

KNOWLEDGE GAIN AND ATTITUDE CHANGE
IN A FAMILY LIFE EDUCATION PROGRAM

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MARKS ON ORIGINAL

ABSTRACT

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This study evaluates the extent to which a Family Life Education (FLE) program contributes to the acquisition of FLE knowledge, a positive gain in attitudes about this knowledge and the correlation between the knowledge gain and attitude change.

The evaluation procedure involved pre- and post-testing of an experimental group (N=104) who took an eight week, one hour per week FLE program (level six); and a control group (N=62) who did not have any program.

Multiple t tests were applied to the pre-test scores resulting from both the Coates Maturation and Reproduction Inventory of Factual Knowledge and the ten family-related concepts in a semantic differential. An analysis of variance was applied to the post-test and gain scores. A Pearson r was used for the correlation. Only the experimental group showed a significant ($p < .05$) gain in both knowledge and related attitude. However, the correlation for the experimental group was $r = .33$.

The program was judged to fulfill its designed goals by adequately increasing student relevant knowledge and positively increasing relevant attitudes, especially, "self image".

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CHAPTER I

INTRODUCTION

Family Life Education is a program that is both old and new - old in terms of the kinds of matter that make up its content and new in its methodology. In one form or another, it has been offered by schools, churches and Family Service Agencies. Courses such as sewing and cooking, consumer education, child rearing, marital relationships, courtship and most specifically sex education (because the family almost by definition is founded by a sexual union) have all come under the label Family Life Education (FLE).

Generally speaking programs in phases of the family life cycle, such as marital relationships and child rearing, have been offered to adult groups, whereas human relations and sex education is the program offered in the schools.

The multiple facets of the program produce a variety of definitions. Wolfson's definition (1969, p. 1) is consistent with the views expressed in this study:

Family Life Education is the professional process by which information is transmitted (or at least offered) to people of almost all ages and about various aspects of life, including dynamics of interpersonal relationships, such as between parent and child or husband and wife, since these are primary and of greatest influence on the human being. It is

based on the premise that knowledge and understanding can be used by most persons to influence both attitudes and behaviour, especially when relevant information is given in a manner and at a time calculated to meet the more or less perceived needs of those persons but perhaps most immediately useful when tailor-made for the recipient and usually at his request.

A similar definition of FLE has been stated by Marie Kischuk (1972, p. 3).

A developmental process which promotes awareness and understanding of interaction, behaviour and growth amongst family members and between the family and other institutions. On another level, it provides learning experiences whereby skills and attitudes are acquired which will ensure the maximum potential development of each family member during each stage of life.

Edgar E. Stern (1969, p. 41) in his article Family Life Education: Some Rationales and Contents states that the family as a basic social system may modify or alter with change but it is not about to wither away. This theory appears to be widely supported.

No matter what form, traditional or innovative, the family unit takes, it assumes the role, by its very nature, of determining the extent to which each individual can cope with diverse choices and demands for adaptability. How can individuals equip themselves to face the problems of adaptation? The new technologies create options that are untested and unfamiliar, decreasing the value of past experience in decision making.

Family Life Education attempts to deal with the problems of adaptation. It is valid for any individual, at any stage of the family life cycle, coping with a particular set of circumstances.

Statement of Problem and Its Significance

A major problem facing western society is the breakdown within and of the family and individuals. Norbert Weiner (1967, p. 66) suggests:

We have modified our environment so radically that we must now modify ourselves in order to exist in the new environment.

On examination of (a) the caseloads of counselling agencies and (b) the literature concerning family life, it seems that the thrust of western society during the past few decades reveals a high priority given technological development to the detriment of human values. Hilda Taba (1962, p. 37) maintains that modern technology and the organization of economic life generated by it have produced a dangerous confusion of values and beliefs.

Some of the products of the technological change are the increasing mobility of families, changing role of women, automation, the early socialization of children and adolescent freedom.

The neglect of human values, that result from these

phenomena has created an imbalance and is manifest in the kinds of major problems that face the individual, the community and, particularly, the family.

As reported by the Vanier Institute on the Family in their Report of Family Life Education in the Schools - Part II

(1971, p. 1):

The incidence of juvenile delinquency is increasing, drugs amongst many groups of young people are taken for granted; rates of illegitimacy and divorce increase year by year. . . ; communication between parent and children is often notoriously unsatisfactory. . . .

Adapting ourselves, therefore, appears to be more complex and difficult a task than altering our physical environment. Developing skills to change the physical environment is concrete, more clearly pursued and highly emphasized. Skills relating to human development may be individualistic, abstract, thereby being less tangible.

The Vanier Institute on the Family (1971, p. 1) reports that a few generations ago FLE was not considered a subject fit for school curricula. It was expected that what children had to know about themselves and family living would be learnt in their family experience and everyday lives. The institute goes on to state that the situation today has shown a vast change.

In our contemporary world the school cannot help but be involved as one of the institutions that has taken over functions formerly belonging to the family, it looms as the most appropriate and convenient for many family associated questions (1971, p. 1).

In order for the school to meet this task, innovative and creative approaches to education have to be developed. Empirical research must accompany this development to test out the hypothesis on which these approaches and techniques are based. The concept of Family Life and Sex Education was developed as a response to this problem, as pointed out by Rose M. Somerville (1972, p. 6).

Even if Family Life and Sex Education cannot solve the problems of relationships, it is still a valuable experience for all ages. Parents are easier persons to live with if they understand themselves as men and women, as sexual beings, as grown children of elderly men and women who are sexual beings, as brothers and sisters of those who have their own decisions to make. An understanding of past changes can prepare us, for those to come. Any reduction of "future shock" or the pain that accompanies a swift change of norms and the redefinition of roles, is a mental health benefit.

However, as Derek Burleson, Director of Education and Research of the Sex Information and Education Council of the United States (SIECUS) points out in a SIECUS Report (Sept. 1972, p. 5) when he comments on a study done by Edward Coates (1970):

This study will be of great interest to those working in the field of sex education (family life education) because it represents one of the first attempts to assess systematically the influence on attitudes of factually oriented subject matter content. . .

For too long those working in the field have operated on the hopeful assumption that school programs will automatically result in more positive attitudes.

Objectives for this Study

This study attempts in large part to replicate the study mentioned above, done by Edward E. Coates (1970).

Coates showed that sex-related knowledge could be acquired without a significant effect on attitude. The measures and methods used in this study are closely related to those in Coates' study but have been adapted to the program and population being studied presently.

The scope of Family Life Education has many facets and, therefore, it is difficult to evaluate such education in its entirety. The focus of this study confines itself to the empirical evaluation of the FLE School Program. The program evaluated is one designed by the author, based on FLE principles, for elementary school, level six.

It is the purpose of this study to prove or disprove the hypothesis that attitude change, or modification, is influenced by the acquisition of factual information.

It should be noted that this study has been prompted by the recognition of the importance of the empirical evaluation process in an educational program. It also acts as a response to the lack of evaluative material available in the field of Family Life and Sex Education.

General Methodology

The research activities in this study include gathering and comparing both pre- and post-measures of factual information and pre- and post-semantic differential indices from a group of students (level six) involved in an FLE program. In addition, these scores were compared with a control group and sex differences on the variables were investigated as well.

The experimental treatment involved level six, male and female students in an eight week, one hour per week, FLE program. This program was presented by a trained Family Life Educator who was not a staff member in the school. In most instances the class teacher sat in during the FLE discussions to allow for continuity after the eight week period was over.

The content of the program was oriented toward human development and human relationships and the method used was open ended discussion with the aid of media, to stimulate

discussion. The Family Life Educator acted as the facilitator in the discussion.

Assessment of information gain was accomplished by pre- and post-administrations of a modified version of the MARIFAK, a multiple choice measure of FLE information devised by Edward Coates (1970).

Attitude change was determined by the pre- and post-administrations of a semantic differential scale composed of ten concepts related to human sexuality and relationships, judged to be relevant to the research population and treatment.

The present chapter has presented a rationale for and an overview of this study. To put this study in the context of the general perspective of FLE, Chapter II is a literature review covering the concepts of FLE and related research. Chapter III describes the objectives, curriculum development and personnel for the specific program in the study. The empirical evaluation procedures are described in Chapter IV. Data analysis is presented in Chapter V, and the discussion of the analysis follows in Chapter VI.

CHAPTER II

LITERATURE REVIEW

Family Life Education, as an educational concept, is sometimes difficult to transmit. To achieve a better understanding of FLE one has to be familiar with the concepts involved and recognize the problems faced when attempting to evaluate the program. This chapter describes the concepts, the problems and some related research in the field.

Concept of Family Life Education

Concepts of Family Life Education were borne out of a widespread concern for growing individual and family instability. Erik Erikson (1963, pp. 247-274) points out that this kind of instability is symptomatic of the difficulty encountered in human adaptation or the individual's inability to move from one state of development to another. Implicit in the term FLE is method, intervention, a force, an active process, a training and an activity.

Those who created FLE aimed to enhance daily living and to effect prevention of individual and family breakdown through education. The broad objective of the program is to improve personal and social relationships. Special emphasis is placed on human relationships and sexuality.

Within that broad objective, there are specific aims and goals. The aims and goals usually fall into two categories: to transmit factual knowledge about human development and development or modification of attitudes and behaviour.

The FLE approach is to focus on information, interpretation and education about daily family issues. The approach is based on the following assumptions:

- 1) All education rests on the general conviction as to the influence of the cognitive process in altering ways of believing and behaving (Place, 1965, p. 3).
- 2) The chances of affecting behaviour will be greater if the learner's feelings and concerns are recognized and made to direct the cognition that logically should follow if the cognition is used to help the learner cope with his concern (Weinstein and Fantini, 1970, p. 32).

The 'open ended' group discussion method is employed utilizing 'here and now' interactions to supply learning material.

Hilda Taba (1962, p. 169) feels the advantage of group discussion is that it is a means of preventing closed tracks of thinking from hardening.

To use personal expression from the entire group in developing an idea or a pattern of feeling is to open wider possibilities than any individual can build for himself.

The nature of FLE group interaction is that the group becomes a kind of 'family' where the participants learn to trust each other and use that trust in a positive and constructive way. The members can then model a variety of life styles which are their own. From this variety, the group participants have possibly, for the first time in their lives, options from which they can choose. The aim is to increase the individuals' choices of action and to enlarge their capacities to deal with life situations.

Problems in Evaluating Family Life Education

The evaluation of Family Life Education appears to be a very difficult task. This is substantiated by the relative lack of empirical evaluative material in the field.

