MARRIAGE ENRICHMENT: THE USE OF COMPUTERS TO TEACH COMMUNICATION SKILLS

DISSERTATION

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In this study, a computerized marriage enrichment program that gave couples instruction on communication skills and problem-solving was developed and tested. Couples completed the marriage enrichment courseware together on a computer.

Forty couples from a metropolitan area in North Texas volunteered to complete the marriage enrichment courseware. Ten couples were randomly assigned to each of the following four groups: an experimental group that received the pre-test followed by treatment and a post-test, a control-wait group that completed pre- and post-tests, an experimental group that received treatment followed by a post-test, and a post-test only control-wait group. Three hypotheses were generated predicting that experimental subjects would significantly increase their marital communication skills following the treatment and that wives in the pre-test and experimental groups would achieve higher marital communication scores than would husbands. The dependent variable was the score on the Marital Communication Inventory (Bienvenu, 1970).
Analyses of variance did not reveal any differences between husbands, wives, and couples at the pre- or post-tests. A three way analysis of variance revealed a significant main effect for treatment (p < .04), but no interaction effects were found. In related findings, a t-test on the post-test minus pre-test difference for wife's scores was significant beyond the .005 level of confidence. Pearson product-moment correlations between the amount of time spent on the marriage enrichment courseware and post-test scores suggested that couples who spent more time completing the program were more likely to achieve higher scores. A regression analysis confirmed the significance of time spent on increased post-test scores (p < .0085). Based on these findings, it seems appropriate to conclude that computerized marriage enrichment courseware is a promising approach for couples who spend at least two hours completing the material.
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Introduction

The disenchantment, disengagement, and decay that can affect contemporary marriages is posited by research and commentary (Lederer & Jackson, 1968; Bassoff, 1985). To address these problems, the marriage enrichment movement attempts to foster growth and intimacy within the context of a committed marital relationship (L'Abate & Sloan, 1984). Marriage enrichment emphasizes the positive aspects of the marital relationship and represents a shift from the remedial emphasis of marital therapy to a preventive growth emphasis (Davis, Hovestadt, Piercy & Cochran, 1982).

From a survey of the content of Marriage Enrichment programs, Otto (1976) developed a definition of marriage enrichment as programs designed for couples who perceive their marriages to be healthy and who wish to make their marriages even more mutually satisfying. The programs are not designed for people whose marriages are in crisis, or those seeking counseling for marital problems (Otto, 1976). The ultimate goal of most marriage enrichment programs is to attain or maintain an intentional companionship marriage where a commitment to a lasting marital dyad enables each partner to experience fulfillment (Hof & Miller, 1981).

While counseling in general and marriage enrichment in particular are still relatively untouched by technology,
computers offer counselors the opportunity to expand client services (Walz, 1984). Computers can offer information systems and educational programs to help clients obtain information, make decisions, and learn.

One major criticism of marriage encounter programs has been their emphasis on the feeling aspects of communication rather than concrete communication skills (Lester & Doherty, 1983). A Computer-assisted instruction program is one method that can be used to teach basic communication and problem-solving skills to couples without immersing them in an atmosphere that pressures them to express feelings. A computer-assisted marriage enrichment program, therefore, appears to be a helpful adjunct tool for counselors to teach more effective communication skills to couples. Such a tool allows couples to focus on the interpersonal aspects of marriage enrichment without ignoring the educational aspect.

Statement of the Problem

Marriage enrichment has been shown to be an effective way to improve marital quality by teaching communication and problem-solving skills (Otto, 1976). Although it seems logical to anticipate that an interactive computer program would help couples learn communication and problem-solving skills to enhance marriage, no studies involving such an approach were found. This study, therefore, focused on
the development and examination of a computer-assisted counseling (CAC) program as a tool for marriage enrichment. A CAC program designed to teach couples communication skills was developed and pilot tested in this research.

Related Literature

Literature related to this study is presented in five sections: 1) History of Marriage Enrichment, 2) Approaches to Marriage Enrichment, 3) Justification for Marriage Enrichment, 4) Research, and 5) Using Computers in Marriage Enrichment.

History of Marriage Enrichment

Marriage enrichment programs are not limited to the United States, but this country appears to be the leader in their use. The increasing recognition by couples that their marriages can be enriched and the momentum of the human potential movement make enrichment experiences not only acceptable to, but a trend among, married couples from upper or middle income brackets (Otto, 1976).

Marriage enrichment appears to be a response to the increasing complexity of modern society. Marriage once was an institution for the physical survival of two people and their offspring. More recently it involves the struggle for psychological and emotional survival (Lederer & Jackson, 1968). The myth of naturalism expresses the
belief that people who marry automatically know how to live and relate effectively together, and that they can continue to have effective interpersonal relationships with little concerted effort on their parts (Hof & Miller, 1981). Many couples suffer severe disappointment within a few months after marriage due to false assumptions about how good marriage is going to be (Lederer & Jackson, 1968).

Marriage enrichment, therefore, is based on the premise that all persons and all relationships function at a fraction of their potential and that every couple has the possibility for personal growth as well as the potential for growth in the relationship leading to a more fulfilling life together. Otto (1976) noted that Western marriages seem to be in particular need of help because the fast pace of Western culture does not encourage couples to take care of marital relationships. To a considerable extent the growth of the marriage enrichment movement appears to be a response to this need.

In 1983, 2,446,000 couples in the United States married and 1,158,000 couples divorced, making the national divorce rate 47% (U.S. Bureau of the Census, 1987). Religious institutions, alarmed at the high divorce rate, initiated group efforts to enhance marital relationships through marriage enrichment (Hammonds & Worthington, 1985). The first marital enrichment programs in the United States
were developed by the Maces who began to conduct weekend retreats for the Quakers in 1961 (L'Abate & McHenry, 1983).

The largest movements in the field of marriage enrichment are church related. Fourteen denominations are included in the worldwide marriage encounter such as Roman Catholic, Jewish, and Presbyterian (Doherty, 1985). The largest of these, the Roman Catholic Marriage Encounter, began in Spain in 1962 under Father Calvo's leadership. The program reached the United States in 1967 and over 400,000 couples have participated in Marriage Enrichment (Silverman & Urbaniak, 1983). Although some programs do not have religious affiliations, such as the Couple's Communication Program, Marriage Effectiveness Training, and the Relationship Enhancement Programs (Hof & Miller, 1981), Otto (1976) stated that couples could best be reached through an enabling agency inspiring trust. From his perspective, the church is in the best position to help couples take advantage of opportunities to make a good marriage even better.

Although marriage enrichment programs have been loosely developed and monitored, some progress has been made in setting leadership and training standards for marriage enrichment programs. In 1973, the Association of Couples for Marriage Enrichment (ACME) was founded by David and Vera Mace. Under its auspices, CAMEO (Council of Affiliated Marriage Enrichment Organizations) concerned
itself with the development of leadership and training standards for Marriage Enrichment (Hof & Miller, 1981). The Maces are considered the leaders in the marriage enrichment movement since their program content is well-developed. The marriage enrichment movement appears to have peaked between 1974 and 1981, with most research being conducted during that period. Since that time, little empirical research has been conducted and no books on the subject have been located, which makes much of the literature appear dated. Religious institutions continue to promote marriage enrichment, with little published material available.

