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Shoemaker, M-Yvonne Bishop

AN ASSESSMENT OF CHILD DEVELOPMENT/PARENTING KNOWLEDGE OF ADULT LEARNERS AS A RESULT OF PARTICIPATION IN AN INFANT STIMULATION EDUCATION PROGRAM

The Ohio State University

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AN ASSESSMENT OF CHILD DEVELOPMENT/PARENTING KNOWLEDGE
OF ADULT LEARNERS AS A RESULT OF PARTICIPATION IN AN
INFANT STIMULATION EDUCATION PROGRAM

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
M-Yvonne Bishop Shoemaker, B.S., M.Ed.

*****
The Ohio State University
1983

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Approved by
Adviser
Home Economics
Education
For my mother Nora Young Bishop
Parent, teacher and friend in the
finest sense of the words
and
For my husband Paul A. Shoemaker
Mate, friend and critic,
who helped me realize a dream.
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It has been said, "No man is an island... none goes his way alone" and this writer has had no more forceful experience to make her aware of this fact than completing a dissertation. The writer is most grateful to a great many people and wishes to thank all who have contributed to the process.

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Studies in Adult Education. Professor William D. Dowling
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PUBLICATIONS

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CHAPTER I
INTRODUCTION

Background

The varied societal environments of families today are increasingly different from the ones experienced by their families before them. Not only must individuals in families meet their own personal developmental needs and role responsibilities, including familial roles, but they must deal with continuous change that occurs in all areas of living. Some of the changes have actually had impact on how the basic family unit functions, e.g. technological changes have reduced the instructional influence of the parent in a trade or vocation to a position of lesser importance since emerging job fields appropriate for the child may have little or no connection to the occupation of the parent. Increased mobility of the population has also served to reduce the influence of the extended family for lack of proximity makes close involvement more difficult. Historically, the extended family often provided some of the child care giving for parents - especially of young children, young nuclear families, single parents and working mothers. This easily available parenting information and assistance with child care were helpful in reducing parenting anxieties and allowed the parents a
better opportunity to focus some attention on their own needs as a marriage partner or other felt needs.

Today the nuclear family more often must be self-reliant or seek help from outside the extended family since the geographically closest member of the extended family may be miles away, employed and/or unable to supply the needed help. Present patterns of living away from the larger family unit make extended observations and experiences with infants and young children, prior to becoming a parent, much less likely to occur. Bell (1976) focused the concern:

It is all too apparent that, year by year and in increasing numbers, America's young people are entering the adult world, inadequately trained to be parents. (p2).

In the past, the larger family unit often provided an opportunity to learn about growth and development of children and be engaged in providing some of the child care giving activities. This family laboratory made it possible for its members to learn parenting skills and learn what children are like as they grow and develop. Without such a background, individuals or families may purchase child care services--however, they may need assistance in determining what constitutes good child care. Those persons who do not have adequate income to purchase child care services, and who have moved away from the extended family are faced with a more difficult situation. During fiscal year 1980 there
were 8,441 families in Franklin County, Ohio who fell below the poverty level and of that number 2,719 families were served by Franklin County Children's Services. One of the services rendered was a referral of these families and their 4,977 children to the local Family Life Education Program (FLEP), the Columbus Metropolitan Home and Family Life Program, for educational services. This program is designed to help meet educational needs of socio-economically deprived adults in the curricular areas of home economics. From the beginning of FLEP in Toledo, Ohio in 1939, child development/parenting has been an integral part receiving a very strong programmatic emphasis. The program provides a base for child development/parenting knowledge in a laboratory or home setting in which parents develop and/or refine their skills in parent/child interaction and other roles and aspects of parenting. During the past seven years added emphasis has been given the parent/child interaction components as a direct response to the 1970 and 1973 findings of White and others related to the importance of the child's first three years of life in regard to development, particularly cognition throughout the remainder of his or her life.

Bell (1976) stated:

The challenge of teaching young adults how to be effective parents . . . is not confined to the educational establishments, nevertheless, more and more responsibility for helping our young people become good parents seems to be falling on the shoulders of professional educators (p.2).
Only in the mid 1970's has the general public acknowledged openly that natural parenthood does not assure that birth parents have inherent parenting skills and the knowledge needed to nurture growth and development of children (Gordon, 1970). During fiscal year 1981, Franklin County Children's Services had 1,222 families referred to them as child abuse/neglect situations with 134 of these cases substantiated (Schwartz, 1982). This clearly indicates serious lacks in parenting skills and/or knowledge among other things, e.g. mental illness and abuse of self. Pattison (1977) has indicated:

.. .lack of formal preparation for parenthood may well be one reason why we have so much child abuse and neglect in our society today. Many young people have not learned that having children is a full time responsibility, one that requires commitment, preparation, and hard work, as well as love and acceptance (p. 30).

One county Children's Services Director indicates that the level of abuse and neglect of children is great and the danger to society acute. Clark (1982) emphasized:

If abused/neglected children are not helped they grow up to become criminal offenders and abusers and neglectors of children (p. 1).

Studies of adult violent offenders show from 50 to 80% of them were abused as children. Maurer (1975) found in his study at San Quentin 100% of the violent inmates had experienced abuse as children when they were between ages 1 and 10.

Public awareness as to what constitutes child abuse/neglect is largely a result of news media exposure, i.e.
accounts of cases in magazines, newspapers and television. This new public awareness of the widespread social problems related to child abuse/neglect has resulted in more community resources being made available or support systems being developed for children and their families. As parents and others are better able to recognize the need for help in developing parenting skills and knowledge and be aware of a source for gaining them, the more parents are likely to make use of such services. Tough (1973) has stated that most adult learning comes from the personal and practical needs of living and participation in educational programs usually stems from a major change in life and developmental tasks of the adult, e.g. marriage, parenthood, a new job or buying a new house. Knowles (1973) has pointed out that when adults are able to recognize their need for help they are more willing to seek out and use information and services they perceive as relevant to the problem(s) they are experiencing. In 1970 Knowles stated:

Adults engage in learning in response to pressure they feel from current life problems; their time perspective is one of immediate application . . . they tend to enter any educational activity in a problem centered frame of mind (p. 48).

The media efforts to heighten public awareness of the need for parent education comes at a critical time in the lives of new parents and if this awareness can be met with parenting classes that provide the needed information and skill development opportunities the cycle of abuse/neglect
may be broken. The earlier parents become aware of their need for parenting education and skill development and set about obtaining the educational services needed the growth potential benefits are great. Learning about and utilizing sound nutritional practices for example, not only would benefit the mother but the child in the prenatal developmental stages. When parents understand the influence of socialization patterns on cognitive, social and emotional development in children, they can use this knowledge to enhance their children's development.

Direct involvement in the learning activity is crucial to the adult's development of skills and knowledge. Knowles (1970) has pointed out that there is a marked shift from the transmittal techniques of teaching adults as in lectures and assigned readings toward experimental techniques such as simulation, discussion, case studies and laboratory applications. Saddam (1977) has stated:

Learner involvement or activity on the part of the student is a vital ingredient in all learning transactions and is essential to adult learning . . . an adult learner is actively involved when he assumes the major responsibility for his learning behavior (p. 2).

Access to parenting education is especially important to those young families who no longer have their extended families close at hand to provide such information or who recognize that their extended family is fostering neglectful or abusive behavior toward children. Ravitz (1963)
recognized mobile low-income families as having additional problems coping with cultural assimilation. The new cultural setting may be difficult to cope with, particularly for one who is coping with the problems of becoming a

Population trends indicate that many women are waiting until they have launched and even achieved a measure of success in their careers before becoming parents or assuming parenthood. Other trends indicate the number of adolescents having babies has remained fairly consistent for the past six years and many continue to allow the advent of pregnancy to mark the end of their formal education. The number of adolescents who retain custody of their babies has increased sharply, regardless of whether they remain in school or drop out or if they have developed parenting skills or not (Eshleman, 1981).

**PURPOSE IN THE STUDY**

The purpose in this study was to assess the knowledge gained and changes in attitudes and self-perceived competency in parenting by lower socio-economic adult students participating in an infant stimulation program for varying periods of time. The results of this study can be added to the small body of knowledge and data available to assist in determining the value of programs directed toward meeting the needs of adult parent learners from the lower socio-economic stratum. The need for additional research extends to determining the effectiveness of techniques of instruction
to achieve behavior change among disadvantaged adults and children (Gordon, 1972).

RESEARCH HYPOTHESES

The following research hypotheses are formulated:

1. There is a significant gain in knowledge scores, from pre to posttests by the adults enrolled in infant stimulation classes on the Child Development/Parenting Knowledge Test (CDKT).

2. There is a significant gain in perceived competency scores from pre to posttest of the adults enrolled in infant stimulation classes on the Child Care Giving Competency Scale (CCGCS) titled How Capable Am I.

3. There is a significant gain in positive attitudes (lower scores) toward parenting and children from pre to posttest by adults enrolled in infant stimulation classes on the Attitude Toward Parenting Scale (ATP).

4. There is a positive relationship between the number of child care giving experiences by the adult students and their perceived competency in providing adequate care for their children as indicated by their CCGCS posttest scores.

5. There is a positive relationship between posttest scores on the CDKT and CCGCS and the teachers' use of strategies that involve direct interaction with children.
6. There is a negative relationship between the ATP posttest score (indicating a more positive attitude toward parenting and children) and the teachers's use of instructional strategies that involve direct interaction with children.

Assumptions

1. The parenting knowledge and child care giving skills measured in this study are important components of the Ohio Family Life Education Program (FLEP).

2. Competencies taught in infant stimulation classes are related directly to those gained by the FLEP participants.

3. Adult program participants responded honestly and to the best of their ability.

Limitations of the Study

This study was limited to the 1980-81 adult student participants in three infant stimulation classes in the FLEP. Participants in each of the classes were pretested before participating in the classes and posttested after each 12 week instructional period of their class and/or at the conclusion of the tested phase of their study.

The population may not be representative of similar populations in other situations. Consequently, generalizations made from the study will apply to the population sampled.
Definition of Terms

The terms used throughout this study which have specific meaning are defined below.

**Vocational Home Economics.** Vocational home economics is an educational program for the occupation of homemaker which assists high school youth and adults in personal growth and development as a home and community member. Emphasis is on preparation for and participation in meeting the responsibilities of establishing and maintaining a successful home and family life. (Ohio Vocational Home Economics Consumer Homemaking and Job Training Manual of Operations, 1975).

**Parenting Concepts.** Parenting concepts have been defined by Black (1978) as being the total interaction, verbal and nonverbal, between parent, caregiver (surrogate) and child, which directly influence the development of a child's self concept as well as his/her physical, social, emotional and intellectual potential.

**Parenting Education Competencies.** Parenting education competencies are concerned with developing and cultivating the various physical, intellectual, aesthetic and moral faculties to enhance the parent-child relationship in the degree and kind to be sufficient to the child's needs.

**Ohio Family Life Education Program.** The Ohio Family Life Education Program is a program that seeks to improve
home environment and the personal competencies of disadvantaged adults through the development of homemaking skills in the following areas: parenting; parent/infant interaction; nutrition and food preparation; clothing care, construction and renovation; consumer awareness and resource management; basic techniques of home improvement, maintenance and repair; and furniture repair and refinishing (Ohio Vocational Home Economics Manual of Operation, 1975).

Intensity of Parenting Experience. The intensity of parenting experience is the relative degree of vigor or activity with which the interaction between parent/caregiver (surrogate) and child occur, and the frequency of those events and changes that occur within those events.

Adult Education. Adult education was defined by Verner (1962) as a relationship between the educational agent and the learner in which the agent selects, arranges, and directs a sequence of progressive tasks that provide systematic experiences to achieve learning for those whose participation in such activity is subsidiary and supplemental to their primary productive role in society.

Extended Family Members. Extended family members are defined as relatives, those related to one, i.e., aunts, uncles, cousins, grandparents, siblings.

Teaching Strategies. Teaching strategies are methods or ways of obtaining learning objectives, i.e., gaining
attention and interest and involving students in learning experiences. Teaching strategies are also concerned with establishing situations in which students will succeed and experience personal satisfaction.

**Infant Stimulation.** A Family Life Education Component that focuses on the interaction between parent and infant that fosters intellectual, emotional and physical development.

**Low Socio-economic Status.** FLEP participants at or below the poverty level which $8,414 for a non-farm family of four according to 1980 Census data.
CHAPTER II
REVIEW OF LITERATURE

The literature reviewed in this chapter was selected to give direction to this study and to focus on certain key elements and their relationships to each other. The nature of the adult, as a learner, and the specific problems confronted by the disadvantaged learner are addressed. The Ohio Family Life Education Program's mission and purpose have been reviewed with particular emphasis given to infant stimulation and the role the program can play in developing helpful relationships between parent and child.

The Adult as a Learner

Adults differ more widely from their peers in their adulthood than they did in their youth. McClusky recognized in 1958 that a substantial basis for differential psychology of adults was growing. This base was further supported and emphasized through Knowles' (1970) work which distinguished between androgogy and pedagogy. In more recent times Saddam (1977) stated

Adults are a diversified group of learners because of the differences in mental ability, performance, socioeconomic background, motivations, needs and other factors (p. 15).
In 1977, Kidd reported McClusky's observation of 1965 that the great range of individual differences among adults continues to increase with age and requires great caution when generalizing any claim about the adult student. The lack of "age fair" instruments for use with adults and the dearth of research with lower class adults were considered serious limitations in available information about socio-economically deprived adults by McClusky.

Because adults vary in their personal characteristics, great care must be given to designing educational programs to meet their wants and needs. Verner (1962) advocates the organizing of knowledge needed to accomplish changes in adult behavior so it complements the cultural and organizational patterns of the adults involved.

A sound beginning point with the disadvantaged adult and other adult learners is recognizing their adulthood. Knowles (1970) avers

... to be adult means to be self-directing. ... the deepest need an adult has is to be treated as an adult. Androgogy embraces the concept that the adult student must be treated with respect as a self-directing person (pp. 40).

Educational programs must be geared to the needs of these citizens if adult education is to help meet their needs and enable them to function more fully in a healthy society.

Havighurst and Orr (1956) identified social roles of adults that must be attended to if they are to fully participate in society. These social roles adults must
assume require growth and development based on continued learning if they are to meet their parenting responsibilities. A major parenting goal of adults in the middle years as viewed by Havighurst and Orr (1956) is setting adolescent children free and helping them become happy and responsible adults. In Miller's (1967) view our social-role goals in adult education often suggest interest in the function of an individual rather than individual development. The Great Books program was cited by Miller (1967) as an adult education program whose large purpose embraced the concept of intellectual development of the student rather than only providing job training and job upgrading possibilities.

Educators who work with adults need to understand that adult learners are more likely to be looking for solutions to problems than to be looking for subject matter content when they engage in educational pursuits. Knowles (1970) asserted adult educators can make use of this characteristic of the adult learner and provide instruction that addresses career, personal and family developmental needs.

