait until all the participants have opened their eyes and have returned to the group setting.]

Session 7 - Exercise 1 - Deep breathing relaxation (Galyean, 1983), "Getting Rid of Anger" imagery (Galyean, 1983).

Close your eyes . . . relax . . . and focus your attention on your breath [pause]. . . As you gently breathe in . . . and out . . . in . . . and out . . . let go of any tensions or concerns you may have . . . just breathe them away (p. 85).

[Pause.]

Now, as each breath lessens your tenseness, and your body becomes more and more relaxed, travel inside your body until you come to the place where you hold or store your anger [pause]. . . Now picture a beautiful sun in the sky . . . It is friendly, warm, but not burning [pause]. . . Ask the sun to gently descend from the sky and let its light fall upon you . . . filling every cell in your body with its warmth . . . Feel that light penetrating your skin . . . muscles . . . even your bones [pause]. . . Now tell the light to travel to the spot where you hold your anger [pause]. . . Let the light mix with all the colors . . . images . . . feelings . . . sounds . . . smells of anger that you feel
there (pause). . . Now ask the sunlight to soak up the anger and to change it into soft, mellow, warm light for you (pause). . . Notice how this feels. . . just letting the angry energy slowly change into beautiful warm sun energy. Do this until you feel all the anger is gone (pause). . . Now take a deep breath. . . feel how light your body is at this time, how relaxed, how peaceful you feel (pause) . . . You can use this light to change anger or any other negative feelings any time you wish (pause). (p. 224). Now on the count of three, return to the group feeling, peaceful, refreshed, and alert, and ready to work with new resolve and insight [pause]. One... two... three.

[Wait until all participants have opened their eyes and returned to the group setting.]

Exercise 2 - Substitutes for Problem Situations and Role-play - Deep breathing relaxation (Galyean, 1983); open guided imagery scenario involving a family meeting using newly learned concepts or old ways of dealing with family issues; and imagery of life before parenthood.

[Deep breathing as scripted in Session IV - Exercise 2.]

As you continue to relax, you may begin to recall that the family meeting provides many opportunities [pause], opportunities for being heard and expressing positive feelings about one another [pause], giving encouragement [pause], opportunities for sharing chores fairly among members [pause], for expressing concerns, feelings, and complaints [pause], opportunities for settling conflicts and dealing with recurring issues [pause], and for planning family recreation [pause]. You are also remembering that there are certain guidelines based on democratic notions where parents refrain from forcing their agendas or ideas and leadership on children [pause], and that all family members have an opportunity to bring up matters
important to them [pause], and offer solutions to family issues [pause], and that care must be taken so that meetings are pleasant experiences rather than gripe sessions.

You also begin to realize that the other communication skills you have recently learned can help with meeting leadership and follow-ship [pause], skills such as reflective listening [pause], I-messages [pause], and logical consequences set up by and agreed to by the group [pause]. As you review the essentials of a family meeting [pause], and that one of the common mistakes in family meetings is waiting until every member of the family agrees to attend [pause], you decide either to set up a family meeting or to handle family issues in the typical way [pause]. During the next minute, which is all the time you will need, create a scenario of your family participating in a family meeting, using your newly learned democratic style and communication skills, or dealing with a family issue in the usual way [pause].

Now, as your scenario comes to a close, and you continue to relax, an image of yourself as an individual begins to emerge [pause], an image of you and all of the aspects of your life at this time [pause]. Be aware of your family life [pause], your friends [pause], your home [pause], any activities that you do for enjoyment [pause], your clothes and appearance [pause], and how you feel about yourself [pause].