Approaches to Marriage Enrichment

Even within churches, marriage enrichment programs represent a wide spectrum of approaches. At one end of the continuum is the Roman Catholic Marriage Encounter which has maximum structure with group interaction restricted to feedback. At the other end of the continuum are programs utilizing mostly encounter sessions (Otto, 1976). The format for marriage enrichment programs also varies from the intensive weekend without any follow-up to multiweek programs which offer less continuity, but provide time for homework between sessions and the practice of new skills (Hof & Miller, 1981). Program leadership is usually provided by trained nonprofessional married couples working
alone or with a professional, married couples at least one of whom is a trained professional, an individual, or an unmarried male-female leadership team trained in the particular model they are using (Hof & Miller, 1981).

While ACME and CAMEO concern themselves with marriage enrichment standards and training, a number of specific approaches have been developed. Marriage enrichment programs include Green's Christian Marriage Enrichment Retreat, Bosco's Marriage Encounter, the Otto's The More Joy in your Marriage Program, the Schmidt's Marriage Renewal Retreats, Hayward's Positive Partners, Sherwood & Scherer's Preventive Maintenance, and the Mace's ACME Movement. Other marriage enrichment programs include Kligfield's Jewish Marriage Encounter, Zinker and Leon's Gestalt Perspective, the Caper's Transactional Analysis and Nunally, Miller, and Wackman's Minnesota Couples Communication Program (Otto, 1976).

Although the content of marriage enrichment programs varies greatly, most programs emphasize effective communication (L'Abate & Sloane, 1984; Mace & Mace, 1977; Otto, 1976). Marriage enrichment programs have an educational focus, which teaches specific skills, or a preventive emphasis that is experiential (Hof & Miller, 1981). In this study the educational approach was used.

Since marital enrichment can be viewed as a life-long process, a variety of marriage enrichment programs and
tools are needed for different points in the life-span. Hof & Miller (1981) argued that marriage enrichment should not be limited to weekend programs or time-limited marital growth groups. According to Otto (1976), areas that merit further attention in the marriage enrichment field include marriage enrichment courses and follow-up programs.

Tape cassettes and video tapes have also been used as tools for marriage enrichment. Cassette programs developed between 1973 and 1976 include Edward's Creative Problem Solving in the Family, Leville's Making Marriage Work, and Callahan & Kennedy's Making Marriage Work (Otto, 1976). Anderson (1984) evaluated a home-based marriage enrichment program using audio cassettes developed by Lawlis (1980). This study used a structured format more similar to approaches that have been proven to be successful, except that the computer was the medium through which information on communication skills was presented.

The length of marriage enrichment programs ranges from 3 to 36 hours, with the average being 14 (Anderson, 1984). Otto's (1976) survey of marriage enrichment programs in the U.S. and Canada revealed that 93% of the programs were conducted in a group setting, 90% were conducted by a husband-wife or male-female team, and 85% used overnight facilities. Use of group discussion and structured experiences are popular (Otto, 1976).
Demographic data indicate that the average couple in the marriage enrichment sample is comparable to the general population. The average marriage enrichment couple husband is slightly under 40 years of age and the wife is one year younger. Husbands have an average of two years of college and the wives have none. Family income ranges from $20,000 to $40,000 and the average number of children is three (Silverman & Urbaniak, 1983).

Approaches vary as to which couples should participate in marriage enrichment programs. While marriage enrichment can be helpful, it can also be harmful when distressed couples participate. Distressed couples are encouraged not to use marriage enrichment as a substitute for marital therapy, but most unstructured approaches provide no vehicle to screen out such couples (Silverman & Urbaniak, 1983; L'Abate & McHenry, 1983). Other potentially destructive effects of marriage enrichment include attempts to present a single definitive goal for all married couples, such a "marriage in God's plan" which implies that married couples in conflict are not following God's plan. In some programs little information on content is available even to potential participants, and a pressure to dialogue as a couple may lead to ritualistic dependency on this technique (Doherty, McCabe, & Meyer, 1978). Marriage enrichment participants may also experience increased
frustration over awareness of unmet needs when follow-up is not a part of the program (Lester & Doherty, 1983).

Some approaches to marriage enrichment appear to originate from an unclear theoretical base. Many programs are a smorgasbord of unrelated topics with a poorly developed theoretical framework (Hof & Miller, 1981).

The approach used in this study is highly structured so that couples are not left unattended for long periods of time to discuss painful issues. Information presented is confined to communication skills and problem-solving techniques. No statements are made implying that couples who do not agree with the program are failing.

Justification for Marriage Enrichment

Marriage enrichment is targeted at couples who believe their marriage could be better and those experiencing mild dissatisfaction with their marriage. Enrichment programs may be more cost effective than marital therapy because they encourage couples to focus on basic relationship issues through a structured approach (Guerney, 1977). While it can be argued that marital therapy accomplishes these goals, marriage enrichment can reach these goals for a fraction of the cost. In addition, marriage enrichment does not have the negative stigma of marital therapy, so more couples may be willing to seek help. While problems
are a normal part of marriage, many people are ashamed of this facet of life together (Otto, 1976).

Another reason for marriage enrichment activities is the changing roles and relationships of men and women. Marriage is still an important institution that must adjust to evolving social and economic conditions (Lederer & Jackson, 1968). Today's couples may enter marriage with unrealistic expectations, demanding instant gratification and individual rights. The impact of the human potential and the women's liberation movements have also contributed to confusion about marriage (Hof & Miller, 1981). Sex research has created more open communication about human sexuality, an area that needs to be addressed in marriage enrichment programs (Otto, 1976).

Research

To examine the efficacy of Marriage Encounter, Milholland and Avery (1982) conducted a study of 40 couples in a southwestern community who participated in the Church of Christ version of the marriage encounter weekend. Seventeen couples participated in the experimental group and 20 couples were assigned to a waiting list control group. Subjects in both groups completed the Self-Disclosure Questionnaire, the Interpersonal Relationship Scale-Trust, and the Interpersonal Relationship Scale-Marital Satisfaction. These instruments were completed the
week before the experimental group participated in the weekend marriage encounter, one week after, and 5 weeks after the encounter weekend. Data analysis consisted of an analysis of covariance of couples' scores using the pre-test as the covariate and the post test as the dependent variable. The experimental group significantly increased its level of trust and marital satisfaction following the marriage encounter weekend. Because there was no significant difference in self-disclosure scores, the authors concluded that the goal of dialogue in marriage encounter does not focus on better dialogue, but on problem-solving skills resulting from dialogue.

Results of some studies have indicated that couples who participated in marriage enrichment were less satisfied with their marriages than non-participants and more satisfied than those couples who requested marriage counseling. Powell and Wampler (1982) cited an unpublished study by Schaefer and Olson (1978) that compared the pre-treatment mean scores on the Personal Assessment of Intimacy in Relationship of 118 couples who attended marriage encounter weekends. Scores for a control group of 30 couples who volunteered to complete questionnaires were matched on demographic variables and marital satisfaction. Fifteen out of 20 marital satisfaction scores compared indicated the spouses in the control group who did not attend marriage enrichment were
more satisfied with their marriages than couples who volunteered for marriage enrichment.