Some of the problems include the fact that the concepts being dealt with are vague (e.g. attitudes and values), and there is difficulty in finding good instruments for measurement. Furthermore, populations for research purposes are difficult to obtain because the subject matter is still somewhat controversial. One other major problem is that the subject matter being covered is also dealt with at home and in peer groups, making it difficult to assess to what degree it is the program alone which contributes to the findings.

Since the curriculum is essentially a plan for helping students to learn, ultimately all evaluation goes back to the criterion of effectiveness of learning. But even here many meanings prevail (Taba, 1962, p. 314).

Bloom's Taxonomy of Objectives, Cognitive Domain

(1956, p. 207) puts evaluation at the sixth level and defines it as:

. . . judgments about the value of material and methods for given purposes. Quantitative and qualitative judgments about the extent to which materials and methods satisfy criteria. Use of a standard of appraisal. The criteria may be those determined by the student or those which are given to him.

The general operational definition of evaluation covers a wide range. It spans a range of evaluation by grading and at the other extreme is an intricate and complex process which begins with formulation of objectives and involves interpreting judgment and recommendations (Tyler, 1951).

The use of the term evaluation in the curriculum can cover anything from its scope, the quality of personnel in charge of it, the capacities of the students, the degree to which objectives are implemented, the equipment and materials. The term can also refer to the process involved and it can be carried on at a variety of levels and by different categories of people.

A thorough evaluation will contain elements of a dozen or more distinct activities. The mixtures of activities in which a particular evaluation will be engaged will, of course, be influenced by resources of time, money, expertise, goodwill of schoolmen, or many other factors. But equally important (and more readily influenced) is the image that the evaluator holds of his specialty: its responsibilities, duties, uniqueness and similarities to related endeavours (Worthen and Saunders 1973, p. 17).

To bring a focus to the term evaluation, the definition used for this study is borrowed from Worthen and Saunders (1973).

Evaluation is the determination of the worth of a thing. It includes obtaining information for use in judging the worth of a program, product, procedure or objective or the potential utility of alternative approaches designed to obtain specified objectives.

To summarize, evaluation is related to objectives and the degree to which those objectives are reached. The more comprehensive and complex the objectives, the more complex the task of evaluation.

In spite of the fact that there appears to be an abundance of curricular material available for FLE programs, there is a lack of evaluative information. This lack could be due to one of the observations made by Elizabeth Force based on an FLE Regional Survey:

The broad concept of family life education is apparently difficult to interpret, to grasp, to implement. Among the educators generally, there is only a partial appreciation of the breadth and depth of the concept,

but there is a fuller understanding of the complexity of its implementation (1970, p. 298).

Perhaps the introductory statement of a test for an FLE school course could shed some further light on the complexity of the task of evaluation.

The real test of this course is not a written one. If you are growing in wisdom and maturity, if you are able to use this material in your lives, you have passed with honors (Force 1967, p. 27).

Derek Burleson raises some questions about sex education that are relevant to FLE.

What are we doing? How well are we doing it? How can we do it better? These three questions, basic to any form of curriculum evaluation are no less appropriate for sex education (or FLE) (SIECUS 1973, p. 1).

Related Research in Family Life Education

A survey of the literature reported by Derek Burleson (1973, p. 1) dealing with Family Life and Sex Education shows an abundance of articles attacking or defending it, describing theories or models of it, but what is not found is a large body of empirical research. Evaluation of this kind of education is difficult in that the concepts are nebulous and the goals are difficult to define clearly. This may be attributed to the fact that the core of these programs occurs in the interaction amongst students and between specific students and a specific educator. As a

result, it is difficult to generalize beyond the specific program which is evaluated in any specific study.

Another difficulty lies in the fact that the programs are controversial and political, and any research about them is likely to be controversial and political. Frederick Bidgood of SIECUS (1973, p. 3) states that the effects of any experimental educational program fall into three broad categories: changes in knowledge, in expressed attitudes or values, and in specific choices of behaviour in social situations.

Since this study is concerned primarily with knowledge and attitudes, the research cited will be addressed to these two categories exclusively.

John F. Crosby (1971) did a study to determine whether the attitudes held by adolescents, especially toward themselves and their families, could be changed in a positive direction as a result of a one-semester FLE program.

Three experimental groups were used: public school girls, public school boys, and private school boys. Initially, difficulty in obtaining a sample population was encountered, due to the controversy concerning Family Life Education in the school at that time (1968-69). The final sample consisted of 38 volunteers who would be accepted only on condition that there was signed parental permission. Three control

groups were matched to the experimental group on age, race, sex, school grade and socio-economic status.

The experimental groups received a total of two hours per week for seventeen weeks in class instruction plus homework assignments. Credits and a course grade were given to all students in the experimental groups. The course was taught by the researcher and based on a text co-authored by the researcher with a psychologist (Crosby and Caldwell - unpublished). The experimental and control students were both given identical pre-test and post-tests.

To measure human development knowledge, a multiple choice test by the author was administered. To determine how the adolescent feels about himself, two tests were used. The Elias Family Opinion Survey (Elias) and a self-concept inventory developed by the researcher.

The results showed that students who have taken an FLE course achieve a significantly greater increase in knowledge of the concepts covered in the course curriculum than students who have not taken such a course (at a .001 level using a one-directional t test). It also showed a significant gain in positive attitude toward themselves by students who had taken the course, as compared with students who had not taken the course (at the .05 level using a one-directional t test). However, there was no significant change in

attitudes toward family either by students who had taken the course or by those who had not.

The foremost implication of the study suggested by the results is that FLE at the secondary level acquaints students with the developmental aspects of human growth and development, sexual functioning, dating, mate selection, marital interaction and familial relations. In addition, it may serve as a means whereby the student acquires a more realistic and positive self-image.

Crosby comments on this latter statement (1971, p. 93):

This study may have far reaching implications and consequences for family life educators. The impact of (this) hypothesis is the suggestion borne out by this research, that there is a positive relationship between family life education and an adolescent's self-image.

Robert C. Wallace (1970) did a study to investigate the differences between co-educational and single sex groupings of high school students in: (a) student acquisition of sex knowledge; (b) verbal interaction among students in a student-centered classroom environment in a unit of sex education; and (c) student attitudes toward sex-related topics and sex education.

The study was conducted during a two week unit of sex education with three senior Human Biology classes (67 students) in Oak Lawn, Illinois, a small, predominantly

lower class suburb of Chicago. For testing purposes, one class was taken intact as a co-educational unit: females and males in the other two classes were separated into two single sex groups. The three groups were comparable in age and I.Q. ranges. Acquisition of sex knowledge was measured by pre-, post- and delayed post-tests using the Sex Knowledge Inventory - Form Y and Venereal Disease Knowledge Inventory - Experimental Edition (Family Life Publications Inc.). The data were analysed by t tests.

Verbal interaction was analysed by the Flanders Interaction System. This involved transcripts of group sessions categorized by Flanders typology of teacher "indirect influences" (e.g. praise, questioning) and "direct influences" (e.g. lecturing and criticizing); two categories of "student talk" (response and initiation); and one neutral category of noise or confusion. To check reliability of the categorization process, three raters categorized the time periods with an agreement of 93.97. For the purposes of this study, the teacher-investigator attempted to keep his influence, both direct and indirect, at a minimum in order to examine student interaction more fully and achieve a student-centered environment. A chi-square test was used to compare the amounts of verbal interaction between the three groups.

Students' attitudes were measured by both a semantic differential, composed of ten bi-polar adjectives along a seven-point rating scale, and an open ended-questionnaire developed by Wallace. The semantic differential data was analysed by product moment correlation, factor analysis and Varimax factor rotation. The questionnaire data were analysed by a t test.

The results showed the co-educational group producing a greater mean change on the Sex Knowledge Inventory and Venereal Disease Inventory Form, pre-test to post-test than did the single sex groups, but these changes were not statistically significant. No significant differences were found between the single-sex groups. The co-educational groups did retain a greater mean change on the delayed post-test than did the single-sex groups, but not significantly so.

Analysis of the Flanders Interaction System showed the co-educational group had significantly more verbal student talk (S.T.=.74) than female (S.T.=.57) or male (S.T.=.58) single-sex groups. There was no significant difference between single-sex groups.

Analysis of semantic differential data for the co-educational group showed significantly greater mean change from pre- to post-test I on eight of the nine concepts. In all cases the changes were toward the positive or liberal

end of the scale. The female single-sex group retained more positive or liberal changes than the male or co-educational groups. The data from the questionnaire showed no significant results for any group combination.

The conclusions were that in a student-centered classroom environment, senior high school students in a co-educational group do not learn significantly more factual knowledge, but they do have significantly more verbal interaction. In addition, they have a more liberal change of attitudes during a sex education unit of study than students in single-sex groups. There are no significant differences between all-female and all-male classes with regard to acquisition of factual knowledge, verbal interaction or attitude changes. However, an all-female class does retain a liberal change in attitudes, more so than an all-male class.

Edward E. Coates (1970) did a study on the effects of the acquisition of knowledge on attitudes. The purposes of this study were: (a) to determine the extent to which specific factual information about reproduction could be acquired by an experimental group as compared to a control group; (b) to determine how knowledge about human reproduction affects students' sex-related attitudes; and (c) to determine how this increase in knowledge affects student-parent sex related dialogue.

Campbell and Stanley's Non-Equivalent Control Group Design (1963, pp. 28-54) was used. The Maturation and Reproduction Inventory of Factual Knowledge (MARIFAK) developed by Coates was used to measure sex knowledge and a semantic differential scale was used to measure change in attitudes. These instruments were administered to the experimental and control groups of fifth and sixth grade students both before and after experimental instruction in sex education.

The experimental group received a six week program based on typical sex education curriculum guides, and on recommendations of the American Association of Health, Physical Education and Recreation. These were developed in consultation with personnel of Oak Ridge, Tennessee public school. The program was presented by regular classroom teachers to five randomly selected intact classes (N=148) as part of their health and science program. Five additional randomly selected classes (N=174) were utilized as the control group. The effect of the experimental sex education program on student-parent sex related dialogue was evaluated by a questionnaire. Data from the MARIFAK and the semantic differential were subjected to an analysis of covariance because: (a) intact classes and not individuals were the treatment units, and (b) possible pretest-posttest regression, as well as gain were investigated. These conditions

required the utilization of covariant analysis. A chi-square was performed on the parent questionnaire.

The results showed that a significant increase in knowledge (beyond the .01 level) occurred in the experimental group as compared to a negligible increase by the control group. The results of the attitude tests showed several significant changes in separate male and female scores within specific concepts by the experimental group as compared to the control group. The parent questionnaires showed a significant increase (beyond the .05 level) in sex-related dialogue with children who were in the experimental groups.