Now, move back in time, a couple of years before you had children [pause], and be aware of your family life [pause], your friends [pause], your home [pause], your clothes and appearance [pause]. Pay special attention to how you are feeling about yourself [pause]. Are there special things you like to do by yourself? [pause], special places you like to go by yourself? [pause], or with another adult? [pause], are there certain activities you especially enjoy? [pause]. In the next minute, which is all the time you will need, create and complete a scene of yourself participating in one of these activities, using your increasing abilities of vividness to sense the sights,
sounds, smells and feel of the things around you. [Pause.] As your scene comes to a close, you become aware that now as you continue to increase your skills and confidence as a parent, and no longer have to be the "good" parent, just a responsible one who trusts other family members to become capable and responsible, your life is becoming or can become much simpler [pause], much like it was before [pause]. Now, bringing with you these insights and realizations, you begin to prepare yourself to return to this room and the group setting [pause]. On the count of three, slowly open your eyes, ready to work with these feelings [pause]. One... two... three...

[Wait until all the participants have opened their eyes and returned to the group setting.]

Session 8 - Replaces Problem Situation at end of session - Deep breathing relaxation (Galyean, 1983), metaphorical guided imagery ego strengthening technique (Pelletier, 1979); "I am not my problems" guided imagery involving ability to change and control one's problems, adapted from Galyean (1983).

[Use the relaxation exercise as scripted in Session VII - Exercise 1 while participants sit in their chairs.]

[Pause.]

Now, as you continue to breathe and relax, you are realizing that you are in a very beautiful place, a beautiful field of grass, and trees, and flowers [pause]. Because you are feeling so relaxed and happy, you decide to walk along and enjoy the lovely day and nature's beauty [pause]. Walking along and feeling the gentle breeze [pause], you may occasionally pause to observe the tall blades of waving grass [pause], the various colors and textures of the landscape [pause], and the sweet
fragrances in the air [pause]. Just ahead to your right or left stands a tall strong tree, a tree so fascinating that you walk around admiring it [pause], and hearing the birds singing in the tree [pause]. The sound of the birds with the sound of the wind through the leaves and the wind through your clothing is so relaxing. See the tree, how fascinating, how tall and strong [pause]. Examine it carefully, noticing the outcropping of the roots reaching out across the soil and disappearing into the ground. You can imagine the roots spreading deep into the ground to firmly anchor the tree. You can see how tall the trunk is with its twists and turns [pause], the scars and rough edges that are the result of the tree's struggle to survive against the wind, the hail, and the storms of life [pause], and knowing that the struggle to survive made it stronger [pause]. You can see how high and far the branches reach into the sky [pause], with the branches offering shelter to the birds and shade to man [pause]. Knowing that the leaves obtain energy from the sun through the process of photosynthesis, you can imagine the energy going through the layers of the tree to the roots which obtain nitrates from the soil [pause]. You can imagine the whole being, exchanging within itself, to give life, strength and health to the whole being [pause]. As you admire that tree, you can imagine yourself like that tree, tall and strong, firmly rooted and grounded, made stronger by the strife of life [pause]. Like that tree's branches, you reach out for help and energy; offering shelter and help to others [pause]. Within you are the various systems to make you stronger and healthier. As you think deeply, you are realizing that you are more than that tree [pause]. You can think, and move [pause]; you can learn and change [pause]; you can create and make decisions [pause]. You can love, and be loved; you can do so very many things that tree cannot do [pause]. Sense your power, your strength,
your many abilities [pause]. Be thankful for you. Contemplate your strength and all that you are, as you continue to relax more fully.

[Pause.]