Based on Powell and Wampler's conclusion that couples who volunteer for marriage enrichment consistently have lower marital satisfaction than volunteer control couples, Hammonds and Worthington (1985) examined the marital satisfaction of 16 volunteer undergraduate psychology students and their spouses. Using a treatment group that attended a brief marriage enrichment group session and a control group that completed pre- and post-tests without receiving treatment, participants completed the Dyadic Adjustment Scale, the Personal Assessment of Intimacy in Relationship and the Primary Communication Inventory. Members of the enrichment group raised their level of marital satisfaction to equal that found among members of the control group at post-treatment and at follow-up. Further, members of the treatment group continued to increase their verbal communication, finally resulting in a higher mean for the treatment group at follow-up.

Davis, Hovestadt, Piercy, and Cochran (1982) compared a weekend marriage enrichment program and a 5-week program, using 17 married couples from a Church of Christ church as subjects. Couples were randomly assigned to two groups. Nine couples participated in the weekend marriage enrichment program and eight couples attended the 5-week marriage enrichment program designed to teach communication
and enhance marital strengths. Researchers used the Dyadic Adjustment Scale, the Marital Communication Inventory, the Fundamental Interpersonal Relations Orientation-Behavior test, and the Marriage Enrichment Attitude Questionnaire to measure the strength of the marital dyad. One-way analyses of covariance were employed on the mean scores obtained for each instrument to determine significant differences between groups. Couples in the 5-week group had superior scores to couples in the weekend group on three out of four significant mean differences found in the study. Results implied that the 5-week group showed more indications of improved marital adjustment than those in the weekend group. The authors speculated that the higher scores of the 5-week group could be related to the longer time the group had to discuss and implement program materials and to complete assignments. Regardless of group, wives showed more positive changes than husbands. Overall, both programs appeared to be beneficial in improving the couples' marital adjustment over a short-term (60 day) and follow-up (120 day) period (Davis et al, 1982).

Russell, Bagorozzi, Atilano, and Morris (1984) studied two approaches to Marriage Enrichment, the Minnesota Couples Communication Program and Structured Behavioral Exchange Training. They randomly assigned 29 couples to a marriage enrichment treatment (20 couples) or control (9 couples) status. Ten couples participated in the Minnesota
Couples Communication Program and 10 couples participated in the Structured Behavioral Exchange Training. Both programs were associated with positive change in marital satisfaction. Neither treatment was found to be superior to the other. Husbands showed a greater immediate impact than did wives on self-report measures of communication content, while wives demonstrated a greater increase than did husbands on communication style (Russell et al, 1984).

A retrospective study was conducted by Lester and Doherty (1983) to determine how couples felt about their marriage encounter experience an average of 4 years after completing the program. Participants were 129 couples randomly selected from those attending a marriage encounter weekend in Eastern Iowa over a 10 year period. Of those surveyed, 80% reported a totally positive experience.

In order to understand the problems associated with marriage encounter, Doherty and Walker (1982) solicited and analyzed 13 detailed case reports about Marriage Encounter casualties from 7 marital therapists. Professionals responding to notices in two newsletters completed questionnaires describing couples' backgrounds, expectations, and reactions to marriage encounter. The authors concluded that marriage encounter weekends can lead to marital or family deterioration for couples who have not experienced the couple-centered expressions of feelings which can initiate increased marital conflict, avoidance of
problem solving, or marital enmeshment at the expense of children. The most dangerous aspect of the marriage encounter experience appeared to be the induction of intense couple-centered communication leading to emotional overload in some couples. Participants were pressured to use a technique called dialogue which only 2 of the 13 couples found effective. Dialogue opened up extremely painful topics, and there was no follow-up to assist the couples with the post-encounter resolution of conflicts resulting from the dialogue (Doherty & Walker, 1982).

Doherty, Lester and Leigh (1986) conducted a qualitative follow-up study on couples who had the most positive or most negative reactions from Lester and Doherty's (1983) sample of Marriage Encounter participants. From Lester and Doherty's (1983) sample of 129 couples from Eastern Iowa, the authors selected 25 couples who reported the most positive reactions and 25 couples who reported the most negative reactions to marriage encounter. Using trained assistants to conduct structured interviews at the couples' homes, researchers asked about the best and worst features of the weekend and how they affected their marriages. Interviews were tape-recorded, transcribed and content-analyzed separately by two of the three authors with an 85% inter-rater agreement. The majority of the couples fell into the "somewhat positive" category (17 couples) and the "neutral" category (17 couples), with
seven couples in the "highly positive" group, and nine couples in the "negative" group. Researchers concluded that about one in eight couples were strongly affected by Marriage Encounter, with one-half of the couples helped and one-half of the couples harmed. The authors recommended that fewer topics be covered in more depth to allow couples to complete discussion and to reduce intensity. They also recommended that more emphasis be placed on problem-solving, rather than emotional expression without problem-solving (Doherty, Lester & Leigh, 1986).

Anderson (1984) evaluated a home-based marriage enrichment program using audio-cassettes developed by Lawlis (1980) and found no difference between 12 experimental couples and 12 control couples on measures of communication and marital adjustment. He concluded that the program may have failed because it differed from successful marriage enrichment programs in terms of leadership, program length, and the setting in which the program took place.

Cleaver (1987) conducted research on a videotape marital communication program. Twenty-two couples participated in the study. Twelve couples were randomly assigned to an experimental group that received an 8 hour videotape communication program and 12 control couples received the same training presented by facilitators. Each
couple was videotaped for 10 minutes prior to the training, immediately after, and two months later. Videotapes of the couples were analyzed by three raters using a scale developed by the author based on Carkhuff (1972) and Rademeyer (1974). Participants in both control and experimental groups showed increased ability to utilize the skills taught in the training program, with the experimental groups showing greater improvement. The experimental group also maintained a significant difference at follow-up (Cleaver, 1987).

Using Computers in Marriage Enrichment

A paradox about a society rich in technology and information is that a wealth of knowledge produces uncertainty. American society has become both more developed and more uncertain (Gelatt, 1984). The high tech/high touch principle, the concept that technology can free people such as counselors from tedious chores and enable them to provide more individualized service, symbolizes the need for a balance between our physical and spiritual reality (Naisbitt, 1982). People may improve their quality of life by appropriate use of computers.

One promising approach to the use of computers is computer-assisted counseling (CAC), which is to counseling what computer-assisted instruction is to teaching. CAC is an interactive counseling technique where computers present
information, elicit and monitor responses, and present further information tailored to client needs (Walz, 1984).

Acceptance of computers as tools in counseling does not seem to be a concern. In a study conducted at the University of Illinois at Urbana-Champaign, 54% of the students using the Plato DCS personal counseling program did not think the system was too impersonal. Forty percent of the subjects felt more at ease and more independent on the computer than if they saw a counselor (Wagman & Kerber, 1980). In an article on training uses of computers, Phillips (1983) noted that initial concerns about the acceptance of the computer as a viable tool in counseling were unwarranted and should be replaced by speculation about how computers could be employed in other facets of the counseling profession.

Several barriers to the development of the computer as a tool for counseling have been encountered. For example, early research proceeded directly without attention to problems of match between computer logic and counseling theory. Researchers began developing computer-based counseling with the most complex forms of therapy rather than the simplest. Finally, affective, rather than cognitive approaches were chosen for use with computers (Wagman, 1980).