The study showed that fifth and sixth grade students demonstrated a capability for learning basic information about human maturation and reproduction. It seems that this information could be acquired with no apparent effect on sex-related attitudes. No negative attitudes, as measured by the semantic differential, were associated with a gain in sex-related knowledge. These findings provide empirical evidence for rejecting some of the arguments that state that sex education precipitates negative attitudes.

The lack of attitude modification attributable to informational gain points out the need for innovative approaches to sex education curricula if they are to achieve attitudinal objectives (Coates, 1970, p. 130).

Coates' study is limited in the following way. His method of measurement of the evaluative component within attitudes is dissipated by the fact that he included the potency and activity components as well.

A study done by Carton and Carton (1970) attempted to measure changes in attitude concerning specific aspects of sexuality of ten children ages ten and eleven, and their parents, after participation in a planned sex education program. The program was based on Living One's Human Sexuality (Calderwood 1970).

The sample consisted of ten children who were not selected for any special characteristics. The researchers referred to them as a convenience sample. There were only eight parent pairs, since there were two sisters and two brothers in the children's group. The families were all white, middle class, suburban residents. The criteria for participation was attendance for the parents and parental permission for the children.

The one group pretest-posttest 'pre-experimental' design was utilized. A Likert-type rating scale was constructed to measure attitudes of the children and a Likert-type rating scale was constructed to measure attitude of parents.

This study showed a significant change in attitude by both parents and students at the .01 level. They attributed the change to the methods used in the program such as discussions of emotional topics with the aid of audio-visual materials, encouragement of parent-child communication, and provision of opportunities for open, candid discussion through small group meetings. The limitations of the Carton and Carton study were the size and narrowness of the sample.

The results of the above studies differ on the relationship of acquisition of knowledge and modification of attitude, and as a result do not allow for confident generalizations about this relationship. The next chapter describes the development of a curriculum for the purposes of clarifying the relationship.

CHAPTER III

THE FAMILY LIFE EDUCATION PROGRAM
(ELEMENTARY SCHOOL, LEVEL SIX)
AT JEWISH FAMILY SERVICES IN MONTREAL

This chapter describes the history, the curriculum and its implementation, and the personnel involved in the FLE program being studied presently.

History of the Family Life Education Department

In the late 1960's Jewish Family Services (JFS) in Montreal, like similar family agencies, Mental Hygiene Institute and Catholic Family Services, became increasingly concerned with what they considered were growing symptoms of individual and family instability.

Although a form of training seems to be available for most roles one assumes in life, the outstanding exception is the lack of training for the familial roles into which one is thrust.

The present North American lifestyle reflects a growing struggle with the attempt to fulfill one's roles in a way that is both satisfying and effective. How does one begin to think in terms of training for that which has been assumed to come naturally?

For a period of two years Jewish Family Services investigated other agencies that had already developed educational or non-clinical programs aimed at counteracting some of the problems occurring in families. A staff person was sent for additional training in this area and a few pilot projects with groups focusing on marital relations and child rearing were formed. By 1969, Jewish Family Services officially launched this new service.

A full time staff person (supervisory level) was hired to develop a program, train personnel and assume the administrative responsibilities of the department.

The first step for the newly formed department was to hire a core of potential Family Life Educators. A two year training program was developed. It consisted of a cognitive aspect, dealing with human development, the Jewish component of the program and leadership skills. The affective aspect involved participation in sensitivity training to develop self-awareness and provide an opportunity for the leaders' own growth. The third aspect was an internship which provided the leaders with an opportunity to test out the new skills they acquired.

The first programs were designed for adult groups and included a variety of topics: marital relationships, child rearing, adoptive parents and Jewish identity.

Although the first programs were aimed at the adult population, it became clear at an early stage that to effect prevention of individual and family instability it was necessary to get to the children. The most obvious resource for working with children was at the schools. As Jewish Family Services is a private agency under the umbrella of Allied Jewish Community Services, its mandate was to serve the Jewish Day Schools.

The school program started with levels six and seven in the four branches of the United Talmud Torah, a Jewish Day School System in Montreal.

By 1971 a core of ten family life educators was trained and was available to lead programs.

Initial publicity to promote the program included television appearances by the supervisor, newspaper articles and demonstrations of discussions. The response was slow in the first years as people were somewhat skeptical of this new technique. They thought they would be required to divulge private information about themselves and their families in order to participate. Several successful programs were completed and the department gained credibility. The concept of Family Life Education was gaining ground and this was and is reflected in the daily newspapers which often feature such programs (Lifestyle section - Montreal Star, summer 1972; Montreal Gazette, summer 1972). Jewish Schools other than

the Talmud Torah made requests for the programs as well.

For the 1973-74 season, the department has grown to service approximately twenty adult groups which will focus on the general areas of concern but with more emphasis on issues about aging; groups that will involve teacher training as well as staff development programs for three of the other constituent agencies of Allied Jewish Community Services; groups operated in conjunction with the Y.M.-Y.W.H.A.'s of Montreal; and eight schools, level four to level seven (approximately sixty groups). The staff now includes a supervisor, an administrative assistant and twenty Family Life Educators.

Program Objectives

The program was designed to help family members learn to do a better job in their relationships with each other. It is also directed at helping young people understand themselves in the light of preparing for their own future.

The purpose of the agency's program is generally stated as strengthening and enriching Jewish Family Life and preventing family breakdown. The emphasis is on improving interpersonal skills (Rashkovan, 1973).

The goals of the total program focus on helping individuals to develop increased awareness, sensitivity, trust, self-confidence, spontaneity and intimacy.

More specifically stated, the goals are:

1. To increase the participants' knowledge in the field of human relations and personality development.
2. To alleviate anxieties in relation to human interaction.
3. To develop a wider range of choices in problem solving and decision making situations.
4. To promote awareness of and support an individual's potential in breaking an unsatisfactory pattern of behaviour.
5. To sensitize participants to the behavioural patterns of people with whom they interact.
6. To cultivate a sense of self-confidence.
7. To reinforce a sense of belonging to the Jewish community.

The school program encompasses the same general aims but is a more structured program and its objectives are based on the theory of curriculum as outlined by Hilda Taba in Curriculum Development: Theory and Practice, that is, to use educational objectives for both the cognitive and affective aspects of the program. The method of stating objectives in this way assists in evaluating the program as well.

Taba (1962) states that objectives exist at two levels. One level is that of the broad aims of education such as to transmit culture, to reconstruct society, or to provide for the fullest development of the individual. These aims establish what might be called the philosophical aspect. Taba

considers these an insufficient guide for making the more specific decisions about curriculum development such as what content or which learning experiences to select or how to organize them. "The general aims can be satisfied only if individuals acquire certain knowledge, skills, techniques and attitudes" (Taba, 1962, p. 196).

These aims require a more specific platform of goals and are usually referred to as educational objectives. To illustrate the above, a general aim would be to begin to develop a sexual identity; an educational objective would be to understand the content material.

The general aims and goals of the level six program are to assist the student

1. to develop emotional independence;
2. to develop a sexual identity;
3. to build a value system;
4. to develop skills in decision making.

The educational objectives are broken down into two categories: Academic Skills and Social Skills.

The Academic Skills objectives include:

1. listening;
2. comprehending material (vocabulary, process of puberty, emotions);
3. presenting information - orally and in written form;

4. drawing conclusions;
5. transferring knowledge to new situations.

The Social Skills objectives include:

1. participating in a discussion;
2. working in a group - sharing information;
3. asking appropriate questions;
4. role playing.

These educational objectives are based on the level of development of the level six student and are culled from a variety of curricula material: Family Life and Sex Education, Esther D. Schulz and Sally R. Williams; Becoming a Person, Rev. Walter Imbierski, Editor; Family Living and Sex Education: Instructors Manual, Moreland and Latchford.

To meet the stated objectives, specific information about family life and sexuality is transmitted and discussion is used extensively to provide an opportunity for the student to express his feelings and attitudes about the new information he has received.

Development of the Curriculum

The curriculum for the level six program, Understanding Ourselves (Appendix A), was developed by the supervisor of the FLE department in conjunction with the family life educators who were to execute the program.

The concept of curriculum development used is based on the theory of curriculum development as outlined by Hilda Taba (1962). Behavioural objectives are clearly stated at the outset and are divided into the categories of academic skills and social skills. They are postulated on the basis of previous cognitive learning as well as development of such skills as presenting information in written and oral form, and working in groups. Assumptions are made on the physical, emotional and social stage of development of the students on the basis of the literature describing this stage (Baldwin 1967, Havighurst 1971).

The content aspect of the curriculum is culled from three major sources: Family Life and Sex Education: Curriculum and Instruction, Esther D. Schulz and Sally R. Williams; Becoming a Person Program, Rev. Walter Imbierski, General Editor; Instructor's Manual accompanying the series of films Family Living and Sex Education, Moreland and Latchford.

The content for this level is concerned with three areas: relationships (familial and peer), puberty and reproduction. The program starts with a focus on the family and then moves on to focus on the individual.

The written curriculum acts merely as a guide and the family life educator can develop it however she feels will be most effective for her specific group.

During the last four years that the program has been in existence, the classes have been split into smaller groups to provide each student with a greater opportunity to participate. The dilemma has always been whether to mix the sexes or whether to separate them.

The curriculum guides are divided on this issue. The general argument for mixing boys and girls suggests that because the student lives in a male-female world they should learn about their development and relationships in a male-female environment from the outset. Research, however, has shown that the mixtures of the sexes in the pre-pubic and early pubic stages inhibits the full participation of the students in a frank discussion (SIECUS 1972, p. 12).

As the FLE programs in the schools are an eight week, one hour per week program, the conclusion was to mix the sexes for level four (ten years old) and to separate the sexes for levels 5, 6 and 7 (11-13 years old). It was felt that the eight hour period was too short a time to overcome the added variable of the mixture of the sexes in order to accomplish the objectives.

Implementation of the Curriculum

The methods for implementing the program include the preparation of factual information which is transmitted either

through media or lecturette. Diagrams, graphs and pictures are also used to transmit the information clearly. Planned activities such as art work, games projects and exercises are used to supplement the major technique in the program - the open ended discussion.

As stated by Edgar E. Stern (1969, p. 40):

Family Life education works primarily with the cognitive component of behavioural and emotional functioning. Its techniques involve discussions and didactic teaching around ideas, values and behavioural patterns of the family as a social system and the consequences of these on individual functioning as well as more behaviouristic material concerning interpersonal functioning within the family unit. Some groups, particularly youngsters also verge off into areas that are more individual, such as questions of smoking, drinking and drugs.