The Disadvantaged Adult Learner

The term disadvantaged is defined by Anderson and Niemei (1969) as "persons who are members of a poverty subculture and are handicapped with respect to the mode of the dominant society." This includes lower socioeconomic
people, the educationally and financially deficient and other similarly described persons. Disadvantaged adult learners often express frequent feelings of inadequacy when dealing with the tasks and issues before them. Often they indicate they are not capable of learning or managing.

Rainwater (1960) in her study entitled *And the Poor Get Children* found that the major contributing factor to the poor having more children was the lack of family planning. Communication between the husband and wife on the subject of family planning was found to be almost non-existent among the lower socio-economic families in this study.

The socio-economically deprived adult brings to the educational setting additional problems related to self concept, reading ability and level of education. Often all three factors indicate deprivation on the part of the individual student. The disadvantaged adult learner may also have little or no knowledge about the resources available to him/her or how to use them. Lack of transportation can present a monumental block in obtaining adequate health care, child care and other needed services.

Deutsch (1963) recognized among children who come from lower class socially impoverished circumstances, there is a high proportion of school failure, school drop-out, reading and learning disabilities, as well as life adjustment problems. ...the effectiveness of the school as a major institution for socialization
is diminished. ...the lower class child enters the school so poorly prepared... initial failures are almost inevitable, and the school experience becomes negatively rather than positively reinforced (pp. 163).

Eshleman (1981) found that parents in lower socio-economic circumstances often considered feeding, clothing and providing shelter for their children to be their primary child rearing responsibility. It was not considered inappropriate by these parents, for children to drop out of school to earn money and help with their keep after age 16.

**Family Life Education Program**

Family Life Education Programs (FLEP) in Ohio had their beginnings in Toledo, Ohio in 1939, as one of the four pilot sites sponsored by the U.S. Office of Education. The initial purpose of the program was to develop an experimental educational offering directed toward strengthening and improving families. It was this initial effort that made available to disadvantaged families a home economics educational program created to address their specific needs on a continuing basis. The program's base of operation began and continues to be in the neighborhood it sought to serve. The neighborhood location has made the program easily accessible to those it seeks to serve, and facilitates a closer working relationship between program operators and program participants. Program relevancy concerns
are easily focused on when close contact is maintained between these two key groups of people.

In a report on one FLEP in 1969, Price clearly indicated that the major continuing purpose of the program at that time was to help the disadvantaged family help itself. Black's Annual Report of 1980 reveals this major purpose is still used to focus program efforts. A problem centered approach is utilized to facilitate reaching the population the FLEPs are attempting to serve. Short range objectives are utilized to allow students to more clearly relate class content to their needs and to experience some success in reaching personal goals. These non-traditional students have frequently left the secondary school setting before graduating for a variety of reasons. These students' ability to see purpose in education, delaying goals, and often expressing feelings that they cannot learn present the FLEP teachers with additional challenges.

The widely held view that adults cannot learn as well as in adolescence, or are declining in their ability to learn may have had its beginning as a result of research findings of Jones and Conrad (1933), Foulds (1949) and Wechsler (1958). These studies compared a cross-section of school children with adults in the armed services or a penal institution. The adults in either setting were a select group of adults and therefore, not representative of the population. The longitudinal studies of Owens (1953)
Bayley and Oden (1955) indicate adults can and do continue to learn quite effectively and their intellectual abilities do not decline markedly. The adult can continue to learn according to all the research cited, the disagreement is in the amount and kinds of learning they are capable of doing. Unfortunately there are those among the FLEP student population who are convinced they can no longer learn. The FLEP educator must help adult students understand that their ability to learn changes little throughout life and that it is possible for them to continue to learn.

In an effort to strengthen and improve family life, family life educators have sought ways to enhance the nurturing quality of the family unit for all of its members. Infant stimulation classes for FLEP students are the result of such an effort.

**Infant Stimulation**

The infant stimulation component of the program was added after determining there was a need to improve parent-infant interaction. Program participants, when asked, placed little or no value on the time spent with their infants.

Gordon (1970) and White (1975) in their studies found cognitive development of children between the ages of 0 and 3 to be closely linked with the amount and kind of parent-child interaction those children participated in
individually. Further, the studies indicated that cognitive potential may well be limited for all time for those children who are limited or deprived of such interaction. Infants and small children who failed to thrive were found to be lacking in parental interaction.

Kerchoff (1977) has stated

Family life and parenting would be greatly improved if what is known about child development was taught to all individuals; for the field does not lack in knowledge and information as many would have us believe... We know a good bit about the ways in which children grow and develop, what the danger for growth-problems are, and what guidance should be compatible with various stages and ages of development. Lack of transmission of such knowledge creates a great many problems in family life, just as lack of understanding of the stages of development of the adults in the family make for trouble if children do not understand them as they grow (pp. 6 & 7).

The National Advisory Council on Adult Education (Byre, 1975) has prepared a position paper indicating:

Adult educators have an irrevocable and urgent responsibility to assist parents, surrogate parents, and parents-to-be in increasing their understanding of the influences, the skills, and the principles that govern child development, and because child, family and societal welfare are inextricably related to the successful survival of the family unit. Adult educators are urged to recognize the necessity for development and implementation of educational programs in the area of parent/early childhood education (p. 23).

A National Assessment of Parent Education and General Needs was conducted by Applied Management Sciences in 1977 for USOE, to identify needs that could be served by educa-
tional television programming. The following four general categories of interest and concern were identified: (1) family related issues; (2) global/societal concerns; (3) personal development/interpersonal relationships; and (4) economic-related problems. The family related issues centered on parenting and parent roles from the child directed and the parent directed perspectives. The respondents expressed concern that a more realistic view of parenthood be presented to future parents. The respondents identified topics to be dealt with as being:

   b. Learning values and mortality.
   c. Dealing with failure.
   d. Discipline.
   e. Mother/father relationships.
   f. Self-image development.
   g. Emotional expression.

Lally (1977) reported in his research findings, after working with low-level education and low-income families that there was wide variation in families' needs and their coping abilities.

A major insight gained from Lally's research deals with the creation of programs for low-education and low-income families. It was found that descriptors used to select individuals for the program did not define them very
well. The variation in family functioning within the control and experimental groups was great. It was found that support strategies must be sought to deal with people who are at very different levels and who are functioning in very different ways.

Lally concludes by stating

...some families may have needed us only as deliverers of materials through which they could create a stimulating and enriched environment for their children; to help them with the process of using materials, games, tasks and books with infants and toddlers in ways which effectively enriched the lives of their children; and other families demanded information about socialization, sex education, etc. (pp. 76 & 77).

Each individual acquires informal information about societal expectations of the parenting role along with expectations they establish for self. All information gained through observation may not be sound or accurate. Earhart (1980) indicated that:

Home economists can be instrumental in providing a realistic depiction of the parent role...parents need to recognize each child is different, therefore, each one reacts and behaves differently throughout his/her life (p. 14).

In a book titled The Joy and Sorrows of Parenthood, (1973) the Committee on Public Education Group for the Advancement of Psychiatry has stated that:

Inner and societal forces effect changes in parents; the child too has an influence on the adaptation and personality development of the parents (p. 16).
Many changes occur in the lives of parents which affect their behavior. This period of time is not static for there are no fixed quantities in relative values, attitudes and behavior on the part of parent(s).

The research findings of Wolock (1977) revealed that the parents' own background has taught them certain methods of coping which tend to be followed in the presence of similar circumstances. The parents have a difficult task in order to accomplish their full potential—physically, emotionally and economically, if they have experienced extreme deprivation.

Wolock (1977) further contended that change for these families would result from changing societal and community characteristics. Interventions that produce improvement in the family's situation are extremely difficult and must include some help with child caregiving.

The research findings indicate that a number of approaches has been attempted on a project basis to determine if there is a way in which the basic and nurturing needs of the family can best be met, especially the needs of the low income family whose problems are compounded by a lack of material resources. Sound research using longitudinal study methods has been thwarted by limited time and funding for experimental approaches.

Mounting social problems related to the poor or the lack of quality parenting warrant renewed efforts to
provide a sound informational base and parenting skill development opportunities. This is especially important for the segment of the population which cannot financially afford access to other sources of help for child care giving or may not know where to obtain additional help in gaining child care knowledge and the skills in the parenting role.

Fontana (1973) argued:

The impossibility of finding an easy answer (for child-maltreatment) does not relieve us of the responsibility of trying to find solutions... We will find no solution so long as we pretend there is no problem... or sit hoping for a miracle cure. ...Troubled parents must be helped to recognize their intrinsic potentials as humans... and that of their children (xiii).
CHAPTER III
METHOD

This study was designed to determine the effectiveness of child development/parenting education in infant stimulation classes in Ohio's Family Life Education (FLEP) as measured by the adult student participants' attitudes toward parenting and children; self perceived competency in performing selected child care giving tasks and interacting with children in given situations; and knowledge of given child development concepts. The child development/parenting concepts included in this study were identified by individuals associated with the Home Economics Census Study of the American Vocational Association (Hughes, 1980) and are also found in the Ohio Family Life Education Program Curriculum Guide (1978) for adults and the Vocational Home Economics (1975) for secondary programs.

Research Design

The design of this study fits the pattern of the Recurrent Institutional Cycle Design: A "Patched-Up" Design, Number 15 by Campbell and Stanley (1973). This quasi-experimental design was selected for use in this study because the nature of the groups of students and
situations precluded any possibility of dividing the entering classes in equated halves and establishing a control group. Campbell and Stanley (1973) stated:

The design is appropriate to those situations in which a given aspect of an institutional process is on some cyclical schedule, continually being presented to a new group of respondents (p. 57).

This design combines elements of Design Two: One Group's Pretest-Posttest and Design Three: Static Group Comparison. These combined designs allow for cross-sectional and longitudinal analyses. The specific modifications for the Recurrent Institutional Design are illustrated in the following diagram:

\[
\begin{align*}
0_1 & \quad \text{X}_a & \quad 0_2 & \quad \text{X}_b & \quad 0_3 & \quad \text{X}_c & \quad 0_4 \\
0_5 & \quad \text{X}_d & \quad 0_6 & \quad \text{X}_e & \quad 0_7 \\
0_8 & \quad \text{X}_f & \quad 0_9
\end{align*}
\]

In this design 0 represents the measurement of the dependent variables, scores on the Child Development Knowledge Test, the Child Care Giving Competency Scale and the Attitudes Toward Parenting Scale. The X represents the treatment, which is participation in course instruction and the independent variable. Intact class groups participated in the treatment. The broken line ( ) across \( X_c \), \( X_e \) and \( X_f \) represents the 18 week period the entire program was closed following five weeks of instruction and seven weeks before the scheduled instructional period was completed.
This interruption changed the time series study to an interrupted time series. Since the posttest is administered for one or more classes at the same chronological time as the pretest for another class, cross sectional and longitudinal effects can be compared and the maturation and selection differences between classes are controlled for internal validity. Campbell and Stanley (1973) warn that the findings of the study should be limited to the institutional cycle under study to maintain external validity. This design controls for these threats to internal validity: history, testing and instrumentation. Maturation was controlled by limiting the time span used for instruction between pretests and posttests to periods of 12 weeks for each of the three class groups despite an 18 week interruption of the total program seven weeks prior to the scheduled final test for each group. Regression was controlled since the adult student subjects were not selected on the basis of extremes on scores or ability. Mortality, a potential risk, proved to not threaten the validity of this study. Selection is recognized as a threat to the internal validity of this study for the students either elected to take the classes or they were assigned to them through the court system. Restrictions for enrollment in the infant stimulation classes are: the enrollee must be the parent of a child between ages of birth to two; and he or she must come from a socio-economically deprived situation.
The independent variables for this study were selected attribute variables e.g., age at birth of first child, amount of experience with children, concepts taught and the value assigned to them by teacher and time allocated to teach the given concept along with the pretest scores on the three dependent measures. The dependent variables are scores on the Child Development Knowledge Test (CDKT), the Child Care Giving Competency Scale (CCGCS) and the Attitude Toward Parenting Scale (PARI). The relationship of the variables is shown in Figure 1.

Related research activities to this study are presented in Table 1 in the sequence they occurred (Table 1).

**Attribute Variables**
- Age group
- Marital status
- Age at birth of 1st child
- Parenting information sources
- Parenting information influence
- Direct experience with children
- Occupational status
- Assistance with care of child(ren)

**Independent Variable**
- \( X = Treatment \)

**Dependent Variables**
- Knowledge of Child Development/Parenting Test (CDKT)
  \[ KnTest_T_3 - KnTest_T_4 = \text{Knowledge gained} \]
- Child Care Giving Competency Scale (CCGCS)
  \[ \text{Competency Posttest} - \text{pretest} = \text{change} \]
- Attitude Toward Parenting (PARI)
  \[ \text{Attitude Posttest} - \text{pretest} = \text{change} \]

Figure 1.
Schematic Diagram of Relationships of the Study Variables
Table 1
Research Activities Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>February to April 1979</td>
<td>Development of items for test to match conceptual framework. Items submitted to three members of the faculty in Department of Family Relations and Human Development for content validation.</td>
</tr>
<tr>
<td>April 1979</td>
<td>Human subjects approval</td>
</tr>
<tr>
<td>May 1979</td>
<td>Pilot Study I Columbus-Dayton Analysis of Pilot Test I</td>
</tr>
<tr>
<td>June and July 1979</td>
<td>Revision to ATP PDQ CCGCS CDKT</td>
</tr>
<tr>
<td>August 1979</td>
<td>Final agreed upon questions for CDKT between researchers in 3 states based on Kuder Richardson Formula-20 Procedure and an item analysis of all 123 items.</td>
</tr>
<tr>
<td>October-December 1979</td>
<td>Approval of revised reading level at the sixth grade level by English department reading specialist.</td>
</tr>
<tr>
<td>January-February 1980</td>
<td>Revision of language of CDKT with approval of teachers and supervisors to include colloquial terms used by students along with technical terms to aid students comprehension of test item.</td>
</tr>
<tr>
<td>April-June 1980</td>
<td>Pilot test for reliability testing of instruments in Columbus using Kuder Richardson Formula-20. Instruments were ATP, CCGCS, and CDKT</td>
</tr>
</tbody>
</table>
October 1980  
Main study:  
Student group A - pretest  
(KnTest₁)  
12 weeks class instruction  

February 1981  
Student group A - posttest 1  
(KnTest₂)  
Student group B - pretest  
(KnTest₁)  
12 weeks of class instruction  

April 1981  
Student group A - posttest 2  
(KnTest₃)  
Student group B - posttest 1  
(KnTest₂)  
Student Group C - pretest  
(KnTest₁)  
5 weeks class instruction  

June 1981 - September 1981  
Program closed 18 weeks due to Federal Funds cutback. Study is now an interrupted time series study.  

October 1981  
Student group A - posttest 3  
(KnTest₄)  
Student group B - posttest 2  
(KnTest₃)  
Student group C - posttest 1  
(KnTest₂)  

November - December 1981  Analysis of Data  

January - August 1982  Analysis of Data  

Instrumentation  
Four instruments were used in this study to gather student data. Student knowledge of child development/parenting concepts was measured by the Child Development Knowledge Test (CDKT); student attitudes toward their role as a parent were measured by the Attitude Toward Parenting Scale (ATP); their perceived self-competency in their parenting
role was measured by the Child Care Giving Competency Scale (CCGCS) and the Personal Data Questionnaire (PDQ) provided three scales that helped to not only identify other sources of parenting knowledge and skill development available to the student but provided a means for the student to report the relative importance of any of these sources.