While computers still have to overcome obstacles, such as the natural language barrier encountered in artificial
intelligence, they offer potential to future users. These advantages include the flexibility of their branching capacity (Slack & Slack, 1974) and their ability to simulate conversation. Harris (1974) also noted that as technology becomes increasingly sophisticated, audio and visual presentations will make computers more attractive to users. The Plato DCS (Dilemma Counseling System) is an interactive cognitive counseling approach in which communication logic matches the computer's logic. The Plato DCS links 1200 graphical display terminals to a mainframe computer. Terminals at various colleges, universities, and community and business organizations in the United States and Canada enable Plato to serve thousands of clients (Wagman, 1980).

Wagman and Kerber (1980) used the Plato DCS program with 48 students at the University of Illinois at Urbana-Champaign to solve life-choice problems. Students showed significantly greater improvement in their ability to solve psychological dilemmas than students in a no-contact control group. The majority of the students who used Plato DCS agreed they learned the dilemma counseling method well enough to independently apply the technique to a personal problem. In an earlier study using the Plato DCS system, Wagman (1980) found that 64% of the students in the study believed that Plato DCS and a professional counselor could be used simultaneously to solve a personal
problem. From their studies, Wagman and Kerber (1980) concluded that cognitive, rather than affective counseling approaches are most appropriate for computer application.

If counselors are to be both user friendly and user useful to clients, they must learn how to assess client needs and assist them in the use of information (Gelatt, 1984). The computer has the potential to significantly affect the role of the counselor, but it is only a potential (Walz, 1984).

Summary

Marriage enrichment is an accepted and effective means of improving marital quality. Approaches to marriage enrichment vary widely with most emphasizing communication. Audio tape and video programs have been tested, although a computer-assisted counseling approach to marriage enrichment has not been reported in the literature.

Although several beneficial approaches to marriage enrichment, including 5-week programs, weekend programs, structured educational approaches and videotape programs have been used, some have been found to be more effective than others. A 5-week program was found to be superior to a weekend program because participants had more time for homework, and a videotape communication program was found superior to a live presentation of the same material because information presented on videotape appears to make
a more lasting impression. Therefore, the format of the marriage enrichment approach is an important factor in determining the success or failure of the program. Although a weekend marriage enrichment program may be enjoyable for participants, greater change can be accomplished through a weekly structured sessions or by using such a program as a follow-up to a weekend program.

Couples who attend marriage enrichment programs have generally been found to be less satisfied with their marriages. Consequently, marriage enrichment programs must offer couples information on ways to improve specific aspects of their marriage. The most popular topic area chosen for marriage enrichment programs is communication.

Overall, wives have improved communication style and husbands have shown improvement in communication content as a result of participation in marriage enrichment. Wives showed more positive changes than husbands in overall skills regardless of the marriage enrichment approach used.

Definition of Terms

The following definitions apply to this study:

Communication skills: Communication skills refer to the ways in which couples exchange thoughts, feelings, and messages. Communication skills are taught in this study by providing couples with information on listening skills,
identification of feelings, attending behavior, seeking clarification, restatement, and problem-solving approaches.

**Courseware:** Courseware is the software developed for a specific course of study (i.e. marital enrichment). Courseware implies that units of knowledge are presented in specific order. In this study the courseware presents units on communication and problem-solving.

**Instructional design:** Instructional design is a systematic approach to the dissemination of information through computer courseware. In this study, instructional design is the methodology through which the information on communication and problem-solving is presented to couples.

**Marriage enrichment:** Marriage enrichment fosters individual growth and intimacy within the context of a committed relationship (L'Abate & Sloan, 1984). For this study, marriage enrichment is the interactive computer courseware designed by the researcher to teach couples communication and problem solving skills.

**Micro-computers:** A micro-computer refers to the hardware in a computer system including a monitor, a keyboard for input, disk drives for storage and the central processing unit. Hardware required for this study consists of one IBM compatible personal computer.

**Program tracking:** Program tracking is the procedure developed for this study that allows the computer to record each couple's use of the courseware. Through tracking, the
courseware records the number of modules examined by each couple as well as the amount of time spent on the program.

**Software:** Software is the written program that directs the computer's activity. In this study, the software is the actual text developed for this research based on Brainerd's (1976) marriage communication training program through which communication and problem-solving skills are taught.

**Group A:** Group A was the experimental group that received pre- and post-tests and completed the program.

**Group B:** Group B was the control-wait group that received pre- and post-tests followed by the program.

**Group C:** Group C was the post-test only experimental group that completed the program.

**Group D:** Group D was the post-test only control group that completed the program after data collection.

**Hypotheses**

For this study the following hypotheses were tested:

1) For the pre-test group, wives will achieve significantly higher scores on the Marital Communication Inventory than husbands at the pre-test.

2) In Groups A and C (experimental groups), wives will achieve significantly higher scores on the Marital Communication Inventory than husbands at the post-test.
3) Groups A and C (experimental subjects) will achieve significantly higher scores on the Marital Communication Inventory than will Groups B and D (control subjects) for husband's scores, wife's scores, and couple's scores.

Procedures

Subjects

Forty-three married couples (86 individuals) from four protestant churches in a metropolitan area in North Texas volunteered to participate in the study. One couple withdrew due to surgery and two couples withdrew because they did not have time to complete the program. The results were calculated using 40 couples (N=80).

Couples in the study had been married an average of 9.9 years, with a range of 1 to 37 years. Ten partners (12.5%) indicated they had been divorced previously. Twenty-eight couples had an average of two children, with no more than four children. Two couples were expecting their first child and ten couples had no children.

Couples completed the socio-economic section of the Marital Communication Inventory at the post-test, which obtained information and assigned numerical values to source of income, occupation, and educational attainment based on a study by McGuire & White (1955). The resulting scores placed one couple (2.5%) in the upper class, 34 couples (85%) in the upper middle class, four couples (10%)
in the lower middle class, and one couple (2.5%) in the upper lower class. No couples fell into the lower class.

The average age of the males in the study was 35.4, with a range of 23 to 59. Females ranged from 23 to 56 years of age, with an average of 33.1. Of the men, 83% had at least a bachelor's degree, with 38.1% holding master's degrees, and 7.1% holding doctorates. The majority (88.1%) of the women in the study had at least some college, with 40.5% holding bachelor's degrees, and 30.9% holding master's degrees. When asked to indicate religious preference, 91.3% of the subjects indicated they were Protestant, 2.5% were Catholic, 2.5% were Greek Orthodox, 1.2% were Bahai, and 2.5% had no religious preference.

**Computer Courseware**

The computer-assisted instruction courseware was designed by a graduate student in Computer Science with the assistance of the researcher. Courseware diskettes were distributed to couples who completed them together at home on an IBM compatible computer. A computer was supplied for couples who did not have access to a computer. To complete the courseware, couples read information screens together, discussed answers, and jointly answered question screens.

The material in the courseware was based on Brainerd's *Basic Marriage Communication Training* (1976). The programmed text was selected for this study for
several reasons, the primary one being that other studies (Russell, Bagorozzie, Atilano, & Morris, 1984; Cleaver, 1987) found that communication training improved couples' communication skills. The question and answer format of the material in Brainerd's text also made it adaptable for use in a computer-assisted instructional program. A sample of the first few computer screens of the courseware appears in Appendix A. Although this material has been presented in the form of a programmed text, it has not been presented through a computer program. The only change in the material was the way it was presented (see Appendix B). The courseware initially introduced basic information, asked questions to assess comprehension, and moved to other modules as couples demonstrated mastery of each area. After the presentation of basic information, the program allowed couples to select subsequent modules from a menu. The courseware required couples to repeat any module in which they did not answer at least 70% of the questions correctly before allowing them to continue.