The open ended discussion allows the student to guide the direction and focus of the discussion. In this way it becomes a place where the student can speak about concerns that are most meaningful to him. The role of the family life educator is to be the catalyst, to spark discussion, to encourage participants to express their feelings, and generally to be the facilitator.

The group experience offers the participant an opportunity to look at alternatives in problem solving. It demonstrates the importance of sharing and trusting in problem solving. It encourages the openness and diversity

of opinions as a means of exercising options. Because the process involved in group discussion, that is, how people communicate and relate, inhibiting factors and comfort factors are pointed out to bring about learning. It brings about an awareness that the process is often as healthy as the solution. The group also helps to build ego strength in that it provides the opportunity to share common problems and it develops a closeness amongst participants that brings about a willingness to test out new attitudes.

This kind of group differs from a therapeutic group in that it deals with global issues about which the students feel a general and common concern, rather than dealing with identified problems of social and psychological dysfunction.

The educational group is described in Promoting Mental Health Through Family Life Education by Spoon and Southwick (1972, p. 81):

For the purposes of this program, education is directed towards the conscious aspects of the individual personality and behaviour, with the educational techniques working on conscious beliefs and motives during the present and future. This method makes an effort to explore and work with problems in living to the extent that the why of a person's behaviour is conscious and directly related to the present situation. The educational effort emphasizes the normal aspects of life to allay fears and anxieties that arise from not knowing that the crisis period

being experienced is a part of everyone's normal life cycle. The educator does not take responsibility for the participant but leaves that to the individual and the group. Efforts are not made to explore unconscious motives and the past life of participants.

The family life educator attempts to involve the student to the greatest possible extent, emphasizing the student's responsibility for his own learning. The educator then acts mainly as a resource person and as a stimulator to independent thinking by the student.

The American Association of Sex Educators and Counsellors (AASEC), in their booklet The Professional Training and Preparation of Sex Educators (1972), states that sex education is a delicate task that is all too easily mismanaged. They provide a list of criteria to be included in a profile of what they consider a good sex educator. The list includes the following:

A good sex educator should have:

1. a healthy attitude toward his own sexuality;
2. the quality of empathy which is interpreted as sensitivity to attitudes, values and feeling of other persons;
3. sufficient intelligence to understand clearly material about human personality which comes from a variety of fields of knowledge and he or she should be able to co-ordinate them coherently in the teaching;

4. the ability to communicate warmly and effectively both verbally and non-verbally with the students,

Other qualities include respect and concern for others, confidentiality, ability to create a supporting climate in the classroom, and the willingness to co-operate with professional colleagues.

It is recognized that some of these qualities are innate while others can be developed with training and experience. It is also considered ideal for potential educators to undergo some process of selection and screening.

Personnel Development

With the above criteria in mind, Jewish Family Services recruited a group of family life educators. The group consists of middle class and upper middle class women who have varied academic and working experience.

For the most part they have university training which ranges from a few courses to diplomas and graduate degrees. There are nurses, laboratory and x-ray technicians, office personnel, teachers and social workers. In addition to the formal training, a large majority have had training through the Mental Hygiene Institute in leading discussions. Several of the educators have had previous discussion leading experience with drug education groups.

Each candidate was interviewed and selected on the criteria stated previously. As Jewish Family Services serve the Jewish Community, there was the added criterion of Jewish commitment.

Since the inception of the program, there have been three separate stages of recruitment and training of educators to arrive at the present complement of twenty. The first two groups underwent a two year training program, that is, once per week for nine months of each year, plus two week-end sessions each year.

The criteria for the third group included previous training (Mental Hygiene Institute or Applied Social Science Major - Sir George Williams University) plus previous group leadership experience. With this background the training was in actuality an orientation program to the agency. That program was an immersion program that ran from 9:30 A.M. to 3:30 P.M. for ten successive days, omitting the week-end.

The aims of both training programs were:

- to provide the educator with basic knowledge in the area of individual, family and community development;
- to develop a self-awareness and the skills to deal effectively with their own feelings and attitudes;
- to develop skills in helping group participants clarify their own values and be accepting of differences;

- - to develop communication skills so they can interact effectively and comfortably with their group participants.

The training program was divided into three specific content areas which were studied concurrently, both cognitively and affectively.

1. Orientation: This part of the training program provided background information on the local Jewish community (a demographic picture), the structure of existing local services, the services and philosophical orientation of the Jewish Family Services, and the policies and concepts related to Family Life Education.

2. The Family and the Individual in the Community: This discussion related to the individual's development - physical, emotional and social. It then looked at the individual in the family, the Jewish family within the larger society, stresses and anxieties confronting the modern Jewish family.

3. Group Process: This involved (a) group dynamics, and (b) group development and personal growth. The program provided opportunities for applying and developing group leadership techniques within the training group itself. Resource people, tapes of group sessions, educational films, and a selected bibliography were also utilized in the training sessions. Sensitivity training was very much a

part of the training program and the National Training Laboratory (NTL) leadership model is the basis of the orientation of leadership style.

4. Internship:.. This aspect involved actual experience within the various types of groups within the department. As a supplement to the initial training program, the FLE educator is involved on an on-going basis with individual and/or group supervision and the department supplies in-service training once per month. The aim is that through supervision and staff development programs the growth of the family life educator will continue and the quality of the program will be ensured.

CHAPTER IV

EVALUATION PROCEDURES

This chapter states the hypotheses of the present study and describes the evaluation procedures.

Objectives

A general belief that is upheld in Family Life Education, as elaborated upon earlier in this thesis, is that the family in one form or another is here to stay. However, there is an increasing concern about growing instability within the individual and family. The objectives of the FLE program described in Chapter III address themselves to preventing this instability through an educative process. The process involves transmitting factual information with a view to affecting attitudes involved with that information. Following Coates (1970), knowledge of factual information is measured by the MARIFAK and the attitude is measured by the semantic differential scale (see Chapter II).

Three major hypotheses, each having four parts, follow from the program objectives:

H-1 The JFS, FLE school program contributes to an acquisition of factual information about puberty and reproduction.

- H-1A The JFS, FLE students produce a greater acquisition of factual information about puberty and reproduction than do a control group of students.
- H-1B The JFS, FLE female students produce a greater acquisition of factual information about puberty and reproduction than do a control group of females.
- H-1C The JFS, FLE male students show a greater acquisition of factual information about puberty and reproduction than do a control group of males.
- H-1D The JFS, FLE female students show a greater acquisition of factual knowledge about puberty and reproduction than the JFS, FLE male students.
- H-2 The JFS, FLE school program produces an increase in semantic differential scores in the specifically stated concepts.
- H-2A The JFS, FLE students show a greater increase in attitudinal scores than do a control group of students.
- H-2B The JFS, FLE females show a greater increase in attitudinal scores than do a control group of females.
- H-2C The JFS, FLE-males show a greater increase in attitudinal scores than do a control group of males.
- H-2D JFS, FLE females show a greater increase in semantic differential scores than do the JFS, FLE males.
- H-3 There is a correlation between the acquisition of this knowledge and the change in attitude toward the specifically related concepts.

- H-3A There is a greater correlation between the acquisition of this knowledge and change in attitude toward the related concepts for the JFS, FLE students as compared to the control students.
- H-3B There is a greater correlation between the acquisition of this factual knowledge and change in attitude toward related concepts for the JFS, FLE females as compared to the control females.
- H-3C There is a greater correlation between the acquisition of this factual information and change in attitude toward related concepts for the JFS, FLE males as compared to the control males.
- H-3D There is a greater correlation between the acquisition of this factual information and change in attitude toward related concepts for the JFS, FLE females as compared to the JFS, FLE males.

Population and Sample

The FLE program being evaluated is one designed for elementary school level six, eleven and twelve year old boys and girls. The experimental group consisted of eight classes, each divided by sex into two groups, thus making sixteen groups averaging nine students per group.

The socio-economic range within the school is low-middle to upper-middle class, with the majority of students in the middle range.

The school system which houses these students is a traditional Jewish one, but this does not necessarily reflect

the orientation of the families who send their children to the school.

However, the concept of Jewish education is of primary value to these families. In many instances, attendance in this particular Jewish School System is a matter of geographical convenience and lack of choice within a given location: e.g., St. Laurent and Laval. There are public schools within the given locations, which makes the selection of the private Jewish School a deliberate choice.

The control group consists of four classes of mixed sex, averaging twenty-five students. These students attend a Jewish School System as well, however the school is a secular and not a religious one. In most instances the school is a deliberate choice and some children travel fair distances (10-12 miles) daily.

Both the experimental and control groups have received some informal sex information at the fifth level of school.

Design

An experimental and a control group were used in the experiment. Two questionnaires were administered prior to and after each program. These occurred at an eight week interval.

In the pre-test phase the attitude test, semantic

differential (Appendix B), was administered prior to the factual information test, the MARIFAK (Appendix C), and this was reversed in the post-test phase. The rationale for this procedure is to minimize bias being introduced by the MARIFAK content in the pre-test phase, and to maximize the effect of the experimental treatment upon attitudes in the post-test phase.

The pre-test phase was done in two stages, because the testing was time-consuming and would take away from teaching time in the FLE program. As a result, the semantic differential was administered within the week prior to the commencement of the eight week program, and the MARIFAK was administered on the first day of the program. This procedure was reversed on the eighth and last week of the program. In both instances the tests were administered by the Family Life Educator and not the classroom teacher.

The limits of the design include the following: although the population of the experimental group and control group share many things in common - age, grade, socio-economic level, private Jewish schooling - they are from different schools. The implication here is that their previous experiences may tend to be different. Because the groups are from the middle to upper-middle class portion of the general population, the generalizability of the conclusions

of the study may be somewhat limited.

As in other experiments that involve testing, the tests themselves may affect the validity by sensitizing the subjects to the information and attitudes specified in the tests. In addition, in the schools where these tests were administered the curriculum is highly accelerated because of the heavy subject content (3-4 languages) and testing is particularly anxiety-producing.

Another area that may have some influence is the home. Parents of children who attend these schools are generally very involved with their children's education. In a program that involves attitudes and value development, there is no doubt that parents are involved. Previous experience in the implementation of this program has shown the author, through parent feedback, that the program generates a great deal of discussion in the home during the course of the eight weeks. This study, however, does not provide for the evaluation of parental, familial or peer involvement or influence.

A major limitation in the research design involves the study of the relationship between the gain of factual information and attitude change. While a lack of significant correlation between the two is conclusive of no relationship, a significant correlation is ambiguous evidence. That is, a high positive correlation could mean (a) a gain

in knowledge causes a change in attitude; (b) a change in attitude causes the gain in knowledge; (c) there is an unknown third variable.