As you relax even more deeply, you continue to enjoy the beauty of the day and to explore the field in which you are walking [pause]. On your left or right in the distance, you can begin to see a tiny building. Feeling curiosity about the small building, you continue walking until you reach the front where there is a small door [pause]. Deciding to open it, you reach for the doorknob and slowly turn it [pause]. As you open the door of the tiny building, you can see a large mirror on the wall directly in front of you [pause], and as you observe your image, you can see all your problems, all the concerns that often weight you down, floating around you [pause]. Notice how they float around you, free, and independent of you [pause]. Notice how centered and strong you are [pause], like that tree, yet more! [pause]. You are able to make decisions about the handling of these problems[pause], you are able to express your concerns and emotions about these problems, but maintain control over your reaction [pause]. You may have problems, but you are not your problems [pause]. Saying that to yourself over and over: "I have problems but I am not my problems" [pause], and again, "I have problems but I am not my problems, and my problems are not me" [pause]. As you continue to observe these problems floating around about you, you reach out and take each one in your hand, holding it [pause], examining it [pause], while feeling the power you have to handle it [pause], to change it (pause). Now, during the next minute, which is all the time you will need, take each problem in your hand, changing it into something helpful for you [pause], new forms [pause], energies [pause], floating around you [pause]. [Pause.] You have problems, but your problems are not you [pause]; they can be changed into new
forms and energies with your own creative power [pause]. You become aware that this ability is always within you [pause], ready to serve you when you call upon it [pause]. Now, prepare yourself to return to this room and the group setting [pause]. On the count of three, slowly open your eyes, refreshed, alert, aware of all of your creative abilities, and ready to work with the imagery. One . . . two . . . three . . . [Wait until all the participants have opened their eyes and have returned to the group setting.]
APPENDIX F

PROGRAM ADVERTISING
Free Parent Training Program Begins April 1st

The well-known and widely used Systematic Training for Effective Parenting (STEP) program which teaches effective communication skills and discipline techniques is being offered to the parents of [community] elementary-age children free of charge in conjunction with parent training research. The program uses a multi-media approach which utilizes video-tapes, group discussion, and homework exercises to enhance learning and understanding of self and others. The program will be conducted at the Trinity Presbyterian Church on Morris Road (across from Marcus H.S.) during April and May. Participants will learn why their child misbehaves and how to change that behavior by changing their response to it. They will learn how to build their child's confidence and create an environment that fosters self-reliance and responsibility. Since this program builds communication skills, it has the potential for improving relationships and understanding from others as well.

Volunteers will attend an information-gathering session where they will provide demographic information and fill out a short survey. They will then be assigned to one of three groups, two of which will meet weekly for eight two-hour sessions beginning the next week, and one which will provide information at the beginning and end of the eight week period, but will not participate in the parenting program until the fall. If you are interested in participating in the program and research, or wish to obtain additional information, contact Dianne Smith who is the program director and a Doctoral student at the University of North Texas. Call Toll Free (817) 491-3956.
PARENTING - IT'S A HARD JOB - NEED HELP?

Become a confident parent! Learn how to reduce conflict and raise a responsible child! Parents of elementary age children may participate in the Systematic Training for Effective Parenting (STEP) program free of charge in conjunction with a parenting research project. Call Dianne Smith at (817) 491-3956 for details!
PARENTING - IT'S A HARD JOB! - NEED HELP?

REDUCE CONFLICT!

RAISE A RESPONSIBLE CHILD!

SYSTEMATIC TRAINING FOR EFFECTIVE PARENTING

FREE 8-WEEK PROGRAM IN CONJUNCTION WITH RESEARCH

CALL TOLL FREE (817) 491-3956 FOR DETAILS NOW!
PARENTING

IT'S A HARD JOB

NEED HELP?

BECOME A CONFIDENT PARENT!

REDUCE CONFLICT!

RAISE A RESPONSIBLE CHILD!

SYSTEMATIC TRAINING FOR EFFECTIVE PARENTING

FREE OF CHARGE! If you are the parent of an elementary-age child, you may participate in an 8-week Systematic Training for Effective Parenting (STEP) program in conjunction with parenting training research. Parents will meet with other parents in a friendly and comfortable atmosphere to discuss and solve mutual problems and study new methods for dealing with family issues. Learn effective communication skills and discipline techniques! Meetings will be held during April and May. Come for the fun, the support, and the good ideas! Call Dianne Smith Toll Free at (817) 491-3956 for details!
Free of Charge - The Systematic Training for Effective Parenting (STEP) program is being offered in conjunction with independent research. Meet with other parents in a relaxed and supportive setting to discuss and solve mutual parenting problems and enhance family life. Fun, support, and ideas!