Instrumentation

The Marital Communication Inventory (MCI) (Bienvenu, 1970) was selected to measure communication because it has been widely used to evaluate the communication component of marriage enrichment programs, as reported by participants (Schumm et al, 1983). The MCI is a 46 item inventory with
forms for males and females. Respondents describe aspects of their marriage through four frequency categories: usually, sometimes, seldom and never. Scores range from 0 to 138, with higher scores indicating better communication. The mean MCI score for a sample of 322 married couples was 105.45, with the mean for wives being 106.08 and the mean for husbands being 104.80 (Bienvenu, 1978).

The MCI was developed through a review of the literature on marital communication, through a study of existing instruments designed to measure interaction, and from Bienvenu's clinical experience. Bienvenu's (1978) pilot study of 172 married couples, used an earlier 48 item version of the MCI. Of the 46 items selected to remain in the present version of the MCI, 45 questions discriminated (at the .01 level of confidence using the chi-square test) between the upper and lower quartiles of the experimental group. The last question of the 46 chosen for the instrument retained discriminants at the .05 level of confidence (Bienvenu, 1978).

To determine the validity of the MCI, Bienvenu (1978) studied two groups. The 23 participants in the first group were receiving marital counseling. The second group of 23 subjects was comparable to the first in terms of age, years of marriage, and education but they were without apparent marital problems. Using the Mann-Whitney U test, Bienvenu
found a significant difference in marital communication in favor of the group with no apparent problems.

Bienvenu (1970) conducted a reliability study of the MCI using the Spearman-Brown correlational formula. With 40 participants, the split-half correlation coefficient was .94. More recent studies have confirmed the high internal consistency reliability of the MCI, with a Chronbach's coefficient alpha of .95 (Schumm, Anderson, Race, Morris, Griffin, McCutchen, & Benigas, 1983). A reliability study conducted by Bienvenu (1978) used the Spearman-Brown correlational formula with 60 respondents, resulting in a split-half correlation coefficient of .93.

Collection of Data

Permission to conduct the marriage enrichment course was obtained verbally from the minister in charge of adult education at four churches. Senior pastors served as contacts in two churches and associate ministers served as contacts in two churches. Subjects were recruited in three host churches by placing a printed announcement describing the marriage enrichment course in the church newsletter or bulletin (see Appendix C) and by making verbal announcements in church services (see Appendix D). In the fourth church, an announcement was made about the program in a large adult Sunday school class. Forty-three couples volunteered by contacting the church office or by
enrolling in their Sunday school class. All couples were contacted by telephone by the researcher to secure verbal agreement to participate in the study. Couples signed consent forms (see Appendix E) at the orientation meeting.

Subjects were randomly assigned into 4 groups of 10 couples each. Assignment to each of the groups was made in the order in which couples signed up for the marriage enrichment program at each church participating in the study. Therefore, the first couple was assigned to Group A, the second couple was assigned to Group B, the third couple was assigned to Group C and the fourth couple was assigned to Group D, until all couples were assigned to groups. All participants from one church were assigned at a time in order to maintain randomization. To avoid the interaction effects of external variables, churches hosting the program were asked not to plan discussions on marriage enrichment until the completion of data collection.

All couples were required to attend two meetings for the marriage enrichment program. These sessions were scheduled two weeks apart in each church that participated in the study. During the first meeting instruction was given on how to operate the computer and how to use the software. Specific topics in the marriage enrichment program were not discussed, although general information about the purpose of marriage enrichment was covered. An outline of the orientation program appears in Appendix F.
Couples completed the courseware together at home on an IBM compatible micro-computer. The program gave feedback to couples concerning their percentage of correct responses. This information was stored by the program for the researcher, along with the amount of time spent by each couple in the courseware. For couples without access to computer equipment, a computer was placed in a private location in the church during the data collection period.

During the first orientation meeting, Groups A and B completed the MCI. Groups A and C (experimental subjects) received copies of the courseware to complete at home or at church within a two week period. Groups C and D did not complete the pre-test.

Husbands and wives were separated into groups so they could not view the responses of their spouses on the MCI. Couples placed their case numbers on the MCI instead of names. Subjects wishing to receive feedback from the MCI were instructed to request results by contacting the researcher by telephone and supplying their case number.

Prior to the second meeting at each church, the researcher contacted all participants by telephone to remind them about the meeting. All couples completed the MCI at the second meeting. Groups B and D (controls) were given the courseware to complete within two weeks and were told where to return the diskettes. Program tracking
enabled the computer to record the amount of time spent by each couple in the courseware.

The research design was as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test first meeting</th>
<th>Treatment</th>
<th>Post-test second meeting</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Results and Discussion

Analysis of Data

Hypotheses one and two were tested by one-way analyses of variance. Hypothesis three was tested by a three-way analysis of variance. Raw MCI scores for participants in this study ranged from 59-118 for those who took the pre-test. Post-test MCI scores ranged from 64-126. Scores were analyzed both as pairs and individually to determine if there were differences between husbands and wives. The level of significance for each analysis was set at .05.

Additional investigation of the data was performed and explained. To examine the differences observed in pre- and post-test MCI scores, scores from Group A husbands, wives, and couples were tested by a t-test for related samples.

Hypothesis 1 stated that wives who completed the pre-test (Groups A and B) would achieve significantly higher
pre-test MCI scores than husbands. Table 1 shows the pre-test means and standard deviations for females and males.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Females (N=20)</th>
<th>Males (N=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>104.30</td>
<td>98.10</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>14.45</td>
<td>14.03</td>
</tr>
</tbody>
</table>

Table 2 shows the results of the one-way analysis of variance with the Pre-Test (MCI) as the dependent variable and gender as the independent variable.

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>384.40</td>
<td>1</td>
<td>384.40</td>
<td>1.80</td>
<td>.2</td>
</tr>
<tr>
<td>Error</td>
<td>8109.96</td>
<td>38</td>
<td>213.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data from the one-way analysis of variance indicate that differences at the pre-test on the MCI between wives and husbands are not statistically significant, therefore, Hypothesis 1 is not supported. Wives do not have significantly higher scores than husbands on the pre-test.

Hypothesis 2 stated that at the post-test wives in the experimental groups (Groups A and C) would achieve significantly higher MCI scores than husbands. Table 3 shows the post-test means and standard deviations for males and females.
Table 3

Post-Test Means and Standard Deviations by Sex for the MCI

<table>
<thead>
<tr>
<th>N = 40</th>
<th>FEMALES N = 20</th>
<th>MALES N = 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>100.60</td>
<td>97.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>16.08</td>
<td>13.43</td>
</tr>
</tbody>
</table>

Table 4 shows the results of the one-way analysis of variance with the Post-Test (MCI) as the dependent variable and sex as the independent variable.