Lastly, the study is limited by the fact, that the experimental and control schools are not randomly selected but pay JFS for this FLE service.

Data and Instrumentation

The tests chosen for this experiment are the Maturation and Reproduction Inventory of Factual Knowledge (MARIFAK) for testing the acquisition of knowledge, and a semantic differential for measuring change in attitude. Both tests were developed by Edward Coates (1970) for research purposes.

The MARIFAK is a multiple choice test whose items were drawn from curriculum guides, textual and reference materials, and audio-visual materials. An item analysis was performed on the original items chosen for the test and those demonstrating the highest discrimination value were ultimately chosen for the final test.

These items can be broken down into categories of maturation, male and female sexual development, conception and inheritance. These items all relate to the content of the JFS, level six, FLE program.

The content validity was assured by the expert opinion of a committee of professionals. Selection of items for high indices of discrimination, as per the item analysis procedure used in constructing the MARIFAK, tended to increase test validity. Coates found a reliability coefficient of .83 for the split half method and the Kuder-Richardson, (Ebel, 1965, pp. 314-318) formula in a five per cent random sampling drawn from the pre-test and post-test administration of the MARIFAK.

The semantic differential consists of a number of graphic rating scales with bi-polar or opposing adjectives at each end. These scales set up a semantic space. Within the semantic space there are three distinct dimensions of meaning: evaluation, potency and activity.

The semantic differential developed by Coates was constructed according to the recommendations of Osgood, Suci and Tannenbaum (1957, pp. 76-124). The concepts chosen were selected because they are all related to human sexuality, they are familiar to the subjects, and normative data exists for each concept (Jenkins, Russel and Suci, 1968, pp. 668-699). Here, too, the concepts chosen by Coates directly relate to the FLE program.

For the purpose of this study only the evaluative dimensions will be tallied. This was done in order to avoid

the extraneous variability as in the Coates study, which was caused by a summing of the unrelated semantic dimensions.

Statistical Techniques

Multiple t tests (Downie and Heath, 1970, p. 178) were applied to pre-test scores of both the knowledge test and the attitudes, to determine whether there was significant difference between the experimental group and control group.

An analysis of variance was employed for the gain scores and post-test scores. The two independent variables were sex and treatment; the four dependent variables were information scores on the MARIFAK, attitude sub-scores "ideal self," "myself" and "total" attitude scores from the semantic differential.

For H-1 (A to D) and H-2 (A to D) the data analyzed were from total experimental group as compared to total control group, experimental girls to control girls, experimental boys to control boys, experimental girls to experimental boys, and control girls to control boys.

For H-3 (A to D) a Pearson r (Downie, Heath, 1970, p. 238) was employed to determine a correlation between information gain and attitude change. It was employed to determine the relationship between total knowledge gain to total attitude, and to attitudes of "ideal Self" and "myself." The level of significance for this study was .05.

CHAPTER V

RESULTS

This chapter describes the results of the comparison of information and attitude gain between the experimental and control groups, and between the sexes. In addition, it describes the correlation between the two, when and if such correlation occurs.

Analysis of MARIFAK Data

The gain in knowledge was assessed by the comparison of pre-test and post-test scores resulting from the administration of the MARIFAK.

Multiple t tests (Downie, Heath, 1970, p. 224) were applied to the pre-test scores and an analysis of variance (Downie, Heath, 1970, p. 215) was applied to the post-test and gain scores. A computer was utilized.

Mean scores derived from this testing are displayed in Table 1.

Table 1

MARIFAK Mean Scores
Grouped by Treatment

GROUP	SEX	NO. OF CASES	PRE-TEST MEAN	POST-TEST MEAN
Exper.	Female	45	24.31	29.73
Exper.	Male	59	18.72	26.49
Exper.	TOTAL	104	21.14	27.89
Control	Female	36	26.05	29.02
Control	Male	26	24.07	26.11
Control	TOTAL	62	25.22	27.80

Out of a possible 48 items the pre-test scores show 24.31; 18.72; 26.05 and 24.07, for experimental females, experimental males, control females and control males respectively. The scores indicate that at the pre-test level, three groups answered at least half of the questions correctly with the fourth group responding correctly to just under half of the items.

The control group had produced consistently higher scores than the experimental group at the pre-test level, somewhat limiting the comparability of the control group.

In the pre-test mean scores (Table 2) the control group (females, males and total) are higher than the experimental group (female, male and total). There is a significant difference between the experimental males and control males and in the total experimental group and the total control groups.

Table 2

Multiple t Tests
for MARIFAK Pre-test Means Scores
Grouped by Sex

Sex	Group	No. of Cases	Mean	Standard Deviation	F Value	Prob.	T Value	Prob.
F	Exp.	45	24.31	7.16	1.61	.15	-1.19*	.24
	Cont.	36	26.06	5.65				
M	Exp.	59	18.73	7.41	1.17	.69	-3.13*	.00
	Cont.	26	24.08	6.86				
Tot.	Exp.	104	21.14	7.78	1.57	.06	-3.72**	.00
	Cont.	62	25.23	6.21				

Note.- When F was $< .05$ a separate variance estimate was used for subsequent t tests. When F $> .05$ pooled variance estimates were used for subsequent t tests (Nie, Bent, Hull, 1970, pp. 244-316).

* pooled variance

** separate variance

The pre-test and post-test mean scores for the females in both the experimental groups and control groups are higher than the experimental male and control male groups. This is consistent with the particular stage of development of the groups involved (Baldwin 1968, Havighurst 1971); that is, that females at this stage develop more rapidly than males.

The post-test mean scores (Table 3) show that the experimental group (female, male and total) are higher than the control group (female, male and total). The post-test scores also indicate a consistent reduction of the standard deviation in the experimental group (female, male and total) of about one point.

Table 3

MARIFAK Post Mean Scores Grouped by Treatment

Sex	Group	No. of Cases	Mean	Standard Deviation
F	Exp.	45	29.73	6.74*
	Cont.	36	29.03	6.30*
M	Exp.	59	26.49	6.58*
	Cont.	26	26.12	6.56*
Total	Exp.	104	27.89	6.81*
	Cont.	62	27.81	6.52*

* 95% Confidence Interval for mean.

An analysis of variance on post scores (Table 4) shows no significant difference between the experimental male group and control male group, or between the experimental-total group and control total group. This is contrasted with the pre-test scores which showed a significant difference between the experimental and control groups. The females remained approximately the same in the post-test scores, showing no significant difference.

Table 4

Analysis of Variance for
MARIFAK Post Mean Scores Grouped by Sex

Group	Source	df	Sum of squares	Mean Squares	F Ratio	Prob
Females	Between GPS	1	9.96	9.96	.23	.63
	Within GPS	79	3387.77	42.88		
	Total	80	3397.73			
Males	Between GPS	1	2.55	2.55	.06	.81
	Within GPS	83	3587.40	43.22		
	Total	84	3589.95	43.22		
Total	Between GPS	1	.30	.30	.01	.94
	Within GPS	164	7371.51	44.95		
	Total	165	7371.81			

The gain scores from pre-test to post-test (Table 5) show that the experimental group had a mean gain of 6.750 with a standard deviation of 5.189. The control group had a mean gain score of 2.806 with a standard deviation of 3.6149. This seems to indicate that the treatment had a greater effect on the experimental group than merely exposure to the test and the maturation process, which could account for the minimal increase in the control group.

Table 5

MARIFAK Gain Scores Grouped by Treatment

Group	Sex	No. of Cases	Gain Score	Standard Deviation
Exper.	F	45	5.42	3.88
Exper.	M	59	7.76	5.83
Exper.	Tot.	104	6.75	5.19
Control	F	36	2.97	3.59
Control	M	26	2.04	3.65
Control	Tot.	62	2.58	3.61

An analysis of variance of the gain scores show a significant increase in knowledge on the part of the experimental group (female, male and total), see Table 6.

Table 6

Analysis of Variance
MARIFAK Gain Scores Grouped by Sex

Group	Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob
Female	Between GPS	1	120.05	120.05	8.53	.00*
	Within GPS	1	1111.95			
	Total		1232.00			
Male	Between GPS	1	591.35	591.35	21.29	.00*
	Within GPS		2305.64	27.78		
	Total		2896.98			
Total	Between GPS	1	675.23	675.23	31.01	.00*
	Within GPS		3570.60	21.77		
	Total		4245.83			

* $p < .05$

As shown earlier, the experimental females scored higher than the experimental males in both the pre-tests and the post-tests. However, the experimental males made greater gains (Table 7).

Table 7

Analysis of Variance for
MARIFAK Gain Scores for
Experimental Females and Males

Source	df	Sum, of Squares	Mean Squares	F Ratio	Prob.
Between GPS	1	139.84	139.84	5.42	.02*
Within GPS	102	2633.66	25.82		
Total	103	2773.50			

* $p < .05$

Analysis of Attitude Data

Changes in attitude were assessed through the comparison of pre-test and post-test scores derived from the semantic differential. Multiple t tests were applied to pre-test scores and an analysis of variance to post-test and gain scores.

The test had a 5 point scale recommended for children (Osgood, Suci, Tanhenbaum, 1957, pp. 76-124). A score of 3 indicates a "neutral" evaluation. As the numerical value increases above 3, a more positive attitude is indicated and conversely, a lower numerical value indicates unfavorable attitudes.

To avoid dissipating the results of the attitude test, as in Coates' study (1970, p. 92), only 5 of the original

bi-polar adjectives were enumerated: wise-foolish, strong-weak, difficult-easy, superior-inferior, bad-good. The sum of scores for these 5 pairs of adjectives represent only the "evaluation" dimension of meaning and it is this dimension which is analogous to attitude, the concept being quantified.

In keeping with the general objectives of FLE, that is, to develop a sense of identity and, more specifically, a healthy self image, the 3 attitude scores that were quantified were "ideal self," "myself" and the "total" attitudes score.

The gain in attitude was assessed by the comparison of pre-test and post-test attitude scores, in the three areas mentioned above, resulting from the administration of a semantic differential. Mean scores derived from this testing are displayed in Table 8.

Table 8

Semantic Differential
Attitude Mean Scores
Grouped by Treatment

Group	Sex	No. of Cases	PRE-TEST MEANS			POST-TEST MEANS		
			Ideal Self	Myself	Total	Ideal Self	Myself	Total
Exper.	F	45	19.57	18.96	184.76	21.09	19.76	195.38
Exper.	M	59	20.59	18.68	191.59	21.10	20.63	193.44
Exper.	Tot.	104	20.15	18.80	182.96	21.10	20.25	194.28
Cont.	F	36	20.92	19.03	193.36	20.86	18.11	188.03
Cont.	M	26	21.42	19.69	191.54	21.54	19.58	186.73
Cont.	Tot.	62	21.13	19.31	192.60	21.15	18.73	187.48

The mean scores for the concept "ideal self" were consistently higher than the scores for the concept "myself" in the pre-test and post-test by all groups. The mean scores for the concepts "ideal self" and "myself" were higher for the males than the females in all cases except in the pre-test for the experimental group and the concept "myself".