**Child Development Knowledge Test**

The development of the Child Development Knowledge Test instrument resulted from a cooperative effort of the Parenting Education Group of the American Vocational Association. The Parenting Education Group included faculty representatives and graduate students from Iowa State University, The Ohio State University and University of Minnesota, Duluth (Gritzmacher and others, 1982).

The CDKT measures student knowledge of child development/parenting concepts in five conceptual areas. These concept areas are: The Child in the Family, Prenatal Development and Birth, Growth and Development Throughout Childhood, Parenting Practices and Child Care and Special Concerns. A test grid was designed for the construction of the CDKT based on the responses of six secondary home economics teachers in Ohio. These teachers indicated whether they taught each given concept and estimated the amount of time they spent teaching them. The percentage of the total teaching time spent by all six teachers determined the
<table>
<thead>
<tr>
<th>Concept</th>
<th>Mean Time Spent by all Teachers on Concept</th>
<th>Percent of Total Time Spent Teaching Concept</th>
<th># of Questions for this sec. Concept</th>
<th>Test Items for this Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. The Child in the Family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Family Planning Divisions</td>
<td>17.5</td>
<td>4.1</td>
<td>5.8 (6)</td>
<td>1,2</td>
</tr>
<tr>
<td>2. Financial Consideration of Parenting</td>
<td>7.5</td>
<td>2.4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3. Emotional Consideration of Parenting</td>
<td>9.2</td>
<td>2.4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4. Environmental Consideration of Parenting</td>
<td>5.0</td>
<td>1.6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5. Roles and Responsibilities of Parents</td>
<td>11.0</td>
<td>3.6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>II. Prenatal Development and Birth</td>
<td></td>
<td></td>
<td>9.0 (9)</td>
<td>7,8,9</td>
</tr>
<tr>
<td>1. Reproduction</td>
<td>16.0</td>
<td>5.2</td>
<td>7,8,9</td>
<td></td>
</tr>
<tr>
<td>2. Development from Conception to Birth</td>
<td>20.2</td>
<td>6.6</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3. Maternal Health and Nutrition</td>
<td>18.2</td>
<td>5.9</td>
<td>11,12,13</td>
<td></td>
</tr>
<tr>
<td>4. Birth of the Baby</td>
<td>14.7</td>
<td>4.8</td>
<td>14,15</td>
<td></td>
</tr>
<tr>
<td>III. Growth and Development Throughout Childhood</td>
<td></td>
<td></td>
<td>14.2 (14)</td>
<td>16,17,18</td>
</tr>
<tr>
<td>1. Physical Growth and Development</td>
<td>26.7</td>
<td>8.7</td>
<td>16,17,18</td>
<td></td>
</tr>
<tr>
<td>2. Social and Emotional Development</td>
<td>28.7</td>
<td>9.4</td>
<td>19,20,21,22</td>
<td></td>
</tr>
<tr>
<td>3. Intellectual Development</td>
<td>28.7</td>
<td>9.4</td>
<td>23,24,25,26</td>
<td></td>
</tr>
<tr>
<td>4. Development of Creativity</td>
<td>24.7</td>
<td>8.1</td>
<td>27,28,29</td>
<td></td>
</tr>
<tr>
<td>IV. Parenting Practices and Child Care</td>
<td></td>
<td></td>
<td>7.2 (7)</td>
<td>30,31,32,33</td>
</tr>
<tr>
<td>1. Child Rearing Practices</td>
<td>20.5</td>
<td>6.7</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>2. Health and Nutrition of Children</td>
<td>17.0</td>
<td>5.3</td>
<td>35,36</td>
<td></td>
</tr>
<tr>
<td>3. Safety and First Aid</td>
<td>17.5</td>
<td>5.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Special Concerns</td>
<td></td>
<td></td>
<td>3.7 (4)</td>
<td>37</td>
</tr>
<tr>
<td>1. Children with Special Needs</td>
<td>6.0</td>
<td>1.9</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>2. Child Abuse</td>
<td>8.2</td>
<td>2.7</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>3. Family Support Services</td>
<td>5.7</td>
<td>1.9</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>4. Child Support Services and Legislation</td>
<td>2.0</td>
<td>0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Selection of Child Care Services</td>
<td>6.5</td>
<td>2.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: n=6 Secondary Child Development Teachers in Ohio. Questions in Section I and Section II developed at Iowa State University; Questions II developed at The Ohio State University; Questions in Section IV and Section V developed at University of Minnesota, Duluth.
number of items used in each section of the test. Six items were selected for Section I, The child in the Family, and nine items were selected for Section II, Prenatal Development and Birth from the 46 items developed by the Iowa State University researchers. Fourteen questions were selected for Section III, Growth and Development Throughout Childhood, from the 43 items developed by researchers at The Ohio State University. The 40 items developed by University of Minnesota, Duluth, participants were the source of the seven items selected for use in Section IV, Parenting Practices and Child Care and the four items for Section V, Special Concerns (Table 2).

The CDKT includes concepts that were used as a part of the national census study for which the home economics faculty at Iowa State University through the Home Economics Division of the American Vocational Association via Impact Research 1978 provided leadership and direction (Hughes, 1980). Pre and Posttest data using the CDKT collected to evaluate the effectiveness of child development/parenting programs at the secondary level in Ohio, Iowa, Minnesota, Wisconsin and New Mexico. Only those items testing successfully in the three states, Iowa, Ohio and Minnesota were considered successful. In testing, an item had to have a relative degree of difficulty of .50 or higher and a discrimination index of 50.0 or higher based on the results
of item analysis performed at all three institutions. The finalized form of the CDKT was submitted to a member of the faculty of the Department of Family Relations and Human Development for evaluation at The Ohio State University for content validity. This final form was tested for reliability in the fall of 1980. The Kuder Richardson Formula-20 was used to establish reliability. The reliability coefficients were as follows: Iowa .84, Ohio .80, and Minnesota .89 (Gritzmacher and others, 1982). In Ohio it was decided that studies should also be conducted at the adult level of child development/parenting vocational education programs.

All the concepts in the CDKT are included in the Family Life Education Curriculum Guide for Ohio (1978). These concepts were identified by program directors of the nine Family Life Education Programs (FLEP), as integral parts of the conceptual framework used in teaching infant stimulation classes offered through each program (Black, 1980). The 129 items constructed by researchers at the three initial participating universities were taken to two FLEP centers and six teachers, three in each center, identified those items their students should be expected to answer correctly. The 40 items were further validated by the responses of four teachers participating in the second phase of pilot testing conducted by this researcher and the responses of eight teachers participating in a related study (Zeolla, 1980).
The 129 items developed on the three campuses were tested in pilot studies conducted in May of 1980. Pilot studies were conducted on three levels of child development/parenting programming in Ohio: the adult level through the Family Life Education Program-Infant Stimulation Component; the secondary school level through the graduates of child development semester classes and current secondary course then in progress. Following the test administration in the pilot studies in all three states, the 129 items were subjected to item analysis and Kuder-Richardson Formula 20 procedures for internal consistency. At the adult level in Ohio, the 46 items developed at Iowa State University were tested with 28 students, two groups of seven enrolled in the infant stimulation classes and two groups of seven enrolled in other phases of family life education not directly related to child development/parenting education. Results of the Kuder-Richardson Formula 20 were .68 for the total group and .63 for the infant stimulation students alone. The 43 items developed at The Ohio State University were tested at the adult level with 28 students, 14 infant stimulation class participants and 14 students enrolled in other phases of the FLEP. Results of the Kuder-Richardson Formula 20 were .69 for all 28 students and .65 for the infant stimulation class participants alone. The 40 items developed by the University of Minnesota, Duluth were
tested with 28 students, 14 infant stimulation class participants and 14 participants in other FLEP classes not dealing with child development/parenting directly. Results of the Kuder-Richardson Formula 20 were .71 for all 28 students and .66 for infant stimulation class participants. The lower coefficient for the infant stimulation students in all three cases may be related to their mean level of educational attainment of 8.40 years of formal education while the FLEP students enrolled in other program components not directly related to child care reported 11.8 years of formal education. The initial language level of the instruments was 9th grade or higher. Further, approximately 40 percent of the infant stimulation students were assigned to their classes by the court system through Children's Services while all the participants in the control group were there by choice.

Following the approval of the 40 items for the CDKT it was determined the reading level of the instrument was a barrier to obtaining valid test results. Language level revision of the CDKT was accomplished with the approval of a member of the English department at the fifth-sixth grade level. Further consultation with FLEP directors and teachers for content validity resulted in the inclusion of both the technical and common term to assure ease of reading. Again, the reading level and content were validated by the English department representative and the content specialist.
The pilot test of CDKT with the lowered language level yielded a Kuder-Richardson Formula 20 coefficient of .71. Reliability analysis on the main study posttest resulted in a coefficient of .83 using the Kuder-Richardson Formula 20 for the 22 students completing the tested phase of the program (Table 3).

Table 3

<table>
<thead>
<tr>
<th>Time of Testing</th>
<th>Student Group</th>
<th># of Students</th>
<th>Mean</th>
<th>SD</th>
<th>KR 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Study</td>
<td>Infant Stimulation Students</td>
<td>30</td>
<td>35.72</td>
<td>3.78</td>
<td>.71</td>
</tr>
<tr>
<td>June 1980</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Study</td>
<td>Infant Stimulation Students</td>
<td>22</td>
<td>32.61</td>
<td>2.06</td>
<td>.83</td>
</tr>
<tr>
<td>October 1981</td>
<td>(last test of the tested phase of their study)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Child Care Giving Competency Scale

The 20 statements in the Child Care Giving Competency Scale (CCGCS) entitled How Capable Am I were designed by the home economics faculty advisor and four graduate students at The Ohio State University. This instrument was designed to measure the levels of competence students felt in performing given care tasks and interacting with children in given situations. The instrument provided for student responses on a five point rating scale, from 0 to 4.
A score of 4 for an item indicated the student estimated her ability as being very competent to handle the situation. Conversely if the student scored herself at 0 for an item, this indicated she did not feel at all competent to handle the situation. Each of the 28 items was scored by the student from 0-4 to indicate how competent she felt in dealing with the given situation. The main study used 20 of the 28 items that discriminated between the infant stimulation and the student involved in other phases of FLEP not directly involved with child care/parenting education. Twenty items were selected for the CCGCS instrument (Appendix B). Eighty points was the highest possible score on the CCGCS. In June 1980 the CCGCS was administered to the 30 infant stimulation students who completed the CDKT. Reliability for the 20 item scale in the pilot study was established at .52 using Cronbach's Alpha. Based on post-test results of the main study the reliability of CCGCS was .78. These results are reported in Table 4.

<table>
<thead>
<tr>
<th>Time of Testing</th>
<th>Student Group</th>
<th># of Students</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Study April 1980</td>
<td>Adult student of infant stimulation classes</td>
<td>30</td>
<td>.52</td>
</tr>
<tr>
<td>Main Study</td>
<td>Infant stimulation students (completing tested phase of their program)</td>
<td>22</td>
<td>.78</td>
</tr>
</tbody>
</table>

Table 4

Reliability of Child Care Giving Competency Scale
Attitudes Toward Parenting Scale

The attitude scale tested in the initial pilot test was designed by The Ohio State University researchers to examine the effects of child development/parenting education, at all levels, on the attitudes of students toward children and the role of parent. The scale contained 20 seven point semantic differential scales with 140 points possible on this scale. The more positive the attitude of the student, the higher the score. This instrument proved not to be discriminating between students when it was used with initial pilot study. Generally, the students indicated one extreme end of the scale or the other with little moderating between.

A modified form of the Parental Attitude Research Inventory (PARI) was selected for use in the study because the initial instrument proved to be problematic. Schaefer and Bell (1958) developed the PARI arranging 115 items into 23 five item scales. The wording of the statement in 20 of the scales express attitudes that are contradictory to those attitudes that are socially acceptable toward the rearing of children. The three remaining scales express agreement with socially accepted attitudes toward parenting or child rearing and are labeled rapport scales by Schaefer and Bell (1958).

Twenty of the scales are scored: A Agree a lot (4 points), a agree a little (3 points), d disagree a little
(2 points), and D disagree a lot (1 point). The three rapport scales are scored in the reverse order: A Agree a lot (1 point), a agree a little (2 points), d disagree a little (3 points), D disagree a lot (4 points).

Seven scales were selected from this instrument to be used in this and related studies, with the guidance of a faculty member from the Department of Family Relations and Human Development at The Ohio State University. The seven scales are:

Encouraging Verbalization
Irritability
Breaking the Will
Fear of Harming the Baby
Fostering Dependency
Acceleration of Development
Comradeship and Sharing

The first scale selected for use, Encouraging Verbalization, one of the rapport scales, is used to determine whether a parent will encourage a child to express his/her fears and conflicts with parents and their policies. The irritability scale, was developed to show possible tensions that may develop and affect parent-child relationships. Breaking the Will Scale was developed to show attitudes toward discipline and/or parental authority. The fourth scale, Fear of Harming the Baby, was designed to measure
unconscious hostile feelings toward infants, especially in disturbed mothers. The fifth scale, Fostering Dependency was designed to measure over-protectiveness and over-posses-
siveness by the parent toward the child. The sixth scale, Acceleration of Development, is used to identify parental attitudes toward imposing goals of accelerated development on their children. The seventh scale, Comradeship and Sharing, a rapport scale, reflects communicative attitudes between parent and child (Schaefer and Bell, 1958).

Schaefer and Bell tested the instrument to determine the reliability of the scales on a group of 60 new mothers at a military hospital in Washington, D.C. The mothers' ages ranged from 18 to 37. The Kuder-Richardson Formula 20 was used to determine the reliability of the scales used in Schaefer and Bell's study:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encouraging Verbalization</td>
<td>.45</td>
</tr>
<tr>
<td>Irritability</td>
<td>.54</td>
</tr>
<tr>
<td>Breaking the Will</td>
<td>.68</td>
</tr>
<tr>
<td>Fear of Harming the Baby</td>
<td>.70</td>
</tr>
<tr>
<td>Fostering Dependency</td>
<td>.73</td>
</tr>
<tr>
<td>Acceleration of Development</td>
<td>.70</td>
</tr>
<tr>
<td>Comradeship and Sharing</td>
<td>.40*</td>
</tr>
</tbody>
</table>

(*Schaefer and Bell, 1958)

The reliability coefficients for the seven scales used in this study are found in Table 5.
Table 5

Reliability of Attitudes Toward Parenting Rating Scale

<table>
<thead>
<tr>
<th></th>
<th>Schaefer &amp; Bell, 1958(^a)</th>
<th>Pilot Study 1980(^b)</th>
<th>Main Study Posttest, 1981(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed Scale(^d)</td>
<td>Alpha .46</td>
<td>Alpha .43</td>
<td>Alpha .43</td>
</tr>
<tr>
<td>Sub Scales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encouraging</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbalization</td>
<td>.45</td>
<td>.43</td>
<td>.46</td>
</tr>
<tr>
<td>Irritability</td>
<td>.54</td>
<td>.29</td>
<td>.24</td>
</tr>
<tr>
<td>Breaking the Will</td>
<td>.68</td>
<td>.49</td>
<td>.57</td>
</tr>
<tr>
<td>Fear of Harming the Baby</td>
<td>.70</td>
<td>.43</td>
<td>.51</td>
</tr>
<tr>
<td>Fostering Dependency</td>
<td>.73</td>
<td>.28</td>
<td>.08</td>
</tr>
<tr>
<td>Acceleration of Development</td>
<td>.70</td>
<td>.32</td>
<td>.39</td>
</tr>
<tr>
<td>Comradeship and Sharing</td>
<td>.40</td>
<td>.46</td>
<td>.42</td>
</tr>
</tbody>
</table>

Note:  
\(a\) = Schaefer and Bell 1958 \(n = 60\)  
\(b\) = Pilot Study 1980 \(n = 30\)  
\(c\) = Main Study 1981 \(n = 23\)  
\(d\) = Schaefer and Bell reported reliability coefficients, individual alpha coefficients for sub scales and for the 23 sub scales combined.