Table 4

Analysis of Variance for Post-Test on Sex

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SUM OF SQUARES</th>
<th>DF</th>
<th>MEAN SQUARE</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (N = 40)</td>
<td>129.60</td>
<td>1</td>
<td>129.60</td>
<td>.56</td>
<td>NS</td>
</tr>
<tr>
<td>Error</td>
<td>8778.78</td>
<td>38</td>
<td>231.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The .05 level of significance set for the one-way analysis of variance of sex differences on the MCI is not met; therefore, Hypothesis 2 is not supported. Females do not have significantly higher post-test MCI scores than do males.

Hypothesis 3 stated that experimental subjects (Groups A and C) would achieve significantly higher scores on the MCI than would control subjects (Groups B and D) for husband's, wife's, and couple's scores. Table 5 reports the means and standard deviations for the eight groups examined through the three-way analysis of variance.
Table 6 shows the results of the three-way analysis of variance, with sex, treatment, and pre-test as independent variables and post-test scores as the dependent variable.

Table 5

Post-Test Means and Standard Deviations by Sex, Treatment and Completion of Pre-Test

<table>
<thead>
<tr>
<th></th>
<th>Pre-Test Completed</th>
<th></th>
<th>No Pre-Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment Group A</td>
<td>Control Group B</td>
<td>Treatment Group C</td>
<td>Control Group D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males (N = 40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>103.10</td>
<td>110.10</td>
<td>98.10</td>
<td>107.30</td>
</tr>
<tr>
<td>SD</td>
<td>17.79</td>
<td>13.95</td>
<td>13.72</td>
<td>9.88</td>
</tr>
<tr>
<td>Females (N = 40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>97.60</td>
<td>101.50</td>
<td>96.40</td>
<td>104.40</td>
</tr>
<tr>
<td>SD</td>
<td>13.76</td>
<td>14.25</td>
<td>13.06</td>
<td>18.22</td>
</tr>
</tbody>
</table>

Table 6

Summary for Three-Way Analysis of Variance for Post-Test by Sex, Treatment and Completion of Pre-Test

<table>
<thead>
<tr>
<th>Source of Variation (N = 80)</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>437.11</td>
<td>1</td>
<td>437.11</td>
<td>1.86</td>
<td>.18</td>
</tr>
<tr>
<td>Treatment</td>
<td>987.01</td>
<td>1</td>
<td>987.01</td>
<td>4.20</td>
<td>.04</td>
</tr>
<tr>
<td>Received Pre-Test</td>
<td>46.51</td>
<td>1</td>
<td>46.51</td>
<td>.20</td>
<td>.66</td>
</tr>
<tr>
<td>2-Way Interactions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex X Treatment</td>
<td>23.11</td>
<td>1</td>
<td>23.11</td>
<td>.10</td>
<td>.76</td>
</tr>
<tr>
<td>Sex X Recd. Pre-Test</td>
<td>112.81</td>
<td>1</td>
<td>112.81</td>
<td>.48</td>
<td>.49</td>
</tr>
<tr>
<td>Treatment X Received Pre-Test</td>
<td>49.61</td>
<td>1</td>
<td>49.61</td>
<td>.21</td>
<td>.65</td>
</tr>
<tr>
<td>3-Way Interactions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex X Treatment X Received Pre-Test</td>
<td>4.51</td>
<td>1</td>
<td>4.51</td>
<td>.02</td>
<td>.89</td>
</tr>
<tr>
<td>Residual Within</td>
<td>16916.50</td>
<td>72</td>
<td>234.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18577.19</td>
<td>79</td>
<td>235.15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The three-way analysis of variance for the Post-Test MCI scores does not reveal any significant interaction effects, indicating that gender, treatment status, and the completion of the pre-test do not significantly interact with each other. There is a significant main effect for subjects who received the treatment (p < .05) but in the direction opposite of that hypothesized indicating that subjects who completed the treatment have significantly lower MCI scores at the post-test.

Related Findings

Subjects completed two open ended questions as a part of the MCI. In response to "lately our relationship..." 78% of the individuals said their relationship was good or average, 17.1% said it was a little strained, and 4.9% did not complete the question. In response to "the main thing I see facing us at this time is..." 29% mentioned job stress, and 18.4% noted financial concerns.

To examine the observed differences between raw MCI pre- and post-test scores for Group A, difference scores consisting of the post-test score minus the pre-test score for husbands, wives, and couples were calculated. A t-test was then calculated between Groups A and B (pre-test subjects) on these difference scores for husbands, wives, and couples. The results appear in Table 7.
### Table 7

- **t-Tests for Husbands, Wives, and Couples**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>P (one tail)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wives: (N = 20)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment group</td>
<td>4.20</td>
<td>9.06</td>
<td>4.08</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Control group</td>
<td>.70</td>
<td>8.06</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Husbands: (N = 20)** |      |     |      |              |
| Treatment group        | .70  | 4.59| -2.24| <.025        |
| Control group          | 2.30 | 9.01|      | (opposite direction) |

| **Couples: (N = 40)**  |      |     |      |              |
| Treatment group        | 2.45 | 6.99| 2.47 | <.01         |
| Control group          | 1.50 | 8.32|      |              |

The t-test of the difference scores for husbands is significant at less than the .05 level (p < .025) but in the direction opposite of that hypothesized indicating that husbands in experimental Group A obtained lower MCI scores after completing the marriage enrichment program. For wives' scores, the t-test is significant at less than the .05 level of confidence (p < .005), indicating that wives in experimental Group A obtained significantly higher MCI scores after completing the marriage enrichment courseware. For couples' scores, the t-test is significant at less than the .05 level (p < .01), indicating that couples' combined MCI scores in experimental Group A are significantly higher.
after completing the marriage enrichment courseware. Therefore, the wives' scores improved so significantly that they offset the husbands' lower scores after completion of the marriage enrichment computer courseware.

Raw difference scores for husbands, wives, and couples in Group A appear in Table 8.

Table 8

Group A Raw MCI Difference Scores and Time Spent on Program

<table>
<thead>
<tr>
<th>Couple Number</th>
<th>Husband</th>
<th>Wife</th>
<th>Couple</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>11</td>
<td>16</td>
<td>2.5</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>2.0</td>
</tr>
<tr>
<td>9</td>
<td>-1</td>
<td>0</td>
<td>-1</td>
<td>1.5</td>
</tr>
<tr>
<td>13</td>
<td>3</td>
<td>-15</td>
<td>-12</td>
<td>1.0</td>
</tr>
<tr>
<td>17</td>
<td>4</td>
<td>9</td>
<td>13</td>
<td>4.0</td>
</tr>
<tr>
<td>21</td>
<td>-6</td>
<td>12</td>
<td>6</td>
<td>3.5</td>
</tr>
<tr>
<td>25</td>
<td>-1</td>
<td>6</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>29</td>
<td>-7</td>
<td>8</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>33</td>
<td>3</td>
<td>-7</td>
<td>-4</td>
<td>1.0</td>
</tr>
<tr>
<td>37</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>4.5</td>
</tr>
</tbody>
</table>

The amount of time spent by each couple completing the courseware was recorded by the computer. Results show that couples spent an average of 3.18 hours completing the computer-assisted marriage enrichment courseware.