In all instances in the pre-test scores (Table 9) the experimental group scored lower than the control group. For the concept "ideal self" and for the "total" score, the differences were significant at or beyond the .05 level for the females; for the "total" score they were significantly lower than the .05 level for the males; and for the "ideal self" and "total" score they were significantly beyond the .05 level for the total group. This could indicate that there were some basic attitude differences in the homes and schools of the populations involved. Part of this could possibly be explained by some of the differences outlined earlier under the section on Population and Sample, in Chapter IV.

The scores did reverse in the post-test. This was true with the exception being the "ideal self" which remained higher for the control females over the experimental females, but not significantly so as in the pre-test scores (Table 10).

The gain scores for attitude (Table 11) show a mean gain for the concept "ideal self" as .94 for the experimental group, as opposed to .02 for the control group. For the concept "myself" there was a gain of 1.45 for the experimental group, as opposed to -.58 for the control group. The total mean gain shows 11.32 for the experimental group and a decrease of -5.11 for the control group.

Table 9

Multiple t Tests
Attitude Pre-Test Scores Grouped by Concepts

Concept	Group	Sex	No. of Cases	Mean	Standard Deviation	F Value	Prob.	T Value	Prob.
Ideal	Exp.	F	45	19.58	2.82	1.21	.56	-2.21	.03*
	Cont.	F	36	20.92	2.56				
	Exp.	M	59	20.59	2.91	1.04	.88	-1.20	.23
	Cont.	M	26	21.42	2.97				
Self	Exp.	Tot.	104	20.15	2.90	1.13	.60	-2.14	.03*
	Cont.	Tot.	62	21.13	2.73				
M	Exp.	F	45	18.96	2.80	1.06	.86	-.12	.90
	Cont.	F	36	19.03	2.72				
	Exp.	M	59	18.68	3.82	1.44	.32	-1.18	.24
	Cont.	M	26	19.69	3.19				
I	Exp.	Tot.	104	18.80	3.40	1.36	.19	-.98	.33
	Cont.	Tot.	62	19.31	2.92				
T	Exp.	F	45	184.76	16.00	1.29	.42	-2.27	.03*
	Cont.	F	36	193.36	18.16				
	Exp.	M	59	181.59	16.28	1.01	1.02	-2.60	.01*
	Cont.	M	26	191.54	16.23				
a	Exp.	Tot.	104	182.96	16.16	1.14	.55	-3.62	.00*
	Cont.	Tot.	62	192.50	17.26				

Note.- When F was $< .05$, separate variance estimate was used. When F was $> .05$, pooled variance was used (Nie et al. 1970, pp. 244-316).
* $p < .05$.

Table 10

Analysis of Variance for
Attitude Post-Test Scores Grouped by Concepts

Concept	Group	Source	df	Sum of Squares	Mean Squares	F Ratio	Prob.
Ideal Self	F	Between GPS	1	1.04	1.04		
		Within GPS	79	417.95	5.29	.20	.60
		Total	80	418.99			
Ideal Self	M	Between GPS	1	3.44	3.44		
		Within GPS	83	515.85	6.22	.55	.46
		Total	84	519.29			
Total	F	Between GPS	1	.09	.09		
		Within GPS	164	940.73	5.74	.07	.90
		Total	165	940.83			
Total	M	Between GPS	1	54.08	54.08		
		Within GPS	79	345.87	4.37	12.35	.00*
		Total	80	399.95			
Total	F	Between GPS	1	19.90	19.90		
		Within GPS	83	708.14	8.53	2.33	.13
		Total	84	728.04			
Total	M	Between GPS	1	90.24	90.24		
		Within GPS	164	1105.84	6.74	13.88	.00*
		Total	165	1196.08			
Total	F	Between GPS	1	1080.45	1080.45		
		Within GPS	79	16247.55	205.67	5.25	.03*
		Total	80	17328.00			
Total	M	Between GPS	1	812.53	812.53		
		Within GPS	83	16823.65	202.69	4.01	.05*
		Total	84	17636.19			
Total	F	Between GPS	1	1793.46	1793.46		
		Within GPS	164	33192.40	202.39	8.86	.00*
		Total	165	34985.86			

* p < .05

Table 11

Semantic Differential
Attitude Gain Scores Grouped by Treatment

Concept	Group	Sex	No. of Cases	Gain Mean Score	Standard Deviation
Ideal Self	Exp.	F	45	1.05	2.70
		M	59	.51	3.08
		Tot.	104	.94	2.94
	Cont.	F	36	-.06	3.18
		M	26	.12	3.05
		Tot.	62	.02	3.11
M Y s e l f	Exp.	F	45	.80	3.01
		M	59	1.94	3.98
		Tot.	104	1.45	3.62
	Cont.	F	36	-.92	1.96
		M	26	-.12	3.10
		Tot.	62	-.58	2.51
T o t a l	Exp.	F	45	10.62	14.47
		M	59	11.84	11.15
		Tot.	104	11.32	12.64
	Cont.	F	36	-5.33	17.68
		M	26	-4.81	11.60
		Tot.	62	-5.11	15.19

It is interesting to note that for both "myself" and "total" score there was a loss or negative score in the control group. It would be difficult to determine what contributed to this, although one could suggest that events at home or amongst peers would be influencing factors.

The analysis of variance (Table 12) shows a significant gain to the .05 level and beyond for all experimental groups in all concepts, with the exception of the males for the concept of "ideal self." Of major interest here is the significant gain in the concept "myself" which is congruent with the objectives of the program.

Within the experimental group itself (Table 13), the only significant difference shown in the gain between males and females is for the concept of "ideal self" with the females showing the greater gain.

In summary, the experimental group (female, male and total) showed a positive gain in the concepts of "ideal self," "myself" and "total," the gain being significant at the .05 level for all concepts with the exception of the males for the concept "ideal self."

With the experimental group, there was only a significant difference in gain between female and male for "ideal self" with the females scoring higher.

This would then tend to indicate that the treatment had a significant effect on the positive gain in attitude.

Table 12

Analysis of Variance for
Attitude Gain Scores Grouped by Sex

Concept	Group	Source	df	Sum of Squares	Mean Squares	F	Ratio	Prob.
Ideal Self	F	Between GPS	1	49.08	49.09	5.75		.02*
		Within GPS	79	675.13	8.55			
		Total	80	724.21				
Ideal Self	M	Between GPS	1	2.79	2.79	.30		.59
		Within GPS	83	777.40	9.37			
		Total	84	780.19				
Ideal Self	Total	Between GPS	1	33.32	33.32	3.70		.05*
		Within GPS	164	1478.65	9.02			
		Total	165	1511.97				
Ideal Self	F	Between GPS	1	58.94	58.94	8.72		.00*
		Within GPS	79	533.95	6.76			
		Total	80	592.89				
Ideal Self	M	Between GPS	1	76.92	76.92	5.52		.02*
		Within GPS	83	1157.50	13.95			
		Total	84	1234.42				
Ideal Self	Total	Between GPS	1	160.47	160.48	15.17		.00*
		Within GPS	164	1734.86	10.58			
		Total	165	1895.33				
Ideal Self	F	Between GPS	1	5091.60	5091.60	20.20		.00*
		Within GPS	79	19918.58	252.13			
		Total	80	25010.18				
Ideal Self	M	Between GPS	1	5006.15	5006.15	39.27		.00*
		Within GPS	83	10579.67	127.47			
		Total	84	15585.82				
Ideal Self	Total	Between GPS	1	10485.84	10485.84	56.31		.00*
		Within GPS	164	30540.74	186.22			
		Total	165	41026.58				

* p < .05

Table 13

Analysis of Variance for
Attitude Gain Scores of Experimental Group

Concept	Group	Source	df	Sum of Squares	Mean Squares	F Ratio	Prob.
Ideal Self	Exp.	Between GPS	1	25.66	25.66	3.31	.03*
	F	Within GPS	102	861.99	8.45		
	M	Total	103	887.65			
Myself	Exp.	Between GPS	1	33.71	33.71	2.61	.11
	F	Within GPS	102	1316.05	12.90		
	M	Total	103	1349.76			
Total	Exp.	Between GPS	1	38.32	38.32	.24	.63
	F	Within GPS	102	16422.20	161.00		
	M	Total	103	16460.53			

* $p < .05$

Analysis of Relationship Between
MARIFAK Data and Attitude Data

The earlier sections determined that there was both a significant gain in knowledge and a significant gain in attitude to the .05 level. A Pearson Correlation Coefficient was applied to the MARIFAK and attitude gain scores to determine whether there was a significant correlation between the acquisition of knowledge and attitude change.

Table 14 shows the correlation of the gain scores.

Table 14

Pearson Correlation Coefficient
Between MARIFAK and Attitude Gain Scores

	Variable	Ideal Self	Myself	Total
K	Total Females	.13	.03*	.02*
N	Total Males	.20	.13	.00*
O	Exper. Females	.14	.10	.11
W	Exper. Males	.03*	.37	.44
L	Contr. Females	.33	.48	.49
E	Contr. Males	.13	.08	.11
D	Total M & F	.40	.01*	.00*
G	Total Exper. M & F	.07	.29	.33-
E	Total Cont. M & F	.36	.15	.29

* $p < .05$

For the experimental females there was no significant relationship between knowledge gain and gain in any of the three concepts. For the experimental males there was significance at the .05 level in the correlation between acquisition of knowledge and gain in the "ideal self" concept. In the total experimental group there was no significant correlation anywhere. The situation was similar for the control groups.

The only instances where significant correlation showed between the acquisition of knowledge and attitude gain was in combining all of the groups: experimental, control, female and male. This correlation for the combined groups

was beyond the .05 level for the concept "myself" and the gain in "total" attitudes.

Based on the above, the acquisition of sex-related knowledge does not necessarily lead to a positive gain in sex-related attitudes.

CHAPTER VI

DISCUSSION

This chapter will attempt to summarize the data reviewed in the last chapter; to compare those findings with findings from similar studies; to look into the implications of those findings; and, finally, to make recommendations.