Thirty infant stimulation students tested this 35 item attitude scale in April 1980. The reliability for the complete scale using Cronbach's Alpha was .46. The subscale results are reported in Table 5. Posttest results of the main study based on Cronbach's Alpha established reliability at .43 for the entire 35 item
attitude scale. Subscale results for the main study are reported in Table 5.

The similarity of the reliability coefficients of the pilot and main study and their dissimilarity with Schaefer and Bell's (1958) results may be related to two factors. The first factor that contributed to these findings was the similarity between the number of study participants, 30 and 23 in the pilot and main study respectively, while there were 60 participants in the Schaefer and Bell (1958) study. The second factor was the similarity between the pilot and main study participants, each of whom came from a socio-economically deprived situation while the Schaefer and Bell participants were limited only by the hospital they selected to use for the birth of their baby.

The selected seven sub-scales from the Parental Attitude Research Inventory (PARI), retitled for this study Attitudes Toward Parenting (ATP) include 35 items repeated cyclically of one item from each of the seven scales.

Personal Data Questionnaire

The Personal Data Questionnaire (PDQ) was developed by four graduate researchers and the faculty advisor at The Ohio State University. This instrument was designed to gather information about each student participant in this
and related studies. Data derived by use of the PDQ included highest grade level accomplished, age range category, marital and occupational status, number of children they had and age at the birth of their first child. There are three rating scales embedded in the PDQ. One scale was used to measure the extent to which infant stimulation students had had direct experience with children, including their own in different contexts. Scoring on the interaction level between infant stimulation students and child(ren) from 0 to 3. The scale included 10 items and a total of 30 points possible. Using Cronbach's Alpha on the posttest results, reliability was established at .23. Results are reported in Table 6.

The low alpha coefficient of .23 for the Experiences With Children Scale can perhaps be explained by the indication of students that in six categories they had had no experience with children. Three students indicated they had worked with children on a limited basis in their church Sunday School, while 11 students indicated they had done a limited amount of babysitting. Experience with care for their own child(ren) and that of a younger brother and/or sister was the only category in which every student had participated.
Table 6
Reliability of Rating Scales Included in the Personal Data Questionnaire

<table>
<thead>
<tr>
<th>Experiences With Children Rating Scale</th>
<th>Students</th>
<th>f</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Infant stimulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 1980</td>
<td>30</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>Infant stimulation students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main study October 1981</td>
<td>23</td>
<td>.23</td>
<td></td>
</tr>
</tbody>
</table>

Influence on Child Development/Parenting Education Knowledge, Competency and Attitude As Perceived from Home Economics Courses Rating Scale

| Infant stimulation students           | April 1980          | 30  | .79               |
| Infant stimulation students           | Main study October 1981 | 23  | .87               |

Contribution to Child Development/Parenting Education Knowledge Competency and Attitudes As Perceived from Other Sources Rating Scale

| Infant stimulation                   | April 1980          | 30  | .52               |
| Infant stimulation                   | Main study October 1981 | 23  | .61               |

The second scale in the PDQ measures the influence of home economics classes on those infant stimulation students who were enrolled in one or more home economics classes.
This scale is scored from 0, no influence, to 3, much influence on all 7 items. Twenty-one points is the maximum score. Reliability based on posttest results of the main study using Cronbach's Alpha was .87. The third scale identifies 22 other possible sources of parenting and child development information. The influence of each source of information is measured on a scale of 0 to 3. Each of the 22 information sources has a range of 0, no influence, to 3, much influence and a maximum score possibility of 66. The reliability of each of the other three scales is reported in Table 6.

Child Development Competencies Taught

The checklist to identify Child Development/Parenting Competencies Taught (CDCT) (Appendix B) was designed to gather information from teachers teaching the Infant Stimulation classes offered to adults through the Family Life Education Program (FLEP). The instrument provides a means to report the concepts being taught and the relative degree of emphasis placed on each concept. The range of emphasis on each concept is from 0 to 4. 0, little emphasis, unimportant, to 4, strong emphasis, very important. Teachers indicate the proportionate amount of time devoted to teaching each concept.

Teaching Strategies Rating Scale

The Teaching Strategies Rating Scale (TSRS) was developed to collect information on the types of teaching
strategies infant stimulation teachers use when presenting child development/parenting information concepts and skill development opportunities to their adult students. The scale is divided into three major categories of teaching strategies: Audio Visual Teaching Strategies, Personal Communication Teaching Strategies and Interaction Teaching Strategies. Audio Visual Teaching Strategies include use of films, film-strips, video-tapes, slides and audio tapes. Personal Communications Strategies includes the use of lecture, discussion, student presentations, role playing, and resource people. The Interaction Teaching Strategies includes visits by parents and their infants and/or preschool children, participation in a play school at the infant stimulation class site, and participation in a public or private day care program. The rating scale responses range from never using the strategy, score of 0, to using the strategy almost all the time, score of 4 points. Researchers at The Ohio State University developed the TSRS (Appendix B).

Population and Sample
The experimentally accessible population for this study consisted of infant stimulation students and teachers in one of the nine Family Life Education Programs (FLEP) in Ohio. Three adult class groups (Total n=45) of infant
stimulation students participated in the quasi-experiments. These three intact groups of adult students were parents of (a) child(ren) between the age of birth to two and came from low socio-economic situations at or below poverty level. Each class was initiated when 15 infant stimulation students were enrolled. Enrollment of students in the classes was primarily the result of teacher recruitment of new mothers, word of mouth from others who had previously participated in the classes, referrals from social agencies and court assignments through Franklin County Children's Services of mothers who have been convicted of abusing and/or neglecting their child(ren). Data made available to the researcher indicated that students in all four categories were in each of the three classes. Specific information as to how many students from each category were in each class was not made available. Twenty-two students failed to complete the tested phase of their study. According to their pretest scores and demographic data they were quite similar to those students who did complete the tested phase of their study.

Demographic data on the 23 of the 45 infant stimulation students who completed the tested phase of their program revealed that the group had an age range of 17 to 36. The mean number of children per participant was three with a range from one to five children. The mean of students who had help with child care was seven, and in five
cases the help was given by the student's husband. The mean number of the students who were married was nine with the mean number of single or divorced students being 14. All 45 students came from lower socio-economic situations. Of the 23 who completed the tested phase of their classes 18 members were below the established poverty level and the remaining five were border line poverty level, moving back and forth across that line with the fluctuation of the job market for people in the same skilled labor category.

Data Collection

During the fall of 1980, the procedure for testing students participating in infant stimulation classes was reviewed and agreed upon by the teachers, program director, FLEP director and researcher. The instruments were presented and the manner in which student data were to be collected from the students and teachers were outlined. The predetermined class size was 15. When class enrollment reached 15 the pretests were administered and classes initiated. The pretest and last posttest for each group included all four student instruments. The interim measures involved the CDKT only. Twelve weeks of instruction that utilized the overall infant stimulation curriculum plan followed each administration of instruments. The initial group of 15 students had four test times, the
second group of 15 students had three test times with the third student group having two test times.

The structured sequences of the testing procedure for classes A, B and C was deliberate. It enabled the researcher to examine the findings of the study both for a longitudinal and cross-sectional perspective. The following figure is presented to illustrate the time frame utilized in the study.

<table>
<thead>
<tr>
<th>12 weeks</th>
<th>12 weeks</th>
<th>5 weeks</th>
<th>18 weeks</th>
<th>7 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>A₁</td>
<td>A₂</td>
<td>A₂₁</td>
<td>Break in Total Program</td>
</tr>
<tr>
<td></td>
<td>B₁</td>
<td>B₂</td>
<td></td>
<td>..........A₁</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>..........B₁</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>..........C₁</td>
</tr>
</tbody>
</table>

A - First Class with 35 weeks instruction time during testing period.
B - Second Class with 24 weeks instruction time during testing period.
C - Third Class with 12 weeks instruction time during testing period.
1 - Administered 4 instruments: Knowledge Test, Attitude Scale, Competency Scale, and Personal Data Questionnaire.
2 - Administered 1 instrument (Knowledge Test).

Figure 2. The time sequence of program testing.
During October, 1980 the materials needed for the pre-test of Class A, CDKT, ATP, CCGCS, and the PDQ, were delivered to the program director and teacher. Each instrument was coded with an identifying number to be used with each student for the duration of the testing period. The second testing period occurred in February, 1981, following 12 weeks of class instruction for class A. During the second test time class A responded to the CDKT instrument only, while class B was initiated using the pretest instruments, the CDKT, ATP, CCGCS, and PDQ. The third test period occurred following 12 weeks of class instruction of classes A and B with their respective instructors using the CDKT instrument only. At this time class C responded to the four student instruments for their pretest. The original plan called for another 12 weeks of instruction to follow in the three classes and the administration of the four student instruments in each of the classes would draw closure on the testing period planned for this study. However, following five weeks of instruction in each of the three classes, the entire program operation was interrupted for a period of 18 weeks due to a cutback of federal funds used to support the program. When support funding was reinstated, seven weeks of instruction were provided to students in each of the three classes prior to the administration of the last posttest given each group. This last posttest given to all three groups utilized all four student instruments.
Just prior to testing the precoded instruments were delivered to each teacher, to be matched with her listing of student names and assigned code numbers to assure accuracy in maintaining records. Following the administration of the given instruments, they were placed in a large manilla envelope and collected along with the two teacher instruments, the CDKT and TSRS.

**Human Subjects Approval**

In March 1979, a written request was sent to the Human Subjects Review Committee at The Ohio State University, requesting permission to conduct the study. Permission to conduct the study was granted on April 6, 1979 (Appendix D).

**Data Analysis**

All student and teacher data were collected using six instruments, four with the students and two with the teachers. Each of the six instruments was scored by hand. Scores for each student and teacher were keypunched onto IBM Computer Cards. All calculations and analyses were performed on the IBM 370/65 computer at The Ohio State University. The six hypotheses were tested using five statistical analyses. The analyses were frequencies, \(t\)-test, Pearson product-moment correlation, Analysis of Variance and the Scheffe method of multiple comparisons. The *Statistical Package for Social Sciences* (Nie et al, 1975) was used to generate and analyze the data.
Pretest scores and all posttest scores on the four student instruments for the three class groups are found in Appendix D. The PDQ encompasses demographic data for the individual student and these data are listed in Appendix D.

The level of significance established for use in all the statistical analyses was .05 except Scheffé method of multiple comparison. Since the Scheffé is conservative the level of significance testing was at the .10 level in order to determine more closely where the differences were.

Hypotheses I, II and III are grouped together because they received the same statistical treatments. The analysis of variance, t-test and the Scheffé method of multiple comparisons were the specific statistical treatments applied. Hypotheses IV, V and VI are grouped together because they are treated similarly. The specific statistical procedure used was the Pearson product-moment correlation.

**Hypothesis I**

There is a gain in knowledge scores, from pretest to posttests of the adults enrolled in infant stimulation classes on the Child Development/Parenting Knowledge Test (CDKT).

**Hypothesis II**

There is a gain in perceived competency scores from pretest to posttest of adults enrolled in infant stimulation classes on the Child Care Giving Competency Scale (CCGCS) titled How Capable Am I.
Hypothesis III

There is an increase in positive attitude (lower scores) from pretest to posttest of adults enrolled in infant stimulation classes on the Attitude Toward Parenting Scale (ATP).

Analysis of variance was used to test these three hypotheses. Iversen and Norpoth (1976) recommended analysis of variance as a means of determining the probability that a predictor variable could yield results different from simple random selection (p 5). Analysis of variance provides a means whereby the amount of variation in score between class groups can be checked against the variation in scores within each given class. The Scheffe method of multiple comparison was used when the analysis of variance detected a significant difference between the class group to determine where the difference exists. The t-test was then employed to determine differences between the pre and posttests scores from the three main instruments: CDKT, CCGCS and ATP. The use of t-test pairs procedure allowed for an examination of the differences found between pre and posttests. The SPSS sub-program t-test reduces extraneous influences on the variable by reducing the effect of subject to subject variability. The Scheffe method of multiple comparison provided a means to compare results of the testing of the three class groups. This procedure was used to determine whether treatment effects were present.
When the distribution of N among the groups is not equal, generally the Scheffe method of multiple comparison is used. When complex combinations of means are being estimated this method has a greater sensitivity.

**Hypothesis IV**

There is a positive relationship between the number of child care giving experiences by the adults and their perceived competency in providing adequate care for children on their CCGCS posttest scores.

**Hypothesis V**

There is a positive relationship between posttest scores on the CDKT, CCGCS and the teachers' use of strategies that involve direct interaction with children.

**Hypothesis VI**

There is a negative relationship between the ATP posttest score (indicating a more positive attitude toward parenting and children) and the teachers' use of instructional strategies that involve direct interaction with children.

Pearson product-moment correlation was used to determine the strength of the linear relationship between the students' experience in performing selected child care giving tasks and their perceived competency in performing these tasks.

It was also used to test the strength of the relationship between the infant stimulation students' posttest results on the CDKT, CCGCS, ATP, and the teachers' use of interaction teaching strategies. A positive relationship indicates that high value on one variable is asso-
ciated with high values on another variable. A negative relationship high values on one variable is associated with low values of another.
CHAPTER IV  
Findings and Conclusions

The fundamental purpose in this study was to determine the effectiveness of child development/parenting education as presented to infant stimulation classes of the Family Life Education Program (FLEP) or disadvantaged parents of young children in Ohio. Findings of the study and related discussion will be presented following each of the hypotheses.

Hypothesis I

There is a significant gain in knowledge scores from pre to posttests by adults enrolled in infant stimulation classes on the Child Development/Parenting Knowledge Test (CDKT).