Call (817) 491-3956 (Toll Free) for details!
<table>
<thead>
<tr>
<th>Session &amp; Date</th>
<th>Attending (Circle One)</th>
<th>Read Assigned Chapter (Circle One)</th>
<th># Times Practiced Learned Concept with Target Child</th>
<th># Total Practiced Imagery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>Yes No Yes No</td>
<td></td>
<td>---------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Session 2</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 3</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 4</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 5</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 6</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 7</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session 8</td>
<td>Yes No Yes No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX H

COURSE EVALUATION SHEETS
COURSE EVALUATION
[STEP GROUP]

Please rate the various teaching techniques in terms of helpfulness to your insight, learning and understanding on a scale of 1 - 10 (1 being lowest).

Chapter Reading

Review of Activity for the Week (Classroom Discussion)

Videocassette and Discussion

Discussion of Chapters in Groups

Role-Play

Activity for the Week (Practice with Child)

Please answer the following questions by circling Yes or No.

Would you recommend STEP training to a friend? Yes No

Do you plan to continue with the support group which is forming? Yes No

Additional Remarks:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
COURSE EVALUATION
[STEP-IM GROUP]

Please rate the various teaching techniques in terms of helpfulness to your insight, learning and understanding on a scale of 1 - 10 (1 being lowest).

- Chapter Reading  
- Review of Activity for the Week (Classroom Discussion)  
- Videocassette and Discussion  
- Discussion of Chapters in Groups  
- Classroom Imagery Work  
- Activity for the Week (Practice with Child)  
- Activity for the Week (Imagery Homework)  

Please answer the following questions by circling Yes or No.

- Would you recommend STEP training to a friend? Yes  No  
- Will you use relaxation and imagery techniques in the future? Yes  No  
  If yes, please explain for what purpose. ________________

Do you plan to continue with the support group which is forming? Yes  No

Please comment on the use of imagery techniques with parent groups. Give any suggestions you might have for its use with this population, and comment on its usefulness (if any) to you.

________________________________________________________________________

________________________________________________________________________

Additional Remarks: ______________________________________________________
APPENDIX I

UNADJUSTED AND ADJUSTED CHANGE SCORE MEANS
### Unadjusted and Adjusted Change Score Means
(with and without outlier data)

#### Unadjusted and Adjusted Change Score Means with Outlier data Included

<table>
<thead>
<tr>
<th>PAS Scale</th>
<th>Unadjusted Change Score Means</th>
<th>Adjusted Change Score Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted Change Score Means</td>
<td>Adjusted Change Score Means</td>
</tr>
<tr>
<td></td>
<td>STEP Group</td>
<td>STEP-Im Group</td>
</tr>
<tr>
<td>Confidence</td>
<td>3.143</td>
<td>5.500</td>
</tr>
<tr>
<td>Causation</td>
<td>3.000</td>
<td>4.071</td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.429</td>
<td>1.500</td>
</tr>
<tr>
<td>Understanding</td>
<td>3.286</td>
<td>4.214</td>
</tr>
<tr>
<td>Trust</td>
<td>5.857</td>
<td>6.735</td>
</tr>
<tr>
<td>Total Score</td>
<td>15.714</td>
<td>24.000</td>
</tr>
</tbody>
</table>

#### Unadjusted and Adjusted Means with Outlier Data Removed

<table>
<thead>
<tr>
<th>PAS Scale</th>
<th>Unadjusted Change Score Means</th>
<th>Adjusted Change Score Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted Change Score Means</td>
<td>Adjusted Change Score Means</td>
</tr>
<tr>
<td></td>
<td>STEP Group</td>
<td>STEP-Im Group</td>
</tr>
<tr>
<td>Confidence</td>
<td>3.833</td>
<td>5.500</td>
</tr>
<tr>
<td>Causation</td>
<td>3.417</td>
<td>4.071</td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.750</td>
<td>1.500</td>
</tr>
<tr>
<td>Understanding</td>
<td>2.333</td>
<td>4.214</td>
</tr>
<tr>
<td>Trust</td>
<td>6.500</td>
<td>8.714</td>
</tr>
<tr>
<td>Total Score</td>
<td>16.833</td>
<td>24.000</td>
</tr>
</tbody>
</table>
APPENDIX J