The relationship between the time spent on the program by experimental subjects (N = 40) and MCI post-test scores was tested using the Pearson product-moment correlation. The correlation is .42 which is significant beyond the .01 level (p < .01). The relationship between the post-test MCI scores for subjects in Group A (N = 20) and the number
of hours spent on the program was tested using the Pearson product-moment correlation. The correlation is .63 which is significant at the .05 level. Both findings suggest that couples who spent greater amounts of time on the program were more likely to achieve an improved MCI score.

To further examine the effect of time spent by couples completing the courseware, a multiple regression was computed with the post-test MCI scores as the dependent variable and sex, completion of pre-test, and hours spent as the independent variables. The results of the multiple regression appear in Tables 9 and 10.

Table 9
Analysis of Variance on Post-Test with Sex, Completion of Pre-Test and Hours Spent to Form Regression

<table>
<thead>
<tr>
<th>Source of variation (N = 40)</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1763.92</td>
<td>3</td>
<td>587.97</td>
<td>2.96</td>
<td>.04</td>
</tr>
<tr>
<td>Residual</td>
<td>7144.48</td>
<td>36</td>
<td>198.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10
Multiple Regression for Post-Test with Sex, Completion of Pre-Test, and Hours

<table>
<thead>
<tr>
<th>Variable (N=40)</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig. T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>4.70</td>
<td>1.68</td>
<td>.42</td>
<td>2.78</td>
<td>.0085</td>
</tr>
<tr>
<td>Recd. Pre-Test</td>
<td>-3.10</td>
<td>4.45</td>
<td>-.10</td>
<td>-6.9</td>
<td>.4910</td>
</tr>
<tr>
<td>Sex</td>
<td>-3.60</td>
<td>4.45</td>
<td>-.12</td>
<td>-8.0</td>
<td>.4243</td>
</tr>
<tr>
<td>(Constant)</td>
<td>95.22</td>
<td>10.87</td>
<td></td>
<td>8.76</td>
<td>.0000</td>
</tr>
</tbody>
</table>
The regression analysis reveals that the time spent completing the courseware is highly significant ($T < .0085$) indicating that couples who spent longer periods of time on the training received higher post-test MCI scores.

Examination of raw difference scores (see Table 8) versus time spent on the program reveals that couples in Group A who spent less than 1.5 hours on the program received negative difference scores and participants who spent more than two hours on the program received positive difference scores.

Discussion

This study examined the effects of a computer-assisted marriage enrichment program designed to teach couples communication skills. While the hypotheses were not supported, some significant differences were found in related analysis.

The finding of this study of no significant difference between the pre- or post-test MCI scores of husbands and wives is counter to Davis, Hovestadt, Piercy & Cochran's (1982) finding that wives who participated in marriage enrichment demonstrated more positive changes in marital adjustment than did husbands as measured by the Dyadic Adjustment Scale, the Fundamental Interpersonal Relations Orientation—Behavior test, and the MCI. The authors concluded that since many wives volunteered couples for
the study, their initial enthusiasm may have contributed to the measured differences between husbands and wives (Davis et al, 1982). The majority of the couples in this study decided together to participate in the study, and verbal comments indicated that husbands were as enthusiastic as wives about the marriage enrichment program.

Wives in this study appear more similar to husbands than has been indicated in marriage enrichment literature. Silverman & Urbaniak's (1983) survey of marriage enrichment participants indicated that husbands had an average of two years of college and wives had none. Participants in this study were highly educated, with 88% of the women having some college education, and 83% of the men holding at least a bachelor's degree. The similar educational backgrounds of husbands and wives may have contributed to the finding of no significant differences between husbands' and wives' pre- and post-test MCI scores. Similar education may imply shared experiences and values as evidenced by husbands and wives receiving a closer range of MCI scores.

The finding that experimental subjects significantly decreased their post-test MCI scores could be attributed to the subject matter of the communication courseware. Couples who were exposed to the treatment were required by the courseware to discuss communication issues, such as listening skills, identification of feelings, attending behaviors, seeking clarification, restatement, and problem-
solving. The two week treatment period may not have provided a sufficient amount of time to enable couples to resolve communication issues brought up by the courseware. Further research is needed to examine the effect of the treatment over a longer time period, such as a one month or six month follow-up. The treatment may have been effective, but couples may not have had an adequate amount of time to process the information learned and make measurable behavioral changes in their communication style.

A related finding on differences between pre- and post-test MCI scores showed wives in experimental Group A significantly improved MCI scores over their husbands. This finding supports Russell, Bagarozzi, Atilano & Morris' (1984) conclusion that wives made more immediate changes than husbands on communication style as measured by the Orden-Bradburn Marital Satisfaction Scales.

The MCI used in this study appears to be a general assessment of communication skills. The majority of the items in the MCI address past communication style, listening skills, emotional expression, and frequency of communication. The communication courseware presented information on listening skills, empathy, and problem-solving to couples. While these skills form an important basis for marital communication (Cleaver, 1987), the MCI focuses on general topics, such as communication comfort
and frequency, rather than specific topics addressed in the courseware, such as problem-solving.

Participants in the study noted two additional concerns about the MCI. The MCI forms purchased from Family Life Publications contained dated references to wives which created confusion for women in the study who were not mothers. Reproduction quality was also poor, causing some respondents to skip questions.

The significant difference between husbands' and wives' MCI post-test scores, with experimental husbands receiving lower scores and wives receiving higher scores in this study, appears to support the findings of several other studies (Davis et al, 1982; Russell et al, 1984; Cleaver, 1987) which concluded that husbands and wives learn different skills from marriage enrichment communication programs. In Cleaver's (1987) videotaped communication program, husbands showed greater improvement in listening and problem solving skills while wives improved speaking skills. In this study the self-report measure (MCI) asked couples to assess communication behaviors by focusing on speaking skills. If husbands learned problem-solving skills, the change would be more difficult to measure with the MCI, especially within a short period of time. The dearth of marriage enrichment research has been noted (Cleaver, 1987). Further research
is needed to explain why husbands and wives who hear the same material learn different aspects of communication.

Although not hypothesized, the regression analysis in this study revealed that experimental couples who spent more time on the courseware significantly increased post-test MCI scores. The estimated time for couples to complete the program was three hours. Couples in this study who spent at least two hours completing the marriage enrichment courseware obtained a higher MCI score at the post-test. Although the marriage enrichment literature does not comment on the effect of time spent on a program, the correlation found in this study between the amount of time couples spent on the program and achieving higher scores on the MCI seems logical. The highly significant regression analysis finding concerning time spent on the courseware implies that time is an important factor in determining scores. Time spent was the only significant effect revealed by the regression analysis. Couples who completed all modules of the marriage enrichment courseware increased their chances of improving communication skills. The computer measurement of time spent by couples on the program allows the precise measurement of a new variable. Further research is needed to explore the relationship between time spent on the marriage enrichment program and improved communication skills.
Verbal reports from courseware participants were complimentary of the program. One husband who expressed initial reluctance when his wife volunteered for the program made a special effort to say how much he enjoyed the program. The only concern expressed about the enrichment program was the length of time required to complete the courseware. Five couples stated the length of the program was the reason they did not complete all modules. Those couples who chose to complete the material in several sessions found it more enjoyable than couples who chose to complete the courseware in one lengthy session. The time between sessions also may have allowed couples to process information as posited by Davis, Hovestadt, Piercy & Cochran (1982) who concluded that a five-week marriage enrichment group may lead to more positive indications of improved marital adjustment than a weekend marriage enrichment group.