Arithmetic means were calculated for the pretest (Kntest 1) and posttest 1 (Kntest 2) for the three classes, posttest 2 (Kntest 3) for classes A and B and posttest 3 (Kntest4) for class A (Table 7). Class A experienced a mean gain of 8.25 points in score from pretest (Kntest 1) to posttest 1 (Kntest 2) and a mean gain of 4.00 points from posttest 1 to posttest 2 (Kntest 3), with 5.25 mean score points being gained from posttest 2 to posttest 3 (Kntest 4). The overall mean score gain from pre to

57
posttest 3 for class A was 17.50 (Figure 3). Class B experienced a mean score gain of 9.15 from pre to posttest 1 with 6.00 mean points being gained from posttest 1 to posttest

Table 7
Mean Scores on Child Development/Parenting Knowledge Test

<table>
<thead>
<tr>
<th>Class</th>
<th>Pretest</th>
<th>Posttest 1</th>
<th>Posttest 2</th>
<th>Posttest 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>18.75</td>
<td>27.00</td>
<td>31.00</td>
<td>36.25</td>
</tr>
<tr>
<td>B</td>
<td>17.86</td>
<td>27.00</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>14.71</td>
<td>27.29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. Mean Scores of 3 Classes on Knowledge Pre and Posttests
2. The overall mean score for class B from pre to posttest 2 was 15.24 (Figure 3). Class C experienced a mean score gain of 12.58 points from pre to posttest 1 (Figure 3).

At pretest time class B tested almost 1 mean point below class A and class C tested slightly more than 3 mean points below class C. However, at posttest 1 time class C had experienced the greatest mean score gain at 12.50 while class B and A gained 9.15 and 8.25 respectively. At posttest 2 time class B scored 2.00 mean point higher than class A. Class A experienced a mean score gain of 5.25 points from posttest to posttest 3.

All three classes scored approximately the same on posttest 1 despite class C having scored 3 mean points or lower than classes A and B. Classes A and B were similar in their mean scores for posttest 2. Contributing to class C's more rapid rise in score beyond differences among students and teachers may have been the break in programming that occurred 5 weeks into the instruction that took place between test times (Figure 2). For although the teachers reserved the right to enter into the agreed upon curriculum where they felt it had the greatest application, generally they agreed that they began at points where the curriculum applied most readily to the lives of their students. In so doing, this allowed the students to make direct use of the content and the results more obvious to them. The 18 week break may have occurred for class C at a point where
application of the knowledge presented in class could have been readily used and internalized. It is likely classes A and B were more advanced in their study dealing with essential concepts more difficult to practice since they had been involved in their classes for 29 and 17 weeks longer respectively. Teacher lesson planning, preparation and teaching materials were shared by teachers as they interacted. This interaction gave the teacher of class C the benefit of what teacher A and B may have learned by working with their students.

The one way analysis of variance was used to test Hypothesis I and determine the amount of variation in scores between class group means against the variation in scores within each class group. The results of this procedure (Table 8) indicated there was a difference among the groups at the .05 level. See Table 9 for the mean scores of the classes.

Table 8

Analysis of Variance of Pretest Achievement Scores on the Parenting Knowledge Test by Parenting Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>65.59</td>
<td>32.74</td>
<td>3.75*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>19</td>
<td>165.79</td>
<td>8.73</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>231.28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P < .05
The Scheffe procedure was used in conjunction with the analysis of variance to determine where paired group means were different at a statistically significant level. The results indicated there was a difference at the .10 level for groups A and C. The results of the analysis of variance procedure when applied to posttest 1 (KT Test 2) revealed there was no significant difference between the scores of each group and the scores among the three groups (Table 10). The Knowledge Test means of Classes A, B and C are in Table 11.
Table 11

Mean Scores on Child Development/Parenting Knowledge Posttest 1 by Classes

<table>
<thead>
<tr>
<th>Class</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>27.00</td>
<td>27.00</td>
<td>27.29</td>
</tr>
</tbody>
</table>

The analysis of variance was again used to test the amount of variance in scores between class group means against the variation in scores within each class group for posttest 2 (Kntest 3). The results indicated the difference did reach the statistically significant level of .05 (Table 12). The Scheffe procedure was used to further determine where the difference was and if it had occurred at the .01 level of significance. The results of the

Table 12

Analysis of Variance of Second Posttest Achievement Scores on the Child Development/Parenting Knowledge Test by Parent Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>14.94</td>
<td>14.94</td>
<td>5.40*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>13</td>
<td>36.00</td>
<td>2.77</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>50.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
procedure indicated that the difference occurred at a statistically significant level. Table 13 contains the means of the second Knowledge Test by classes.

Table 13

<table>
<thead>
<tr>
<th>Class</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>31.00</td>
<td>33.00</td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Paired t-tests were also used to determine if significant differences occurred in the scores of pre and posttests for each of the class groups. The paired t-test findings on the CDKT indicated that students in all three class groups made significant score gains progressively from the pretest through each of the succeeding posttests. The differences in the scores experienced in each class from pretest (Kntest 1) and posttest 1 (Kntest 2) indicated there was a significant gain in scores by all the classes (Table 11).

The paired t-test procedure was use in comparing the results of knowledge posttest and knowledge posttest 2 for classes A and B. The results of the procedure indicated a significant score gain by both classes (Table 14).
Finally, the paired t-test procedure was used to compare class A on knowledge posttest 2 and 3 and determined the change was statistically significant (Table 14).

The results of the statistical procedures support Hypotheses I. Score gains for all three class groups were significant at each posttest time, therefore, Hypothesis I was accepted.

**Hypothesis II**

There is a significant gain in perceived competency scores from pre to posttest of the adults enrolled in infant stimulation classes on the Child Care Giving Competency Scale (CCGCS), entitled How Capable Am I.
Arithmetic means were calculated for the competency pre and posttests for each of the three classes (Table 15).

Table 15
Mean Scores on Child Care Giving Competency Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>f</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8</td>
<td>49.88</td>
<td>60.88</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>49.86</td>
<td>60.57</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
<td>43.25</td>
<td>54.50</td>
</tr>
</tbody>
</table>

Class A experienced a means score gain of 11.00 while class B experienced a mean score gain of 10.71 and class C had a mean score gain of 11.14 (Table 15). The pretest scores of class A and B were only .02 mean points different while class C scored over 6 mean points below them (Figure 4). However, class C experienced a slightly greater overall gain in mean score at posttest time. The greater gain may be due to the opportunity to utilize the most basic concepts and skills over the 18 week break. The break occurred following the first 5 weeks of instruction affording class C a longer time to internalize the basic concepts their teacher taught near the beginning. Classes A and B were past the most basic concepts taught and dealing with more complex knowledge and skill development and more likely to be aware of other areas they may need to learn about.
Analysis of variance was performed to determine differences among pre and posttest perceived competency levels. At pretest time, analysis of variance indicated there was a significant difference among and between the class groups at the .07 probability level (Table 16). The Scheffe procedure indicated class C was different from both
Table 16

Analysis of Variance of Pretest Achievement Scores on the Child Care Giving Competency Scale by Three Parenting Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>228.48</td>
<td>114.21</td>
<td>4.283*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20</td>
<td>533.23</td>
<td>26.66</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>761.71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

classes A and B when paired with each of them at the .10 level of significance. However, at posttest time the analysis of variance procedure results indicated no statistically significant difference among the paired groups (Table 17).

Table 17

Analysis of Variance of Posttest Achievement Scores on the Child Care Giving Competency Scale by Three Parenting Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>203.06</td>
<td>101.53</td>
<td>2.15</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20</td>
<td>960.59</td>
<td>48.03</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>1163.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The break in class instruction after five weeks would have provided class C with a longer period of time to practice and internalize the knowledge and skills being taught at the most basic and applicable level. Classes A and B would, at that juncture in time, be dealing with more complex concepts and whose applications could not be judged so readily. Interruption of the program may have been a strong contributor to class C's changed self perception of their competency in dealing with and caring for children.

Paired t-tests were used to determine if the differences between pre and posttest scores on the CCGCS for each of the class groups was significant. The results of the paired t-test procedure indicated the differences for each of the class groups were statistically significant (Table 18).

Table 18

<table>
<thead>
<tr>
<th>Class</th>
<th>Pretest Means</th>
<th>Posttest Means</th>
<th>t-value</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>49.88</td>
<td>60.88</td>
<td>7.64</td>
<td>.0001</td>
</tr>
<tr>
<td>B</td>
<td>49.86</td>
<td>60.57</td>
<td>3.96</td>
<td>.0007</td>
</tr>
<tr>
<td>C</td>
<td>43.25</td>
<td>54.50</td>
<td>9.69</td>
<td>.0001</td>
</tr>
</tbody>
</table>
The results of the statistical procedures indicated that all classes experienced a statistically significant gain in score on the Child Care Giving Competency Scale. Therefore, Hypothesis II was accepted.

Hypothesis III

There is a significant gain in positive attitudes (lowered scores) toward parenting and children) from pre to posttest by adults enrolled in infant stimulation classes on the Attitudes Toward Parenting scale (ATP).

Arithmetic means were calculated for the attitude pre and posttest for each of the three classes (Table 19).

Class A experienced a mean score drop of 29.75 indicating a positive change in attitude toward children and the parent role (Table 19). Class B had a drop of 19.71 in their mean score indicating positive changes in attitude toward children and parenting while class C indicated a slightly smaller drop in mean score of 18.75 (Figure 5).

The analysis of variance revealed at pretest time there was no significant difference between and among class groups (Table 20).

Table 19

Mean Scores on the Attitudes Toward Parenting Scale

<table>
<thead>
<tr>
<th>Class</th>
<th>f</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8</td>
<td>112.13</td>
<td>82.38</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>107.71</td>
<td>88.00</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
<td>123.00</td>
<td>105.25</td>
</tr>
</tbody>
</table>
The analysis of variance revealed at pretest time there was no significant difference between and among class groups (Table 20).

Table 20

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>945.35</td>
<td>472.67</td>
<td>0.456</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20</td>
<td>20734.30</td>
<td>1036.71</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>22</td>
<td>21679.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5. Mean Pre and Posttest Attitude Scale Scores by Three Classes
The posttest attitude scores for the three class groups were subjected to the analysis procedure and the results indicated there was no significant difference between and among them (Table 21).

Table 21
Analysis of Variance of Posttest Achievement Scores on Attitudes Toward Parenting Scale by Parent Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sums of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>203.06</td>
<td>101.53</td>
<td>2.147</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20</td>
<td>960.58</td>
<td>48.03</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>22</td>
<td>1163.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ATP scale test results were then subjected to paired \( t \)-test procedures comparing pre and posttest means for each class (Table 22). The results for all three classes indicated significant positive changes had occurred in the attitude scale scores.

Table 22
\( t \)-test Values of Pretest-Posttest Means for Correlated Samples of the Three Groups of Parents on the Attitudes Toward Parenting Scale

<table>
<thead>
<tr>
<th>Class</th>
<th>Pretest Means</th>
<th>Posttest Means</th>
<th>f</th>
<th>Difference Means</th>
<th>t-value</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>112.13</td>
<td>82.38</td>
<td>8</td>
<td>-29.75</td>
<td>10.95</td>
<td>.0001</td>
</tr>
<tr>
<td>B</td>
<td>107.71</td>
<td>88.00</td>
<td>7</td>
<td>-19.71</td>
<td>8.51</td>
<td>.0001</td>
</tr>
<tr>
<td>C</td>
<td>123.00</td>
<td>104.25</td>
<td>8</td>
<td>-18.75</td>
<td>4.73</td>
<td>.002</td>
</tr>
</tbody>
</table>
A lowering of scores for the classes from pre to posttest time reflects positive attitudinal changes toward children and the parenting role.

The statistical procedure used to analyze the data indicated a significant positive change in score for all three class groups. Hypothesis III was accepted.

Hypothesis IV

There is a positive relationship between the number of child care giving experiences by the adult students and their perceived competency in providing adequate care for their children as indicated by their CCGCS scores.

The Pearson product-moment correlation procedure was used to determine the strength of the linear relationship between the students experiences in performing selected child care giving tasks and their perceived self competency in providing adequate child care in selected situations. A Pearson r of .46 with a p of 0.05 resulted. Thus a significant relationship between the two variables, experiences with children and perceived self competency in caring for children, was indicated. Hypothesis IV was accepted.

Hypothesis V

There is a positive relationship between posttest scores on the CDKT and CCGCS and the teachers use of strategies that involve direct interaction with children.

Arithmetic means calculated on the teachers questionnaire revealed the teachers for all three classes used those
strategies that directly engage the students in interaction with children. The same value was given to the use of each interaction teaching strategy by all of the teachers (Table 23). The teachers further indicated that despite the length of time the students in their classes were involved in the study, they used approximately the same proportion of their total time teaching each concept.

Table 23
Mean Scores on Child Development/Parenting Posttests, Child Care Giving Competency Scales and Teaching Strategies Rating Scale

<table>
<thead>
<tr>
<th>Class/Teacher</th>
<th>CDKT Posttest</th>
<th>CCGCS Posttest</th>
<th>Teaching Strategies Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2</td>
<td>3  f</td>
<td>8  60.88 8  12  3</td>
</tr>
<tr>
<td>A</td>
<td>27.00</td>
<td>31.00 36.25 8</td>
<td>60.88 8 12 3</td>
</tr>
<tr>
<td>B</td>
<td>27.00</td>
<td>33.00 7</td>
<td>60.57 7 12 3</td>
</tr>
<tr>
<td>C</td>
<td>27.29</td>
<td>7  54.50 8</td>
<td>12 3</td>
</tr>
</tbody>
</table>

Joint weekly teacher planning conference sessions included related in-service education activities. While teachers appeared to highly value these meetings, they likely account for similar responses on the TSRS. The lack of variability in scores on the TSRS did not permit testing of the hypothesis.

Hypothesis VI
There is a negative relationship between the ATP post-test score (indicating a more positive attitude toward
parenting and children) and the teachers' use of instructional strategies that involve direct interaction with children.

Arithmetic means calculated on the teacher questionnaire revealed all three teachers used those strategies that engage the student in interaction with children as was reported in findings under Hypothesis V. All teachers gave the highest rankings possible to the use of interaction strategies (Table 24).

Table 24

<table>
<thead>
<tr>
<th>Class/Teacher</th>
<th>ATP Posttest</th>
<th>Teaching Strategies Rating Scale Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>82.38</td>
<td>12</td>
</tr>
<tr>
<td>B</td>
<td>88.00</td>
<td>12</td>
</tr>
<tr>
<td>C</td>
<td>104.25</td>
<td>12</td>
</tr>
</tbody>
</table>

Weekly teacher meetings which included sharing resources, planning and in-service education may have contributed to the teachers' identical rankings of all their interaction strategies. The lack of variability in scores on the TSRS did not permit testing of the hypothesis.
CHAPTER V
SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Summary

This study was designed to determine the effectiveness of child development/parenting education in infant stimulation classes of the Family Life Education Program (FLEP) in Ohio. While child development/parenting information can be obtained from a variety of community sources it tends to lack continuity and the individual must seek out, select and utilize those resources or reject them. The focus in this study is the impact of a community education program for socio-economically deprived adults, FLEP's infant stimulation classes on students knowledge of child development concepts, perceptions of their own competence in caring for children and their attitudes toward parenting and children.

The hypotheses investigated are incorporated with the findings of the study.