Summary

On the basis of this study, one can say that an FLE program designed for level six, such as the one described earlier in Chapter III, can lead to a gain in sex-related knowledge and to a gain in attitude of sex-related concepts. The study reveals that the treatment involved was significantly effective in achieving both of the above goals. It should be noted that significance refers to statistical significance and not practical significance. For example, in Table 9 experimental females show a mean score of 19.58 and control females show a mean score of 20.92. There is not a practical significant difference but there is a statistical significant difference ($p < .05$). This indicates that the same results would occur under similar circumstances in at least 95 cases out of 100.

The male-female differences in gain is of interest in that although the females continue to score higher in the post-test scores of the knowledge test and most of the attitude test, the males show the greater gain for the most part between the pre-test and the post-test scores.

The study further reveals that the acquisition of sex-related knowledge and a positive gain in sex-related attitudes can take place without a significant correlation between the two.

Comparison with Other Studies

John F. Crosby (1971) determined that secondary level students, through an FLE program, achieve a significantly greater increase in knowledge of the concepts covered in the program than students who have not taken such a course. He also determined that a significant gain in positive attitudes toward themselves could also be achieved by students who had taken the course as compared to students who had not. This study is similar to Crosby's in its findings.

The differences between the two studies are as follows:

- (1) the age level - the former being secondary school and this one level six;
- (2) the size of population - the former being 38 and this one 166;
- (3) the duration of the program - the former being 34 hours and this one eight hours;
- (4) credit

was given for the course in Crosby's study and this course was given to all students as part of the curriculum.

Robert C. Wallace (1970) determined that a co-educational group produced a greater mean change on the sex-knowledge inventory and VD Inventory form than did a single sex group, but the changes were not statistically significant. He also determined that the co-educational group showed significantly greater mean change in the analysis of semantic differential data. In all cases the changes were to the positive or liberal end of the scale. This last result is similar to the result in attitude change in this present study.

Wallace concluded that in senior high school the students in a co-educational group do not learn significantly more factual knowledge than a single sex group but they do have a more significant positive change in attitudes.

The present study replicates one done by Edward Coates in 1970. The age group of the population studied by Coates was similar to the one in this study. Coates' treatment was for 30 hours over a six week duration, and the present study was for eight hours over an eight week duration. Teachers from within the school system taught the course in Coates' study, whereas specially trained Family Life Educators were used in this case. Coates used

intact classes and this study used groups of ten to twelve. Content for both programs were taken from similar sources.

The testing instruments used for the present study were a modified version of the ones Coates created for his study. The changes were merely in the length of the tests. The redundant areas were removed for this study.

The analysis of data was different in the semantic differential data. This study attempted to remove some of the dissipating effects by analyzing only those bi-polar adjectives that had a high evaluation component.

Coates determined that a significant increase in knowledge occurred in the experimental group as compared to a negligible increase by the control group. The results of the attitude scores showed only some significant changes in attitude concepts by the experimental group over the control group. Coates' conclusion was that knowledge could be acquired without affecting attitude.

Implications of Findings

In interpreting the findings of this study, one had to consider the limitations of the effectiveness of the control group. It would have been more appropriate to use an Analysis of Covariance instead of an Analysis of Variance to overcome this limitation, but the former computer program was not available. The multiple t tests did show the

differences between the experimental and control groups and, as a result, one could keep this in mind in interpreting the results. In addition, the gain scores are less reliable than the pre-test and post-test scores that make up the gain scores.

The experimental group did show significant gains in sex-related knowledge and sex-related attitudes, specifically in the concept "myself" and for the females' "ideal self." It should be noted that for the concept "ideal self" the males scored higher than the females on the pre-tests.

Some of the basic differences between the present study and Coates' study fall into two categories: research design and curriculum implementation. The research aspect involved in this study was the analyzing only of the evaluative bi-polar adjectives in the semantic differential, thus avoiding dissipation of the "attitude" or "evaluation" component.

The curriculum implications involve: (a) using a trained Family Life Educator and not the classroom teacher; (b) using small groups as opposed to larger intact classes; and (c) using the open ended discussion method and spending as much or more time discussing feelings about the content as on the content itself. It is the lack of the above factors in Coates' study which might account for the lack of

attitude modification reported by him.

Havighurst (1971, p. 43) describes one of the developmental tasks of this age group as building a positive self image. In the findings of this study it has been demonstrated that the FLE program described earlier can contribute in a positive direction to attitudes about "myself." This could then have general curriculum implications for schooling at the age level.

It is important to note that the FLE program described in the present study took place over an eight week period but only for one hour per week as compared to the typical 30 and 34 week periods in other programs. The classroom teacher in some instances co-led the groups with the Family Life Educator and was able to continue discussions at other times during the week when it was appropriate. This method of implementing an FLE or sex education program in the schools has implications for the use of trained para-professionals.

Recommendations

It was hypothesized in this study that there was a positive correlation between acquisition of knowledge and attitude change. This study demonstrated that gains in knowledge and positive attitudes were achieved but a significant correlation was not in evidence. Further investigation

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should take place to determine at what point the two factors may correlate. The questions here are: is it a culmination of acquisition of knowledge that causes attitudes to modify, or are there other variables involved.

A study such as the one presently reported here should be longitudinal in order to investigate the lasting effects, if any, of the changes that take place. The loss or negative score shown by the control group in the attitude post-test could be an indication of the instability of attitude formation at this age level, and a longitudinal study could more effectively examine the lasting results of an FLE program.

The present study did not attempt to determine the transference of knowledge and attitude to choice social behaviour. Comments by teachers after this FLE program indicate that there are observable changes in the students' behaviour. There appears to be a more concerted effort to be democratic in decision making, there is less of the "put down" amongst peers, and a greater degree of openness in discussion. These are some generalized areas that would be worthwhile investigating in an empirical study, to determine whether in fact these observations can be supported scientifically.

The use of the "stranger" or non-classroom teacher is one that should be investigated. Does this factor contribute to the outcome? This could have major implications.

for the school or school boards undertaking or contemplating inclusion of sex education in their curriculum.

An investigation of method of instruction particularly related to attitude development would be worthwhile. That is, a study is needed to compare the use of the lecture, the open ended discussion, or a combination of both.

It can be stated that there is no panacea to clearing the individual or family of the many problems facing their stability. This study as well as others cited have demonstrated that some issues can be approached through an FLE or sex education program. With further empirical study and improvement of existing programs, some progress may be achieved.

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APPENDIX A

CURRICULUM

UNDERSTANDING OURSELVESGRADE 6 PROGRAM

The 6th grader is beginning to notice that certain changes are taking place within himself. He is starting to move towards independence.

GENERAL AIMS & GOALS

1. to assist the student to develop emotional independence
2. to develop a sexual identity
3. to build a value system
4. to develop skills in decision making

ACADEMIC SKILLS OBJECTIVES

listening

comprehending material

presenting information - verbally - in written form

drawing conclusions

SOCIAL SKILLS OBJECTIVES

participating in a discussion

working in a group - sharing information

asking appropriate questions

role playing

This outline is to act merely as a guide. General direction is given to discussion. In planning each session, exercises, tasks, etc. should be added.

APPENDICES

Session I

- introduction
- what is Family Life Education
- why we use group discussion
- what is a group - relate to family
- different kinds of families
- do you have family discussions
- who is in your family - introduce them to us

End with: - introduce teacher as group participant be it observer or participant

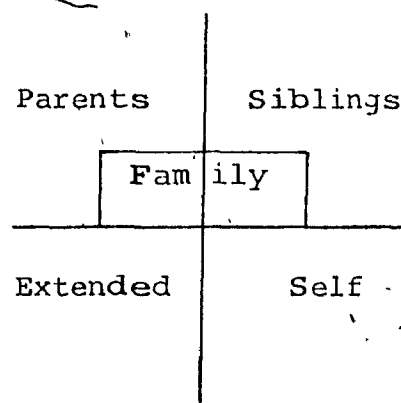
- discuss different kinds of participation

Expectations of program - theirs and yours.

Session IIFamily beginnings

1. What are the components of a family
2. How do we learn in the family
3. How do we feel about our families

May use this diagram:

Session IIIIntroduces the concept of puberty

1. What are some of the changes that are taking place
2. The meaning of puberty
 - A - USE CHARTS
3. Discussion or lecturette
 - B - REVIEW TERMINOLOGY

Session IV

Puberty continued

1. Film or film strip/discussion
 - MORELAND & LATCHFORD SERIES
"Family Living and Sex Education"
 - GUIDANCE ASSISTANCE SERIES
"Growing into Manhood/
Womanhood"
- (to review the previous session),
- A - menstruation
 - B - masturbation
 - C - wet dreams

Session V

Emotional Aspects of Puberty - Film: Glands and Hormones

- feelings about changes
- how relationships are affected (familial)
- individuality
- social relationships

Session VI

Relationships

- what are the ingredients of a relationship
- kinds of relationships
- premarital relationships
- procreation

Session VIIReproduction

Film - Moreland and Latchford Series

Session VIIISummary

Review unanswered questions

Evaluation

1. What are some of the things that happened that made the program a success?
2. What would you have liked that was missing?
3. Recommendations
(Bring in trust - sharing of ideas - how we learn from each other - what are some of the things that inhibit trust - what promotes it, etc.)

APPENDIX B

SEMANTIC DIFFERENTIAL

Name _____

Boy or Girl _____ Grade _____ Teacher _____

INSTRUCTIONS

The purpose of this test is to measure what certain things mean to you. On each page of this booklet you will find a different word at the top and beneath it a set of scales. You are to mark each scale according to what the word at the top means to you. There are no right and wrong answers.

Using the scales

If you feel that the word at the top of the page is very closely related to one end of the scale, you should place your mark as follows:

fair X : ___ : ___ : ___ : ___ unfair

fair ___ : ___ : ___ : ___ : X unfair

If you feel that the word at the top is only somewhat related to one end of the scale, you should place your mark as follows:

strong ___ : X : ___ : ___ : ___ weak

strong ___ : ___ : ___ : X : ___ weak

If you feel that the word at the top is equally related to both ends of the scale (or if you believe that the scale does not apply to the word at the top), place your mark in the middle space as follows:

safe ___ : ___ : X : ___ : ___ unsafe

General directions

1. Place your cross mark in the center of the space you select.
2. Make one mark on every scale.
3. After finishing the scales on one page, turn to the next page, read the word at the top of that page and mark those scales.
4. Do not look back and forth through the pages. Do not try to remember how you checked similar items earlier in the test.
5. Work fairly quickly! First impressions are most important.

As soon as your teacher gives the signal you may turn to the next page and begin.