Several changes would make the computer-assisted marriage enrichment courseware more appropriate for future use. The training program could be individualized if a computer assessment of the communication skills of each couple enabled the courseware to present only pertinent modules to each couple. The courseware could cover the same information by presenting ten shorter modules, instead of the six longer modules used for this study. A
printing option could enable couples to print information for feedback or for further study. The program could also be expanded to a structured group format with live facilitators demonstrating the concepts discussed in the training program. Participants would then have the opportunity to simulate skills introduced by the computer-assisted courseware. As computer technology improves, interactive video computer courseware could present both written material and taped examples for couples.

Based on the findings of this study, it seems appropriate to conclude that computerized marriage enrichment courseware would be beneficial to facilitators of marriage enrichment programs. Computer-assisted marriage enrichment courseware appears to be a promising approach to marriage enrichment for couples who spend an appropriate amount of time on the program. Couples in this study who spent less than two hours working on the marriage enrichment courseware did not complete the program. Other successful approaches (Cleaver, 1987; Russel et al, 1984; Davis et al, 1982, Hammonds & Worthington, 1985; and Milholland & Avery, 1982) utilized a structured group format that required couples to complete the course material. Because some couples in this study did not complete all of the courseware modules, it appears that a group format would be a more appropriate use of the marriage enrichment courseware. A structured group
approach would encourage couples to spend the appropriate amount of time to complete the training program. Participants in a group format would also have supervision and assistance to resolve any problems that arose. The courseware could also be used as an adjunct tool to a traditional marriage enrichment course. Marriage enrichment participants could use the courseware as a self-paced study of communication and problem-solving skills as a follow-up to an experiential marriage enrichment program.
Appendix A

Computer Screens
Basic Marriage Communication Training

(c) Copyright 1988, Annetta Ramsay
Text (c) Copyright 1976, Gary Brainerd
Text used by permission.
This courseware is designed to help improve the relationship between a husband and a wife by helping them improve their communicating patterns.
Material will be presented to you by topics and you will be allowed to examine it at your pace...

At the end of each module, you will be able to assess your understanding of the topic.
Completion of the Basic Marriage Communication Training will take approximately two hours.

Each module will last about 15 minutes.

Once a module has been selected, it must be completed.
Information will be presented by screens.

Instructions about how to continue the module will always appear at the bottom of each screen...

Press any key to continue...
Basic Marriage Communication Training

1) Communicating Understanding
2) Beginning to Talk
3) Message Sending Skills
4) Friendly Talk
5) Problem Solving Approaches
Communicating Understanding

Sometimes there will be screens, like this one, that do not have any questions. Simply read the information carefully and press any key to continue...

Press any key to continue...
Communicating Understanding

Sometimes you will be given a question and several possible responses. Select the letter preceding the best answer.

Press any key to continue...
Communicating Understanding

Example:
This program is designed to help married persons _____.

A) manage their finances
B) communicate
C) parent their children

That's correct!

Press any key to continue...
Communicating Understanding

There are several important reasons for attempting to improve communication in a marriage. For one thing, in every marriage various problems and conflicts arise.

Improved communications can help resolve these in ways that are more satisfying to both husband and wife.

Press any key to continue...
Communicating Understanding

Another reason improving communication in a marriage is important is that communicating itself can be a rewarding and satisfying experience.

It can make life more enjoyable and marriage more pleasurable. Skills in communicating can be enhancing to a marriage.

Press any key to continue...
Communicating Understanding

Communication skills can help resolve:

A) problems
B) divorces
C) criticism

Very good...

Press any key to continue...
Communicating Understanding

Communication can be _____ for life and marriage.

A) frustrating
B) time-consuming
C) enhancing

That's right...

Press any key to continue...
Appendix B

Communication from Gary Brainerd
January 2, 1989

Annetta Ramsay  
P. O. Box 733  
Krum, TX 76249

Dear Annetta:

This is to verify that I have reviewed the computer assisted instructional courseware that you developed for your research based on Basic Marriage Communication Training. I found it to be a valid representation of my programmed text.

Good luck on your research.

Sincerely,

Gary Brainerd
Appendix C

Announcement for Church Newsletter
Announcement for Church Newsletter

Enrich your marriage... a special opportunity for you.

BASIC MARRIAGE COMMUNICATION TRAINING is a micro-computer software program designed to help you and your spouse improve communication skills. If you participate in this program, you will be asked to attend two one hour orientation programs to be held at the church on ___/___/___ and ___/___/___ and complete the two hour training program on the micro-computer. You may do this in the privacy of your own home on an IBM or IBM-compatible personal computer or you may sign up for a time to use a micro-computer provided for your use at the church. There is no cost to you.

This is part of a doctoral research project conducted by Annetta Ramsay. If you are interested, call the church office to register for this program or you may call Annetta Ramsay at 817-482-6637.
Appendix D

Verbal Announcement for Ministers
Members of this church are invited to participate in a Marriage Enrichment program. **BASIC MARRIAGE COMMUNICATION TRAINING** is a micro-computer program designed to help couples improve communication skills. Couples wishing to participate in this program will need to attend two one hour orientation sessions at the church on ___/___/___ and ___/___/___ and complete the two hour training program on the micro-computer. You may do this in the privacy of your own home on an IBM or IBM-compatible personal computer or you may sign up for a time to use a micro-computer provided for your use at the church. There is no cost to you.

For more information about this program, consult the most recent issue of the church newsletter or you may call the church office.
Appendix E

Consent Form
Notice of Consent

I understand that I am voluntarily participating in a research project and that I may withdraw at any time without penalty. I understand that my individual answers will be held in strictest confidence and that none of my responses will be shared with my spouse nor with anyone else. I also understand that I will not be asked to place my name on the questionnaire that I complete. Instead, I will be assigned a case number that will be placed on the questionnaire. If I wish to receive feedback from the questionnaire, I understand that I will need to contact the researcher and supply my case number.

As a result of my participation in this research, I understand that I may improve my communication skills. I also understand that by participating in this study I may identify the need for marital counseling.

I agree to cooperate fully by taking the questionnaires and completing the computer program in the order I am asked to do so. I agree to attend both orientation sessions and to spend approximately 2 hours completing the training program. I also agree not to discuss the contents of the program with anyone other than my spouse until after all research has been completed.

Signed: ___________________________ ___________________________

Date : ___________________________
Appendix F

Training Program Outline
Marital Communication Training

Outline of First Orientation Program

I. Introduction
II. Description of Marital Communication Training
III. Consent forms signed
IV. Training on operation of micro-computer
V. Instruction on how to use software
VI. Verbal assurance of confidentiality
VII. Couples in group D dismissed and asked to return for second meeting
VIII. Couples in groups A and C given copies of the computer software to complete before the second meeting. Schedule times for couples to work on the computer.

IV. Couples in groups A and B given the pre-test.

Outline of Second Orientation Program

I. Introduction
II. Couples assigned numbers and husbands and wives split into two groups
III. All couples complete the post-test
IV. Couples in groups B and D given copies of the computer software to complete within two weeks. Schedule times for couples to work on computers
Bibliography


Slack, C. W., & Slack, W. V. (1974, January). We are listening to you talk about your sadness. *Psychology Today, 7*, 63-65.