Research Design

A quasi-experimental design, based on Campbell and Stanley's (1966) Recurrent Institutional Cycle Design: A
Patched-Up Design, Number 15 was used in this study. This design complemented the cycling nature of the infant stimulation classes. Each class group is compared with their peers in other infant stimulation classes. It was not possible to find a comparison group of students who were both socio-economically deprived and parents of children between the ages of 0 and 2 willing to participate in the study.

The treatment in this study was participation in infant stimulation classes of the Family Life Education Program (FLEP) and the sample for this study was composed of 3 classes of adult students enrolled in infant stimulation classes. Classes were initiated when the enrollment had reached 15 and the preceding class had been underway for a period of 12 weeks.

Data were gathered from the students in the study at the times indicated using the following four instruments:

1. **Child Development/Parenting Knowledge Test (CDKT)** administered as a pretest and at the end of each 12 weeks of instruction as a posttest.

2. **Child Care Giving Competency Scale (CCGCS)** administered as a pretest and as a posttest at the end of the tested phase of each class.

3. **Attitude Toward Parenting Scale (ATP)** administered as a pretest and as a posttest at the end of the tested phase of each class.

4. **Personal Data Questionnaire (PDQ)** administered as a pretest and as a posttest at the end of the tested phase of each class.
Data were gathered from the infant stimulation teachers at the conclusion of the tested phase of their class on the following two instruments:

1. **Checklist to Identify Child Development/Parenting Concepts Taught (CDCT).**

2. **Teaching Strategies Rating Scale (TSRS)**

The CDKT, a 40 item multiple choice test, was designed to measure students' knowledge of selected child development/parenting education concepts. A cooperative effort of faculty and graduate students at The Ohio State University, Iowa State University, and University of Minnesota, Duluth resulted in the development of the CDKT.

Content validity was determined by three faculty members of the Department of Family Relations and Human Development at the Ohio State University. Pilot testing prior to the main study yielded a Kuder-Richardson Formula 20 reliability coefficient of .71 with 30 cases.

The ATP is a 35 item rating scale used to measure student attitudes toward children and the parenting role. The ATP is a modification of the Parental Attitude Research Inventory (Schaefer and Bell, 1958). The items for the instrument were selected with the guidance of a faculty member of the Department of Family Relations and Human Development at The Ohio State University to assure content validity. The ATP was tested for reliability in the fall of 1980 using the Kuder-Richardson Formula 20 with a resulting coefficient of .43 using 30 cases.
The CCGCS was developed by four researchers from The Ohio State University with their advisor. The 20 item scale was used to determine how capable students consider themselves to be in specific child care giving situations. Three faculty members of the Department of Family Relations and Human Development at The Ohio State University reviewed the instrument to further assure content validity. Use of the Kuder-Richardson Formula 20 resulted in a reliability coefficient of .52 with 30 cases.

The PDQ, one of the four instruments developed cooperatively at The Ohio State University, was designed and used to collect student data on their background knowledge and experience in caring for children. The PDQ has three rating scales imbedded in it all of which were subjected the Kuder Richardson Formula-20 following the pilot test. The resulting coefficient for the Experience with Children Scale was .31 with 30 cases. The limited number and types of experiences the FLEP students had with children may account for the low reliability of the Experience with Children Scale. The second PDQ scale, entitled Influence on Child Development/Parenting Education Knowledge, Competency and Attitude As Perceived from Home Economics Courses Rating Scale, yielded a coefficient of .79. The third and last scale in the PDQ, entitled Contribution to Child Development/Parenting Education Knowledge,
Competency and Attitudes as Perceived from Other Sources
Rating Scale, yielded a coefficient of .52 subjected to the Kuder Richardson Formula-20.

The CDCT and the TSRS were designed to provide information related to the child development/parenting concepts taught and the teaching strategies used in teaching. The CDCT was used to determine the specific concepts each teacher taught and the relative importance placed on each given concept. The TSRS was used to identify the teaching strategies used by each teacher and the relative importance they placed on each given teaching strategy.

Data Collection

The four student instruments, CDKT, CCGCS, ATP and PDQ were completed at pretest time for each class (Figure 2). Class A completed the CDKT following 12 weeks of instruction on three occasions. The CCGCS, ATP and PDQ were completed along with the CDKT at the third instructional period. Class B experienced two periods of 12 weeks instruction with the CDKT administered the end of each. At the end of 24 weeks of instruction the CCGCS, ATP and PDQ were also completed. Finally, class C completed all four instruments at the end of 12 weeks of instruction.

The teachers completed the CDCT and the TSRS at post-test 3 time for class A and posttest 2 time for class B. The teacher of class C completed the teacher instruments at
posttest 1 time which was at the end of the tested phase of their program.

After five weeks of instruction for the three classes, the entire program was closed for lack of the federal funding portion of the budget. After being closed for 18 weeks funding was restored to the program and it was resumed. The remaining seven weeks of the 12 week instructional block were completed and posttest materials for all three classes were delivered to the FLEP Center. This set of posttests included all student instruments. The CDCT and TSRS instruments were also delivered to be completed by the teachers. All instruments were collected the weeks following their administration.

Data Analysis

Five statistical procedures were used to test the six hypotheses. Frequencies procedure was used to sum individual responses and calculate mean scores for the three classes.

Analysis of variance was used to examine the between and within group variance in testing hypotheses 1, 2 and 3. The Scheffe method of multiple comparison, at the .10 level of significance, was used in conjunction with analysis of variance when significant difference was determined. The Scheffe method of multiple comparison was used with the three class groups to determine if treatment effects were present.
The paired \( t \)-test procedure was used to determine if statistically significant differences existed for students from pre to posttest for the first three hypotheses. The Pearson product moment correlation procedure was used to test hypotheses 4, 5 and 6 and the linear relationships among the variables in each.

**Findings**

**Hypothesis I:** There is a gain in knowledge scores from pre to posttests by adults enrolled in infant stimulation classes on the Child Development/Parenting Knowledge Test (CDKT).

Scores on each posttest were significantly higher than the test preceding it. All three classes achieved a .001 level of significant difference between pre and posttest 1. Class A achieved a .002 level of significant difference between posttest 1 and posttest 2, while class B achieved a .0001 level of significant difference between posttest 1 and posttest 2. Class A achieved a .0001 level of significant difference between posttest 2 and posttest 3. Regression did not occur during the tested phase of the program. The maximum score was 40. The mean posttest score for FLEP students were 36.25, 33.00 and 27.29 for classes A, B, and C, respectively.

Hypothesis I was supported and therefore accepted.

**Hypothesis II:** There is a gain in perceived competency scores from pretest to posttest of adults enrolled in infant stimulation classes on the Child Care Giving Competency Scale (CCGCS) titled How Capable Am I.
All posttest scores for each class were higher than their pretests at a statistically significant level, class A at .001, class B at .0007, and class C at .0001. Regression did not occur during the tested phase of the program. The maximum score possible was 80 and the FLEP mean scores were 60.88, 60.57 and 54.50 for classes A, B and C respectively.

Hypothesis II was supported and therefore accepted.

**Hypothesis III:** There is an increase in positive attitudes (lowered scores) from pre to posttest of the adults enrolled in infant stimulation classes on the Attitude Toward Parenting Scale (ATP)

All posttest scores for each class were lower than their pretest scores, and therefore more positive. The optimum score for the ATP was 35, with 140 being the most negative. The mean posttest scores were 82.38, 88.00 and 105.25 for classes A, B and C respectively. The mean test scores for each class improved more than 20 points. The changes occurred at significant levels, classes A and B at .001 and class C at .002. Regression did not occur during the tested phase of the program. A finding of potential importance was that the literature (Shaefer and Bell, 1976) contains more positive scores for the general population when compared to the FLEP students. However, it must be remembered that FLEP students come from the low socio-
economic group and no other data on ATP are available for this group.

Hypothesis III was supported and therefore accepted.

Hypothesis IV: There is a positive relationship between the number of child care giving experiences had by the adults and their perceived competency in providing adequate care for children on their CCGCS posttest scores.

A moderately significant positive relationship was evident between the number of child care giving tasks a student had experienced and her scores on the CCGCS. The Pearson r was .469 with a probability level of 0.05. Hypothesis IV was supported and therefore accepted.

Hypothesis V: There is a positive relationship between posttest scores on the CDKT, CCGCS and the teachers' use of strategies that involve direct interaction with children (score on the TSRS).

The lack of variation of scores on the Teaching Strategies Rating Scale (TSRS) did not permit testing of the hypothesis.

Hypothesis VI: There is a negative relationship between the ATP posttest scores (indicating a more positive attitude toward parenting and children) and the teachers use of instructional strategies that involve direct interaction with children (scores on the TSRS).

The use of instruction strategies was ranked the same by infant stimulation teachers. This lack in score
variation among the teachers did not permit testing of the hypothesis.

Conclusions

Infant stimulation classes of the FLEP, part of the Vocational Consumer-Homemaking Program at the adult level in Ohio, as evaluated in this study appear to have a significant impact on student knowledge of child development/parenting education concepts. They appear to have a significant impact on students' perceived competency in caring for and interacting with children and their attitudes toward children and their parenting role.

Implications

While the sample used in this study was selected deliberately, limiting its scope, the results brought to light a number of considerations for future studies. While findings of the study indicated significant positive gain for mothers participating in the program the overall effectiveness would be greatly enhanced by the involvement of both parents. The positive gains for the socio-economically deprived parents were in the realm of child development/parenting knowledge, competency in caring for and interacting with children an attitudes toward parenting and children. It would seem logical to make like educational opportunities available on a wider basis to those parents
who meet the required descriptors of a disadvantaged family with child(ren) between the ages of 0 and 2. In making the classes more widely available, there is a greater likelihood of improved parent-child relationships.

Further, modification of the regulation requiring a parent to leave the program when his/her child reaches 2 years of age to that of a level of readiness would seem to be a more desirable exit criterion. Instruments used in this study would need further refining if they were to serve as a means of arriving at an established level of competence.

Perhaps the program could be continued for these students in order to increase their learning about children and parenting by providing classes that deal with special topics or problem-centered concerns, e.g. substance abuse, on a periodic basis.

Since students in all three classes made significant score gains the teachers were apparently successful in their engagement of their students in the learning process. While the overall curriculum was the same for all three classes, there was and continues to be variation both in sequencing and teaching methodology used to engage the student. Each teacher begins with the content and methodology that best meets her students' needs. Despite the variation, each class made significant score gains. This suggests the
interaction mode of teaching is worthy of closer review and use in other adult classes.

The teacher attempts to help students become more confident in their role as parents and demonstrate more positive attitudes toward children based on sound knowledge of child development and parenting concepts. In moving toward these goals, a self-concept building component should be included in the curriculum when there is evidence of such a need. The effects of confidence in the parenting role and positive attitudes could be far reaching. Not only would the children of the infant stimulation students benefit by having their self concepts enhanced, but the infant stimulation students themselves would be better equipped as parents and as problem solvers. The infant stimulation students would have a known basis from which to judge the quality and merit of information presented to them from a variety of sources and the skill to select those pieces of information that are beneficial. These infant stimulation students who have been child abusers/neglectors will probably be better able to confront the problems leading to abuse and/or neglect of their child(ren). Parent who can recognize normal behavioral patterns, emotional, physical and cognitive development are better equipped to foster growth and deal with problems in a healthy fashion and may be less likely to abuse or neglect children. Students in the infant stimulation classes must be a parent of a child;
this makes the classes pertinent to the lives of these students at the greatest point of readiness for learning.

If change occurs in the infant stimulation student, the results could be far reaching well beyond the immediate family and generation. Families serve as the initial educational unit for the individual; thus parents with more positive attitudes toward their role as parent and child will enhance toward their children's self concepts and hence a positive ripple effect can be put into operation. Their children will more likely be positively disposed toward their own self worth and in turn their future role as parents.

Recommendations

As a result of this study, several areas of concern for future research were identified. Additional areas recommended for research are:

1. Replication of this study in other FLEP Centers to determine the level of program effectiveness attained and to compare results with those in this study.

2. Replication of the study to compare the levels of achievement attained by students who are assigned to infant stimulation classes by the court system through the Childrens Services Division of the Welfare Department and the recruited students.
3. Investigation of the use of teaching strategies by infant stimulation teachers to determine if there are techniques that are more effective in presenting child development/parenting concepts and impacting on students, student's knowledge, and competency and attitudes.

4. Investigation of the long range effects of program participation in terms of a) parenting satisfaction, b) parenting practices in effect in the homes of FLEP infant stimulation students immediately following participation in the program, and one and/or three years after class participation, and c) social integration of child(ren) of parents who participated in infant stimulation.

5. Investigation of community services available to FLEP families, i.e. referral of a child's physical problem to appropriate agency for screening and help, extent of their use of such services and perceived benefits to the family as a unit.

6. Investigation of the perceptions of individual parents about parenting and class content.

7. Relationship of knowledge, attitudes and perceived parenting competencies to variables such as IQ, own value system and being a first time parent verus having two or more children.
APPENDIX A

Child Development Knowledge Tests Tested
In Pilot Study
Dear Student,

Thank you for participating in this study. The information you provide will help us learn what you know about child development. As you take the test, if you find any items to which you object, you are free not to answer them.

Directions:

For each question, select the best answer. After choosing your answer, mark the answer sheet by filling in the correct space with a #2 pencil. Be sure that you darken the space completely. If you erase, be sure that the incorrect space is completely clean.
Family Planning

1. Why do most teenage pregnancies occur?
   A. couples had intercourse without using birth control
   B. the birth control method used didn't work
   C. couples were being responsible about their sexual behavior
   D. couples were willing to accept the consequences of an unplanned pregnancy

2. What should one do first before assuming the responsibilities of parenthood?
   A. examine one's feelings and motives related to child rearing
   B. talk with others who have raised children
   C. read and follow a book on successful parenting
   D. do all the "fun" things one wants to do first

3. Which specialist should be consulted by a couple who have been unable to conceive after a 2-year period?
   A. pediatrician
   B. marriage counselor
   C. gynecologist
   D. family practitioner

4. Which contraceptive method specifically prevents the ovum from maturing?
   A. diaphragm
   B. foam
   C. pill
   D. condom
5. Which contraceptive method has the highest failure rate?
   A. IUD
   B. diaphragm
   C. withdrawal
   D. rhythm

6. Which method allows emotional "parenting" where a child does not reside in the home?
   A. work with young people at the "Y"
   B. send presents to nieces and nephews
   C. write newspaper stories about children
   C. lecture students in the classroom

Financial

7. What are the average prenatal care and delivery costs today in the United States?
   A. less than $500
   B. $500 to $1500
   C. $1500 to $2500
   D. more than $2500

8. How do maternity benefits compare to benefits for other illnesses in health insurance plans?
   A. same benefits
   B. greater benefits
   C. fewer benefits
   D. special case
9. How many times a family's annual incomes does it take to raise a child to age 18?
   A. 1
   B. 1 1/2
   C. 2
   D. 2 1/2

10. Bob and Sue both work during the day. What do they have to provide for their four-year-old child besides food, shelter, and clothing?
    A. spending money
    B. child care
    C. separate room
    D. large, open play area

11. Karen and Steve both have jobs they enjoy. They want to have a child in the next 2 years, maintain their standard of living, and personally care for the child. What type of conflict is involved?
    A. intellectual
    B. social
    C. interpersonal
    D. value
    E. emotional

12. How would a person go about developing confidence in their ability to parent?
    A. accept yourself as you are
    B. specialize in what you do best
    C. set attainable goals for yourself
    D. find opportunities to work with children
13. Jeff and Nancy played tennis every weekend before their 6 month old child was born. Which would be best for their relationship?
   A. give up tennis until the baby is older
   B. get a sitter and continue playing tennis together on weekends
   C. continue playing tennis and take the baby along
   D. join separate men's and women's tennis groups

14. How do parents today view their parenting skills?
   A. more confident than in the past
   B. about the same as in the past
   C. less confident than in the past
   D. no longer interested

Use the following to answer questions 15-18.