MY IDEAL SELF

wise	___:___:___:___:___:	foolish
excitable	___:___:___:___:___:	calm
strong	___:___:___:___:___:	weak
masculine	___:___:___:___:___:	feminine
difficult	___:___:___:___:___:	easy
superior	___:___:___:___:___:	inferior
still	___:___:___:___:___:	moving
soft	___:___:___:___:___:	hard
bad	___:___:___:___:___:	good

GIRLS

wise	_____:	_____:	_____:	_____:	_____:	foolish,
excitable	_____:	_____:	_____:	_____:	_____:	calm,
strong	_____:	_____:	_____:	_____:	_____:	weak
masculine	_____:	_____:	_____:	_____:	_____:	feminine,
difficult	_____:	_____:	_____:	_____:	_____:	easy
superior	_____:	_____:	_____:	_____:	_____:	inferior
still	_____:	_____:	_____:	_____:	_____:	moving
soft	_____:	_____:	_____:	_____:	_____:	hard
bad	_____:	_____:	_____:	_____:	_____:	good

FAMILIES

wise	_____:	_____:	_____:	_____:	_____:	foolish
excitable	_____:	_____:	_____:	_____:	_____:	calm
strong	_____:	_____:	_____:	_____:	_____:	weak
masculine	_____:	_____:	_____:	_____:	_____:	feminine
difficult	_____:	_____:	_____:	_____:	_____:	easy
superior	_____:	_____:	_____:	_____:	_____:	inferior
still	_____:	_____:	_____:	_____:	_____:	moving
soft	_____:	_____:	_____:	_____:	_____:	hard
bad	_____:	_____:	_____:	_____:	_____:	good

MYSELF

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

FATHERS

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

WOMEN

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

MOTHERS

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

BOYS

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

BIRTH

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

MEN

wise	___:___:___:___:___	foolish
excitable	___:___:___:___:___	calm
strong	___:___:___:___:___	weak
masculine	___:___:___:___:___	feminine
difficult	___:___:___:___:___	easy
superior	___:___:___:___:___	inferior
still	___:___:___:___:___	moving
soft	___:___:___:___:___	hard
bad	___:___:___:___:___	good

APPENDIX C

MARIFAK

Name of Pupil _____

Boy or Girl _____ Grade _____ Teacher _____

Instructions

1. On the following pages you will find a number of multiple choice questions.
2. Read each question and the suggested answers.
3. Select the ONE answer which you believe to be BEST.
4. In the blank in front of the question PRINT the letter which represents the answer you have selected.
5. Place ONE answer in each blank. If several answers seem right to you, select the ONE which you think is BEST.
6. If you are unable to decide which answer to select, leave that space blank and come back to that question after you have finished the others.
7. After finishing the first page, turn to the next page and continue until you have finished the test.
8. Even though some things on this test may seem to be funny to you, do not laugh as this will disturb the others.
9. Do not rush. After finishing, go back over the test and read each question AGAIN. Make sure that each answer is the one you have selected.

1. All the pupils in the fifth and sixth grades are not the same size. The best explanation is
- A. Some are boys and some are girls
 - B. The parents of some pupils are larger than others
 - C. Some are at different stages of physical development
 - D. They are different ages
2. _____ cause the changes to occur in the body shape of boys and girls as they mature.
- A. Just becoming older will
 - B. Good exercise and rest
 - C. Hormones
 - D. Environment will
3. The endocrine glands produce substances called
- A. Chromosomes
 - B. Genes
 - C. Blood cells
 - D. Hormones
4. The MAIN function of the pituitary gland is to
- A. Control eye and hair color
 - B. Regulate growth and body size
 - C. Stimulate digestion
 - D. Develop muscle control
5. The time when the sex organs are maturing is called
- A. Childhood
 - B. Puberty
 - C. Adulthood
 - D. Old age
6. The major cause of acne is
- A. Too much thinking about sex
 - B. Overactive sweat glands
 - C. Insufficient exercise
 - D. Ducts of clogged oil glands becoming inflamed

7. When coarse, long body hair appears on the lower abdomen it is usually one indication that the person is :
- A. Physically able to become a parent
 - B. Going to be unusually strong
 - C. Beginning to mature sexually
 - D. Going to develop darker hair on his head
8. Sometimes a fifth or sixth grader seems awkward. This is most often due to his
- A. Legs and arms becoming longer
 - B. Chest becoming wider
 - C. Hips growing wider
 - D. Body trunk becoming longer
9. Male reproductive cells are called
- A. Seeds
 - B. Egg cells
 - C. Testes
 - D. Sperm
10. The testes produce
- A. Sperm cells and sex hormones
 - B. Urine and sperm cells
 - C. Only sperm cells
 - D. Only sex hormones
11. The testes are inside of the
- A. Abdomen
 - B. Scrotum
 - C. Penis
 - D. Vas deferens
12. After puberty a boy makes sperm cells
- A. All of the time
 - B. During an emission
 - C. After he is married
 - D. While he is asleep

- _____ 13. Sperm leaves the body through the
- A. Bladder
 - B. Penis
 - C. Anus
 - D. Skin
- _____ 14. The discharge of sperm is called
- A. Maturation
 - B. Urination
 - C. Pollination
 - D. Ejaculation
- _____ 15. After a boy's sex organs begin to mature sperm will sometimes leave his body while he is asleep. The best explanation for this is
- A. It happens every month
 - B. The boy has been thinking too much about sex
 - C. It is the natural way for the body to remove unnecessary sperm
 - D. There must be something wrong with the sex organs
- _____ 16. A girl is considered to have reached puberty when she
- A. Develops wider hips
 - B. Begins breast development
 - C. Menstruates for the first time
 - D. Produces her first fertilized egg
- _____ 17. Human egg cells are made in the
- A. Womb
 - B. Vagina
 - C. Ovaries
 - D. Fallopian tubes
- _____ 18. The organ that conducts an egg cell to the uterus is the
- A. Vagina
 - B. Cervix
 - C. Ovary
 - D. Fallopian tube

19. After puberty a girl usually makes one egg cell about
- A. 7 days
 - B. 14 days
 - C. 21 days
 - D. 28 days
20. Most mature women regularly produce egg cells until they
- A. Die
 - B. Are about 35 years old
 - C. Are about 50 years old
 - D. Are no longer married
21. The menstrual cycle involves the regular building up and breaking down of the lining of the
- A. Labia
 - B. Fallopian tube
 - C. Vagina
 - D. Uterus
22. The menstrual discharge usually lasts for about
- A. A few hours
 - B. A few days
 - C. Two weeks
 - D. One month
23. Once their periods become regular, most girls usually menstruate once about every
- A. 7 days
 - B. 14 days
 - C. 21 days
 - D. 28 days
24. The muscular tube which connects the uterus with the outside of the body is called the
- A. Cervix
 - B. Fallopian tube
 - C. Vagina
 - D. Ovary

25. In order to have a human baby it is necessary to have TWO parents
- A. Most of the time
 - B. Occasionally
 - C. Sometimes
 - D. Every time
26. What a person becomes depends upon
- A. Heredity
 - B. Environment
 - C. What he wants to be
 - D. All of the above
27. Inherited traits are determined
- A. During the third month of pregnancy
 - B. At birth
 - C. When the sperm cell fertilizes the egg cell
 - D. At the time of marriage
28. Heredity is likely to have LEAST effect upon
- A. Where one lives
 - B. Eye color
 - C. Rate of growth
 - D. Physical appearance
29. The process that occurs when a sperm cell unites with an egg cell is called
- A. Ovulation
 - B. Ejaculation
 - C. Fertilization
 - D. Ejection
30. The body place where sperm cells are usually placed in the mother's body is called the
- A. Uterus
 - B. Vagina
 - C. Fallopian tubes
 - D. Navel

31. The place where fertilization most often occurs is in the
- A. Uterus
 - B. Fallopian tubes
 - C. Vagina
 - D. Ovary
32. All human babies grow from
- A. A sperm cell
 - B. An egg cell
 - C. Either a sperm or an egg cell
 - D. A sperm cell and an egg cell
33. A baby begins to develop when the
- A. Egg cell is produced
 - B. Sperm cell is produced
 - C. Sperm cell enters the mother's body
 - D. Sperm cell and egg cell unite
34. Which of the following has NO part in human reproduction?
- A. Testes
 - B. Rectum
 - C. Ovaries
 - D. Uterus
35. Identical twins are formed when
- A. One fertilized egg cell splits
 - B. One unfertilized egg cell splits
 - C. Two egg cells are fertilized by one sperm cell
 - D. One egg cell is fertilized by the same sperm cell
36. Fraternal twins are formed when
- A. Two egg cells are fertilized by different sperm cells
 - B. Two egg cells are fertilized by the same sperm cell
 - C. One egg cell splits before being fertilized
 - D. One egg cell splits after being fertilized

37. If a mother gives birth to both a boy and a girl, they must be
- A. Identical twins
 - B. Fraternal twins
 - C. Either of the above
 - D. Neither of the above
38. A mother can no longer have babies when
- A. Her ovaries are empty
 - B. She stops producing egg cells
 - C. She becomes 60
 - D. Her breasts no longer produce milk
39. When growing inside the mother, the baby is in the
- A. Uterus
 - B. Vagina
 - C. Ovary
 - D. Cervix
40. The time during which a baby develops in a mother's body is called
- A. Conception
 - B. Ovulation
 - C. Pregnancy
 - D. Delivery
41. The structure which connects a baby to its mother before birth is called the
- A. Umbilical cord
 - B. Navel
 - C. Abdomen
 - D. Ovary
42. The length of time that most babies grow inside the mother before they are born is about
- A. 7 months
 - B. 8 months
 - C. 9 months
 - D. 10 months

43. The correct order of events in a normal pregnancy is
- A. Ovulation - fertilization - labor - conception
 - B. Mating - conception - ovulation - birth
 - C. Conception - ovulation - labor - delivery
 - D. Ovulation - conception - labor - delivery
44. The mother knows that it is about time for the baby to be born when
- A. A certain number of months have passed
 - B. Her breasts seem full
 - C. The baby begins to kick
 - D. The uterus starts hard contractions
45. During birth the baby passes through the
- A. Cervix and vagina
 - B. Fallopian tubes and vagina
 - C. Uterus and urethra
 - D. Uterus and fallopian tubes
46. The passage through which a baby leaves the mother's body
- A. Must be enlarged by a doctor
 - B. Forms during pregnancy
 - C. Stretches gradually as a natural part of birth
 - D. Disappears shortly after birth
47. After birth the doctor separates the baby from its mother by tying and cutting the
- A. Placenta
 - B. Navel
 - C. Umbilical cord
 - D. Amniotic sac
48. The first part of a baby which usually leaves the mother's body during normal birth is the
- A. Feet
 - B. Knees
 - C. Head
 - D. Hands