APPLICATION OF RANDOMIZATION TECHNIQUE FOR
TESTING SIMILARITY OF COVARIANCE MATRICES
Application of Randomization Technique for Testing Similarity of Treatment Group Covariance Matrices

To test the similarity of the covariance matrices of the two treatment groups, guidelines for the Approximate Randomization Technique were used (Noreen, 1989). The steps used in the application follow:

\[
\text{test statistic} = \Sigma_i \Sigma_j \text{absolute value (cov}_{1ij} - \text{cov}_{2ij}) / 25
\]

where \(\text{cov}_{1ij} - \text{cov}_{2ij}\) is the covariance of G1 (STEP group) minus the covariance of G2 (STEP-Im group) between the \(i\)th scale and the \(j\)th scale.

Steps

1. Calculate the value of the actual test statistic observed in this study using the equation above.
2. Shuffle observations and calculate \(\text{cov}_{1ij}\) and \(\text{cov}_{2ij}\)
3. Calculate new test statistic of shuffled samples and compare to the actuals observed in this study.
4. Increment counter when statistic meets or exceeds actual statistic observed in this study.
5. Repeat steps 2 through 4 1,000 times.
6. Determine the probability that the observed test statistic could be due to randomness by the number of times the counter is incremented in 1,000 trials.
APPENDIX K

GENERAL METHODOLOGY OF THE APPROXIMATE RANDOMIZATION TECHNIQUE (ART) AND APPLICATION TO THE STUDY
General Methodology of The Approximate Randomization Technique (ART) and Application to The Study

General Steps of Application

- To prepare data for which computer randomization can be compared, calculate the deltas between the mean change scores for the two treatment groups on each scale of the PAS. Findings indicated that the STEP-Im group was consistently higher than the traditional STEP group.

- Randomly assign individual participant change scores obtained from the combined treatment groups to two hypothetical groups.

- Calculate the same mean and delta statistics for the two hypothetical randomly assigned groups as was done for the original study groups above.

- Compare the deltas from the randomly assigned data to the original study data.

- Randomly assign, calculate statistics, and make comparisons many times (100 - 10,000 times).

  - If there is no significant influence in the treatment method, we should frequently get deltas from the two hypothetical groups which are as large as those obtained between the two treatment groups in the original study.

  - If there is a significant influence in the treatment method, the deltas observed for the original study should be unusually large.

ART Methodology

To explain the use of the ART in this study, the ART equivalent of the conventional parametric ANOVA/MANOVA will be presented prior to the presentation of the ART equivalent of the conventional ANCOVA/MANCOVA. This progression of explanation makes the adjustment to remove the influence of the covariates more understandable.
ART Equivalent of ANOVA/MANOVA

- For comparison, differences between the change scores on the 5 PAS scales for the two treatment groups from this study were obtained (as shown in the first step previously).