Four families live in the same neighborhood and have similar incomes. The families differ in what they value most as indicated by the statements below.
   A. Adamses: Money and position are the important things in life.
   B. Bakers: We should work to make the world a better place to live.
   C. Charleses: Everyone has a right to be himself/herself.
   D. Davises: You won't be accepted if you are too different.

15. Which couple is most likely to have the wife stay at home and raise the children?

16. Which couple is most likely to limit the size of their family because of concern for overpopulation?

17. Which couple is most likely to choose to have children and each pursue their own careers?
Environmental

18. Which word refers to everything near the place where you live?
   A. enthusiasm
   B. inheritance
   C. environment
   D. intelligence

19. Which would provide the most desirable environment for children?
   A. a large nearby play area
   B. playmates in the same age group
   C. parents willing to sacrifice for the benefit of their children
   D. an encouraging and understanding atmosphere

20. Which type of house will best suit a family who emphasizes mutual respect?
   A. modern in style and economical
   B. appealing to friends and neighbors
   C. spacious areas for recreation
   D. suited to privacy needs of family members

21. Which characteristic is most important to the quality of education children receive?
   A. teacher-pupil ratio
   B. extracurricular activities available
   C. classrooms, facilities, and equipment available
   D. amount of federal aid the school receives
22. Which is not true of a good community day-care program?
   A. conducts after school program for elementary school children
   B. restricts attendance to children 18 months of age or older
   C. takes place of children's homes for part of the day
   D. offers children individual attention and affection

23. Which service of a hospital would be most helpful to a low-income teenage couple expecting their first child?
   A. extensive lab tests
   B. outpatient delivery
   C. rooming in of infant
   D. separate labor and delivery rooms

Roles and Responsibilities

24. From whom do children first learn roles?
   A. friends
   B. teachers
   C. peers
   D. family

25. Jerry is playing noisily with his tractor; Sally is quietly reading a book. Which factor least affects this stereotyped behavior?
   A. parents' attitudes
   B. television viewing
   C. genetic makeup
   D. siblings' attitudes
26. Parents are legally responsible for the economic support of a child until what age?
   A. 16
   B. 18
   C. 19
   D. 21

27. Which form of husband-wife cooperation would least likely be found in an early American family?
   A. sharing responsibility for infant care
   B. sharing of economic functions
   C. joint responsibility for children's education
   D. contributing to well-being of elderly relatives

28. Which technique is most likely to result in good eating habits for a child?
   A. require everything on the plate to be eaten
   B. give dessert only after meat and vegetables are eaten
   C. encourage child to eat all he/she possibly can
   D. offer a varied, well prepared diet

29. Julie and Fred are considering parenthood. Julie is having second thoughts because her career as an interior designer is quite demanding. Fred, an insurance agent, believes that a family is not complete without children. Which choice would most likely result in positive feelings about their marriage, careers and parenthood?
   A. Julie could interrupt her career
   B. Fred could become the major care giver
   C. they could wait until later to decide
   D. they could equally share the parenting responsibilities
Reproduction

30. How long do sperm cells remain alive and capable of fertilizing an ovum?
   A. a few minutes
   B. a few hours
   C. 12 hours
   D. 48 hours

31. Where is an egg cell usually fertilized?
   A. uterus
   B. vagina
   C. Fallopian tube
   D. ovary

32. When does ovulation usually occur on a 28-day menstrual cycle?
   A. during the first 3-5 days
   B. during the first 8-10 days
   C. on or about the 14th day
   D. during the last 3 or 4 days

33. In which situation will the Rh factor create a problem with pregnancies following the birth of the first child?
   A. mother and father are Rh positive
   B. father is Rh negative and mother is Rh positive
   C. mother is Rh negative and father is Rh positive
   D. mother and father are Rh negative
34. During which period of pregnancy are serious congenital malformations likely to occur?
   A. conception to 3 months
   B. 3 to 5 months
   C. 5 to 7 months
   D. 7 to 9 months

35. Which disease can cause congenital defects in an infant if contracted by the mother during early pregnancy?
   A. Rubella
   B. pneumonia
   C. asthma
   D. diabetes

36. What is a spontaneous abortion?
   A. when a woman has a false pregnancy
   B. when a woman has a pregnancy terminated
   C. when the fertilized egg passes through the uterus
   D. when menstruation occurs

37. What disease does a pap smear detect?
   A. diphtheria
   B. cancer
   C. tuberculosis
   D. tetanus
38. How should a woman modify the amount of food eaten from the basic four during pregnancy?
   A. fewer servings from each group
   B. fewer servings from grain group
   C. more servings from each group
   D. more servings from milk group

39. Which is a symptom for concern during pregnancy?
   A. decrease in the amount of urine passed
   B. more frequent urination
   C. mucous discharge from the vagina
   D. shortness of breath during the last trimester

40. What is the most important reason for having the first prenatal exam as early as possible in the pregnancy?
   A. make financial arrangements with the doctor
   B. select the method of birth to be used
   C. measure the birth canal
   D. determine the state of the mother's health

41. Which procedure should a pregnant woman follow in using over-the-counter medication?
   A. use as before pregnancy
   B. use at her own discretion
   C. avoid using such medication
   D. use as advised by her doctor
Birth

42. What is the last thing that happens in the birth process?
   A. baby is born
   B. uterine bleeding stops
   C. placenta is expelled
   D. breastmilk is produced

43. What is an episiotomy?
   A. removal of the Fallopian tubes
   B. enlarging of the birth canal
   C. removal of the uterus
   D. enlarging of the vaginal opening

44. What is the first opportunity to establish mother-infant bonding?
   A. breastfeed the newborn infant
   B. place the newborn on the mother's body
   C. create a harmonious home setting
   D. have the newborn stay in the same room as mother

45. What is the newborn infant's main activity?
   A. crying
   B. urinating
   C. eating
   D. sleeping
46. What is the most comfortable position for a woman to assume during the first stages of labor?

A. sit in a chair
B. stay up as long as possible
C. lay on her side
D. lay on her back
KEY

I. III. V. VII.

II. IV. VI.
11. D 22. B 34. A
   23. B

Distribution:
A - 9
B - 8
C - 14
D - 15
Child Development Knowledge Test

Dear Student,

Thank you for participating in this study. The information you provide will help us learn what you know about child development. As you take the test, if you find any items that you object to, do not feel obligated to answer them.

Directions:

For each question, select the best answer. After choosing your answer, mark the answer sheet by filling in the correct space with a #2 pencil. Be sure that you darken the space completely. If you erase, be sure that your erasure is completely clean.
1. A parent talking with a 2-year old child should
   A. use baby talk
   B. speak only when necessary
   C. speak clearly with simple words
   D. scold for pronouncing words wrong

2. To help a 5-year-old child develop responsible behavior, a parent should
   A. set a good example
   B. spank often
   C. threaten the child
   D. make the child feel guilty

3. Disciplining children means
   A. slapping and spanking
   B. letting the father decide
   C. sending them to bed
   D. teaching them self-control

4. The main reason 4-year-old children lie is to
   A. get others in trouble
   B. prevent punishment
   C. make up a good story
   D. use their imagination

5. Children have temper tantrums to
   A. get even with other children
   B. show their strength
   C. get attention from others
   D. act sassy
6. When children are playing, it is best when
   A. girls play girls' games, boys play boys' games
   B. girls and boys are allowed to play the same games
   C. girls play with dolls, boys play with trucks
   D. girls wear dresses, boys wear jeans

7. When children are learning to dress themselves, select clothing with
   A. large buttons
   B. small buttons and snaps
   C. openings in the back
   D. separating zippers

8. The factor which is least important in selecting clothing for children is
   A. durable, washable fabric
   B. comfortable fit
   C. latest modern style
   D. bright cheerful colors

9. Children may resist going to bed when the parent has
   A. used the bedroom as a place for punishment
   B. read them calm, happy stories
   C. given them a 15 minute notice
   D. talked quietly with them

10. Television influences children by showing
    A. cartoons with characters acting nice to each other
    B. characters which children imitate
    C. many realistic family scenes
    D. very few violent shows requiring supervision
11. When children age 3-6 watch television, a parent should
   A. view and discuss shows with the child
   B. allow them to view as long as they wish
   C. use it often as a substitute babysitter
   D. turn the volume loud to be heard over children's voices

12. When children ask questions about sexuality, a parent should
   A. avoid answering until they are teenagers
   B. change the subject
   C. shame them for asking such questions
   D. answer calmly using simple correct terms

13. When children age 4-5 years undress and play doctor, it is usually
    because they are
   A. curious about their bodies
   B. anxious to practice health skills
   C. bored with other games
   D. in uncomfortable clothes

14. Before a parent takes a child to a dentist for the first time, the
    parent should
   A. let other children tell how it hurts
   B. tell the child not to cry
   C. let the visit be a surprise
   D. explain what will happen

15. A parent can help children feel secure by
   A. giving them plenty of toys
   B. telling and showing them they are loved
   C. always providing exciting things to do
   D. always joining in their play
16. To prevent problems at mealtime, a parent should
   A. make the child eat everything served
   B. insist on large servings
   C. promise dessert as a reward
   D. provide happy conversation

17. When children misbehave, a parent should first
   A. isolate the child in the bedroom
   B. spank hard so that the behavior isn't repeated
   C. ignore it until the child does it again
   D. try to understand the reason for the behavior

18. Children who show off or act silly are usually doing so for
   A. power
   B. revenge
   C. attention
   D. sympathy

19. A parent should consult a doctor if a child does not begin to walk by age
   A. 9 months
   B. 1 year
   C. 2 years
   D. 3 years

20. A parent who is very angry with a child's behavior should
   A. cool off, then talk with child
   B. shake the child by the shoulders
   C. make the child skip a meal
   D. lock the child in a closet
21. A parent can best help a 3-year-old child overcome fear of the dark by
   A. saying that big children aren't afraid
   B. leaving the bedroom door slightly open
   C. sleeping with the child
   D. reading many scary stories

22. Sue took several cookies against her parent's orders. The parent should tell Sue that
   A. she is a bad girl
   B. her behavior makes the parent unhappy
   C. she'll get punished next time
   D. she'll grow up to be a thief

23. Toilet training should begin when a child is near age
   A. 9 months
   B. 1 year
   C. 2 years
   D. 3 years

24. For a crawling infant, which practice would not be appropriate?
   A. select a crib with bars 3 inches apart
   B. cover electrical outlets near the floor
   C. close off stairs with a gate
   D. keep the infant in a playpen all day

25. Which precaution would not be appropriate for toddlers?
   A. do not allow them to play with children's scissors
   B. keep cabinets with cleaning supplies locked
   C. the living room and kitchen should be off limits
   D. stay with the toddler while the child is bathing
26. Which of the following treatments should be used for minor burns?
   A. hold the burned area under lukewarm running water
   B. rush the child to a doctor's office or hospital
   C. immediately place the burned area in cold water
   D. break the small blisters which form

27. If a child swallows a poison, you should
   A. try to make the child vomit or throw up immediately
   B. call a doctor or poison control center
   C. keep the child active and moving
   D. have the child drink soda pop

28. Which of the following would not be a sign that an infant might be ill?
   A. glassy-looking eyes
   B. feverish face
   C. unusually hungry
   D. listlessness

29. How should a parent prepare a child for a stay in the hospital?
   A. explain to the child what to expect
   B. tell the child the shots will not hurt
   C. do not tell the child ahead of time, so he/she won't worry
   D. tell the child how much fun he/she will have at the hospital

30. The main advantage of breast-feeding is
   A. the baby must be held while being fed
   B. breast milk helps protect the baby against a number of illnesses
   C. the quality of the milk depends on the diet of the mother
   D. the mother must do all of the feeding
31. The main advantage of bottle-feeding is
   A. it costs less than breast-feeding
   B. fewer allergies are found in bottle-fed babies
   C. it is easier to overfeed the baby
   D. both mother and father can be involved in feeding the baby

32. Parents need to immunize their children against all the following except
   A. chicken pox
   B. polio
   C. measles
   D. tetanus

33. Which would be most likely to have planned activities to prepare children for kindergarten?
   A. family day care centers
   B. group day care centers
   C. nursery schools
   D. home care by a friend or relative

34. The best type of day care program for a 4-year-old child would be one where a great deal of time is spent
   A. watching television
   B. in free play activities
   C. resting and playing quietly alone
   D. in planned activities

35. A good snack for a child would be
   A. potato chips
   B. peanut butter sandwich
   C. candy
   D. soda pop
36. Which of these injuries would usually require taking the child to a doctor?
   A. a temperature of 100 degrees F
   B. a nosebleed
   C. a puncture wound from stepping on a nail
   D. a splinter in the child's arm

37. The main cause of child abuse is usually
   A. a desire to teach the child right from wrong
   B. a desire to make the child learn to obey
   C. stress and problems in the life of the abuser
   D. a desire to punish the child

38. If you see a child with large bruises and belt marks on his/her back and arms, you should
   A. ignore it and do nothing
   B. tell a teacher, counselor or policeman about it
   C. talk it over with your friends
   D. tell the child's parents if they don't stop abusing the child, you will report them.

39. Which is an example of child abuse?
   A. sending the child to his/her own room without dessert
   B. making the child wear old, patched clothing
   C. constantly criticizing the child
   D. making the child sit on a chair for an hour for punishment

40. Which would be a good food choice for a 3-month-old child?
   A. small pieces of meat
   B. whole vegetables
   C. "finger foods" such as grapes or celery
   D. fruit juice
KEY

2. A 22. B
3. D 23. C
4. B 24. D
5. C 25. C
7. A 27. B
9. A 29. A
11. A 31. D
12. D 32. A
13. A 31. C
14. D 34. D
15. B 35. B
17. D 37. C
18. C 38. B
20. A 40. D

Distribution:

A - 8
B - 10
C - 12
D - 10
Dear Student,

Thank you for participating in this study. The information you provide will help us learn what you know about child development. As you take the test, if you find any items to which you object, you are free not to answer them.

Directions:

For each question, select the best answer. After choosing your answer, mark the answer sheet by filling in the correct space with a #2 pencil. Be sure that you darken the space completely. If you erase, be sure that the incorrect space is completely clean.
Physical Growth and Development

1. A child’s ability to balance his/her body can be developed by
   A. building with blocks.
   B. playing a bean-bag game.
   C. riding a scooter.
   D. playing with play dough.