- Multiple iterations (10,000) were performed in the following way:
  - On each scale, individual participant change scores from our two treatment groups were randomly assigned to two hypothetical groups.
  - Mean change scores for the 5 scales were determined for the two assigned groups.
  - The following statistical questions were asked, and a counter was maintained for each statistic, incrementing the counter when the calculation was true.
    - Is the difference on each of the scales between the randomly assigned groups greater than the difference between the two treatment groups observed in this study.
    - Are the deltas for randomly assigned scales greater than the observed deltas simultaneously?
    - Are all scales + or negative?
  - The resulting ART statistics indicate the null, or the probability that differences observed between the two treatment groups were the result of random chance. They can be compared to the ANOVA levels of significance. The results reported below include outlier data.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Po (ART) (two-tailed probabilities)</th>
<th>Po (ANOVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.289</td>
<td>0.261</td>
</tr>
<tr>
<td>2</td>
<td>0.484</td>
<td>0.456</td>
</tr>
<tr>
<td>3</td>
<td>0.557</td>
<td>0.559</td>
</tr>
<tr>
<td>4</td>
<td>0.549</td>
<td>0.578</td>
</tr>
<tr>
<td>5</td>
<td>0.201</td>
<td>0.176</td>
</tr>
<tr>
<td>Composite Score</td>
<td>0.217</td>
<td>0.217</td>
</tr>
<tr>
<td>Joint Probability/MANOVA</td>
<td>0.029</td>
<td>0.869 *</td>
</tr>
</tbody>
</table>
* extreme disparity indicates multivariate can not detect differences.

The joint probability found with the ART of differences as great as was actually observed between the two treatment groups in this study was 0.029. Since a direction of change is not assumed in this calculation (one-tailed type calculation), that is, one specific group > another group, the probability that the STEP-Im group did not demonstrate significantly greater change scores than the traditional STEP group is 1/2 or 0.015.

With the outliers removed, the following results were obtained

<table>
<thead>
<tr>
<th>Scale</th>
<th>Po (ART)</th>
<th>Po (ANOVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.316</td>
<td>0.332</td>
</tr>
<tr>
<td>2</td>
<td>0.051</td>
<td>0.636</td>
</tr>
<tr>
<td>3</td>
<td>0.073</td>
<td>0.688</td>
</tr>
<tr>
<td>4</td>
<td>0.220</td>
<td>0.233</td>
</tr>
<tr>
<td>5</td>
<td>0.272</td>
<td>0.260</td>
</tr>
<tr>
<td>Composite Score</td>
<td>0.209</td>
<td>0.218</td>
</tr>
<tr>
<td>Joint Probability/MANCOVA</td>
<td>0.018</td>
<td>N/A *</td>
</tr>
</tbody>
</table>

* did not run MANOVA

The results indicate a good match on individual scales between the ANOVA results and the ART results. MANOVA was not computed due to it's inappropriateness. The ART showed a probability of 0.009 (one-tailed) that the STEP-Im treatment did not influence change scores.

ART Equivalent of ANCOVA/MANCOVA

To remove the influence of the pre-test covariate, the following methodology was followed:

- A regression was run on change scores using all of the participant observations of the two treatment groups.

\[ S1D = a + C \times (S1A) \]

Scale 1 Delta = Constant + Coefficient (pre-test score for Scale 1)
Individual participant scores on each scale were adjusted. For example, the pre-test score for participant #1 on the first scale was adjusted in the following way:

\[ Adj1 = S1D - \text{Coefficient} \times (S1A - S1A) \]

That is,

Adjusted score for Part. #1 = Delta obtained between two groups on Scale 1, minus Scale Coefficient (Part. Pretest Score - Mean of Scale Pretest).

Where, S1A is the mean of the unadjusted pre-test scores for the combined treatment groups as indicated below:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean Pre-test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.536 = S1A</td>
</tr>
<tr>
<td>2</td>
<td>14.679 = S2A</td>
</tr>
<tr>
<td>3</td>
<td>13.536 = S3A</td>
</tr>
<tr>
<td>4</td>
<td>17.464 = S4A</td>
</tr>
<tr>
<td>5</td>
<td>10.500 = S5A</td>
</tr>
</tbody>
</table>
To prepare data for which the ART comparisons can be made, the means and standard deviations for the adjusted scores on the 5 scales were computed.

While the mean adjusted scores do not vary significantly from raw scores, the standard deviations do, indicating that removal of the influence of the pre-test covariate has removed some randomness from the sample.

The ART process of randomly assigning the adjusted change scores to 2 groups and comparing the deltas with those observed in this study was performed as explained previously and results presented below (with ANCOVA null comparisons):

<table>
<thead>
<tr>
<th>Scale</th>
<th>Po (ART)</th>
<th>Po (ANCOVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(two-tailed comparisons)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.249</td>
<td>0.256</td>
</tr>
<tr>
<td>2</td>
<td>0.248</td>
<td>0.234</td>
</tr>
<tr>
<td>3</td>
<td>0.402</td>
<td>0.418</td>
</tr>
<tr>
<td>4</td>
<td>0.280</td>
<td>0.279</td>
</tr>
<tr>
<td>5</td>
<td>0.164</td>
<td>0.170</td>
</tr>
<tr>
<td>Composite Score</td>
<td>0.113</td>
<td>0.103</td>
</tr>
<tr>
<td>Joint Probability/MANCOVA</td>
<td>0.0097</td>
<td>0.920</td>
</tr>
</tbody>
</table>

Again, the ART results match the ANCOVA results closely, and the MANCOVA results do not.

The ART joint probability that such group differences as were found between the 2 groups in this study might occur by chance was 0.0097. The probability in one direction (one tailed) that the STEP-Im had no positive influence on change scores was 0.0049.

Results reported above are for adjusted scores, with outlier data included. The analysis was repeated with the outlier data removed which required a new regression analysis for each of the 5 scales. Below are the new coefficients and adjusted factors based on the removal of the outlier data.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Coefficient</th>
<th>Pre-test means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.367</td>
<td>1.423</td>
</tr>
<tr>
<td>2</td>
<td>-0.215</td>
<td>14.885</td>
</tr>
<tr>
<td>3</td>
<td>-0.313</td>
<td>13.692</td>
</tr>
<tr>
<td>4</td>
<td>-0.167</td>
<td>17.885</td>
</tr>
<tr>
<td>5</td>
<td>-0.336</td>
<td>10.462</td>
</tr>
</tbody>
</table>
Using the new coefficients and pre-test means, scores were adjusted and computed for all the observations (minus the outliers) on the 5 PAS scales.

The means and standard deviations for the adjusted scores were then computed by group on the 5 scales, and the deltas obtained.

The ART analysis was run as previously described and the following results obtained which were compared to the ANCOVA results:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Po (ART)</th>
<th>Po (ANCOVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(two tailed comparisons)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.388</td>
<td>0.387</td>
</tr>
<tr>
<td>2</td>
<td>0.455</td>
<td>0.462</td>
</tr>
<tr>
<td>3</td>
<td>0.590</td>
<td>0.603</td>
</tr>
<tr>
<td>4</td>
<td>0.165</td>
<td>0.163</td>
</tr>
<tr>
<td>5</td>
<td>0.289</td>
<td>0.288</td>
</tr>
<tr>
<td>Composite Score</td>
<td>0.187</td>
<td>0.186</td>
</tr>
<tr>
<td>Joint Probability/MANCOVA</td>
<td>0.019</td>
<td>0.871</td>
</tr>
</tbody>
</table>

The ART Joint Probability, when outlier data was removed, that such group differences as was obtained in this study would occur by chance was 0.019. Therefore, the probability that the STEP-Im treatment had no positive and significant influence on attitude change beyond that of the STEP treatment was 0.010. Again, the multivariate test does not detect differences.

Below is a summary of the ART joint probability findings that the STEP-Im treatment had no advantage over the traditional STEP treatment on changing parent attitudes, using both raw scores (equivalent of the ANOVA/MANOVA parametric analysis), and scores adjusted to remove the influence of the covariate (equivalent of the ANCOVA/MANCOVA parametric analysis), with outlier data, and with outlier data removed:

<table>
<thead>
<tr>
<th>Po (ART)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw scores (with outlier data included)</td>
</tr>
<tr>
<td>Raw scores (with outlier data removed)</td>
</tr>
<tr>
<td>Adjusted scores (with outlier data included)</td>
</tr>
<tr>
<td>Adjusted scores (with outlier data removed)</td>
</tr>
</tbody>
</table>
REFERENCES