2. An example of a large muscle building toy for a five year old is
   A. scissors.
   B. measuring cups.
   C. scooter.
   D. color prism.

3. Small muscles would be developed through activities such as
   A. finger painting.
   B. running.
   C. riding a tricycle.
   D. pulling a wagon.

4. Which statement best describes human growth and development?
   A. It is the same for all children.
   B. It is a continuous process.
   C. It does not follow a pattern.
   D. It is accelerated for boys.

5. When do a baby’s teeth start developing?
   A. at birth.
   B. during the last three months of pregnancy of the mother.
   C. after the baby starts eating solid food.
   D. at six months of age.
6. To soothe a child's teething pain, the most effective remedy is
   A. cold water to drink.
   B. a crisp cookie to chew
   C. a cold teething ring.
   D. a bottle of milk.

7. Toilet training can generally be encouraged by
   A. requiring the child to remain on the training set until he/she cooperates.
   B. talking to the child about this "grown-up" behavior.
   C. making the child feel ashamed for his/her accidents.
   D. letting the child make his/her own decision.

8. When using words, what is a two-year-old child likely to do?
   A. starts putting five or more words into sentences.
   B. starts putting two or three words together.
   C. constantly asks questions.
   D. babbles and slurs the words.

9. In the selection of clothes for a four-year-old, the most important consideration should be
   A. the child's likes and dislikes.
   B. comfort and fit.
   C. durability.
   D. ease of laundering.

10. A baby who is 2 months old can be expected to
    A. roll over completely at will.
    B. follow objects he/she is looking at by turning his/her head.
    C. recognizes his/her mother from other people.
    D. bring is/her hands or objects to his/her mouth at will.
11. Which statement best describes newborn babies?
   A. They are extremely delicate and fragile.
   B. They smile in response to their mothers' attention.
   C. They don't cry unless something is wrong.
   D. They need to be fed on schedule.

12. When you are bathing a two-year-old child, which of the following is appropriate for you to do?
   A. Leave the child alone in tub if he/she is no longer afraid of water.
   B. Supervise the child constantly.
   C. Leave the child to play by himself/herself in the tub.
   D. Encourage the child to practice swimming skills.

13. Which one of the following is not a cause for occasional "accidents" after toilet training?
   A. shame.
   B. frustration.
   C. forgetfulness.
   D. stubbornness.

14. An infant makes physical responses by moving his/her entire body. As the child grows older, this response changes so that the child now uses only certain muscles as he/she responds. This development is called
   A. the head to foot sequence.
   B. the near to far sequence.
   C. the mass to specific sequence.
   D. the law of developmental direction.
Social Emotional

15. When a child continually asks "why" to questions, the child should be
   A. taught to accept parents answer and not question.
   B. given the correct answer.
   C. told that "always asking why is impolite."
   D. ignored in order to stop the whys so that the child learns
      not to ask so many questions.

16. When a baby of three months is excited by a pleasant experience, the
    baby usually
   A. cries or screams.
   B. falls asleep.
   C. gurgles or squeals.
   D. does nothing, because the baby is too young.

17. When a child shows fear, what should the adults around him/her do?
   A. Ignore the fear.
   B. Explain that there is nothing to be afraid of.
   C. Try to discover the cause for the fear.
   D. Encourage the child to face the fear and overcome it.

18. Which activity would most ten month old babies enjoy least?
   A. Being with babies of the same age.
   B. Games like "peek a boo" and "patty cake".
   C. Hearing nursery rhymes.
   D. Being held by their father.
19. A child who is two-years-old often has a problem sleeping through the night that may be caused by
   A. resistance to going to bed.
   B. fear of imaginary dangers.
   C. a need for companionship.
   D. a need to get his/her own way.

20. Parents help their children develop positive feelings about themselves (self esteem) by
   A. being immediately available, no matter what.
   B. teaching them that children are to be seen not heard.
   C. bragging about them at every opportunity.
   D. accepting them as they are and respecting their ideas.

21. When does a baby's sense of trust begin to develop?
   A. At birth.
   B. When the baby can perform basic skills successfully.
   C. When the baby starts to talk.
   D. When the baby starts to walk.

22. Most of the time a two-year-old child enjoys playing
   A. alone or with one other friend.
   B. neighborhood games.
   C. in large groups.
   D. in play pen.

23. At what age are children generally ready to share with others?
   A. two years old.
   B. three years old.
   C. four years old.
   D. five years old.
24. When a two-year-old child has a temper tantrum, his/her parents should
   A. distract the child with another activity.
   B. feel guilty because they caused the tantrum.
   C. punish the child.
   D. leave the child alone until he/she has calmed down.

25. For a 3 or 4-year-old child, play is not
   A. a means of passing time until snack is ready.
   B. part of the socialization process.
   C. fun.
   D. a way of meeting new friends.

26. If a three or four-year-old has an imaginary friend, it indicates that he/she
   A. needs affection.
   B. has a vivid imagination.
   C. is seeking more attention from his parents.
   D. needs a brother or sister.

27. When a child receives adequate expression of affection from his/her parents, the child will
   A. find it easier to accept himself/herself and others.
   B. learn to expect his/her parents to give him/her gifts as an expression of their affection.
   C. become dependent on others for constant displays of affection.
   D. always be obedient as a way of returning their love.

28. Which of the following ways is not a healthy way for a child to express anger?
   A. Sitting quietly and calming down.
   B. Telling the person with whom he/she is angry why he/she is angry.
   C. Doing something active, for example riding a tricycle.
   D. Hitting the person who has made him/her angry.
29. A good way to help a child deal with his feelings of jealousy is to:
   A. punish him/her when he/she shows signs of jealousy.
   B. explain to him/her why it is "silly" to be jealous.
   C. show him/her why jealousy is bad.
   D. try to give him/her more attention.

30. The intellectual development of the baby before birth, can be influenced by
   A. basic nutritional condition of the mother.
   B. the physical exercise of the mother.
   C. the educational level of the parents.
   D. the type of reading done by the mother during pregnancy.

31. Which of these stories would not be appropriate for a three or four year old child?
   A. Chicken Little.
   B. The Little Engine That Could.
   C. Snow White and the Seven Dwarfs.
   D. Peter Rabbit.

32. At what age is the intellectual growth of a child most rapid?
   A. 6 to 12 months.
   B. Birth to 24 months.
   C. 2 to 3 years.
   D. Birth to 5 years.

33. In helping children develop sound language patterns, parents should
   A. use short words and sentences.
   B. use baby talk.
   C. speak clearly in normal tones.
   D. speak slowly and emphasize each word.
34. A good way to help a three-year-old develop the ability to think is to provide the child with
A. wind-up or mechanical toys.
B. a toy he/she can manipulate and find new ways of using.
C. the simple familiar toys with which he/she will be comfortable.
D. a new game and explain how it is to be played.

35. When a child becomes aware that the three measuring cups he/she is playing with are different sizes and one fits into the other, the child is developing the idea of size primarily through
A. reasoning.
B. questioning.
C. exploring.
D. manipulating.

36. An infant's intellectual development can best be stimulated by
A. a small, affectionate pet.
B. use of mobiles and colorful toys.
C. a busy, noisy environment.
D. by providing time in a play pen.

37. When a child is playing in a sandbox, filling and emptying containers, he/she is most likely developing the idea of
A. number.
B. color.
C. space.
D. shapes.

38. Which item listed below is not typical of a five-year-old's intellectual development?
A. Uses well defined sentences.
B. Likes to count and can count to ten.
C. Can carry a plot in a story and repeat a long sentence accurately.
D. Asks frequent questions to which he/she already knows the answers.
39. As a child nears kindergarten age, which one of these behaviors is not an indication of a possible learning problem?
   A. inability to walk on a balance beam.
   B. easily distracted, short interest span.
   C. draws unhappy expressions on sketches of people.
   D. does not show a preference for either right or left handedness.

Creative Expressions

40. With what kind of play activities can a two-year-old be most successful?
   A. coloring pictures.
   B. cutting with child-size scissors.
   C. stacking blocks into towers of four blocks high.
   D. riding a tricycle.

41. What kinds of playthings are least effective in stimulating a child's creative self expression?
   A. Paints, clay, tools.
   B. Mind-up or mechanical toys.
   C. Blocks and manipulative toys.
   D. Coloring books and crayons.

42. When a child is coloring with crayons, one should
   A. praise the child for coloring.
   B. correct the child when using wrong colors.
   C. remind the child to stay in the lines.
   D. ask the child what he is coloring.

43. A child's ability to be creative may be lessened when parents
   A. present situations that stimulate curiosity.
   B. permit the child to explore.
   C. accept the child's ideas.
   D. provide a model for the child to copy.
### Key

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### Distribution:

- A - 10
- B - 13
- C - 12
- D - 8
APPENDIX B

Instrument Agreed Upon by Researchers in Three States
Dear Student:

Thank you for participating in this study. The information you provide will help us learn what you know about child development. As you take the test, if you find any items to which you object, you are free not to answer them.

Directions:

For each question, select the best answer. After choosing your answer, mark the space beside your selection.
1. What should one do first before deciding to become a parent?
   A. Examine one's feelings and reasons for wanting a child.
   B. Talk with others who have raised children.
   C. Read books and magazine articles on parenting.
   D. Do all the "fun" things one wants to do.

2. Which situation provides an opportunity to use parenting skills when a child does not live in the home?
   A. Work with young people at the "Y".
   B. Send money to needy children.
   C. Write newspaper stories about children.
   D. Lecture students in the classroom.

3. How many times a family's income does it take to raise a child to age 18?
   A. 1
   B. 1 1/2
   C. 2
   D. 2 1/2

4. How would a person go about developing confidence in his/her ability to be a parent?
   A. Accept yourself as you are.
   B. Specialize in what you do best.
   C. Set attainable goals for yourself.
   D. Find opportunities to work with children.
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A. Uterus
B. Vagina
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8. When does ovulation usually occur on a 28-day menstrual cycle?

A. During the first 3-5 days.
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9. In which situation will the Rh factor create a problem with pregnancies following the birth of the first child?

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A. Conception to 3 months.
B. 3 to 5 months.
C. 5 to 7 months.
D. 7 to 9 months.

11. Which disease can cause birth defects in an infant if contracted by the mother during early pregnancy?

A. Rubella
B. Pneumonia
C. Influenza
D. Diabetes

12. How should a woman modify the amount of food eaten from the Basic Four during pregnancy?

A. Fewer servings from each group.
B. Fewer servings from the grain group.
C. More servings from each group.
D. More servings from the milk group.
13. Which is a symptom for concern during pregnancy?
   A. Decrease in the amount of urine passed.
   B. More frequent urination.
   C. Mucous discharge from the vagina.
   D. Shortness of breath during the last trimester.

14. What is the last thing that happens in the delivery process?
   A. Baby is born.
   B. Uterine bleeding stops.
   C. Placenta is expelled.
   D. Breastmilk is produced.

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   A. Breastfeed the newborn infant.
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16. Which statement best describes newborn babies?
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   C. They cry when hungry or uncomfortable.
   D. They need to be fed on schedule.

17. When using words, what is a 2-year-old child likely to do?
   A. Starts putting five or more words into sentences.
   B. Starts putting two or three words together.
   C. Constantly asks questions.
   D. Babbles and slurs the words.
18. An example of a large-muscle building toy for a 5-year-old is
   A. Scissors
   B. Measuring cups.
   C. Scooter.
   D. Color prisms.

19. When does a baby's sense of trust begin to develop?
   A. At birth.
   B. When the baby can perform basic skills successfully.
   C. When the baby starts to talk.
   D. When the baby starts to walk.

20. A good way to help a child deal with his/her feelings of jealousy is to
   A. Punish him/her when he/she shows signs of jealousy.
   B. Explain to him/her why it is "silly" to be jealous.
   C. Show him/her why jealousy is bad.
   D. Try to give him/her more attention.

21. If a 3 or 4 year old has an imaginary friend, it indicates that he/she
   A. Needs affection.
   B. Has a vivid imagination.
   C. Is seeking more attention from his/her parents.
   D. Needs a brother or sister.
22. When a child receives adequate expression of affection from his/her parents, the child will

A. Find it easier to accept himself/herself and others.
B. Learn to expect his/her parents to give him/her gifts as an expression of their affection.
C. Become dependent on others for constant displays of affection.
D. Always be obedient as a way of returning their love.

23. The intellectual development of the baby before birth can be influenced by

A. Basic nutritional condition of the mother.
B. The physical exercise of the mother.
C. The educational level of the parents.
D. The type of reading done by the mother during pregnancy.
24. An infant’s intellectual development can best be stimulated by
   A. A small, affectionate pet.
   B. Use of mobiles and colorful toys.
   C. A busy, noisy environment.
   D. Providing time in a play pen.

25. In helping children develop sound language patterns, parents should
   A. Use short words and sentences.
   B. Use baby talk.
   C. Speak clearly in normal tones.
   D. Speak slowly and emphasize each word.

26. When a child is playing in a sandbox, filling and emptying containers, he/she is most likely developing the idea of
   A. Number.
   B. Texture.
   C. Space.
   D. Shapes.

27. What kinds of playthings are least effective in stimulating a child's creative self-expression?
   A. Paints, clay, tools.
   B. Wind-up or mechanical toys.
   C. Blocks and manipulative toys.
   D. Coloring books and crayons.
28. A child's ability to be creative may be lessened when parents
   A. Present situations that stimulate curiosity.
   B. Permit the child to explore.
   C. Accept the child's ideas.
   D. Provide a model for the child to copy.

29. With what kind of play activities can a 2-year-old be most
    successful?
   A. Coloring pictures.
   B. Cutting with child-size scissors.
   C. Stacking blocks into towers of four blocks high.
   D. Riding a tricycle.

30. When children are learning to dress themselves, provide
    clothing with
   A. Large buttons.
   B. Small buttons and snaps.
   C. Zippers in the back.
   D. Separating zippers.

31. Television influences children by showing
   A. Cartoon characters acting nice to each other.
   B. Characters which children imitate.
   C. Many realistic family scenes.
   D. Few violent shows.
32. To prevent problems at mealtime, a parent should
A. Make the child eat everything served.
B. Insist on large servings.
C. Promise dessert as a reward.
D. Provide pleasant conversation.

33. Sue, age 3, took several cookies against her parent's orders. The parent should tell Sue that
A. She is a bad girl.
B. Her behavior makes the parent unhappy.
C. She'll get punished next time.
D. She'll grow up to be a thief.

34. Which of the following would not be a sign that an infant might be ill?
A. Glassy-looking eyes.
B. Feverish face.
C. Unusually hungry.
D. Listlessness.

35. Which of the following treatments should be used for minor burns?
A. Hold the burned area under lukewarm running water.
B. Cover the burned area with butter.
C. Immediately place the burned area in cold water.
D. Break the small blisters which form.
36. If a child swallows a poison, you should
   A. Try to make the child vomit or throw up immediately.
   B. Call a doctor or poison control center.
   C. Keep the child active and moving.
   D. Have the child drink soda pop.

37. Low birth weight, abnormal heart, joint defects and abnormal eye shapes are possible birth defects due to the mother's use of
   A. Cigarettes.
   B. Coffee.
   C. Cola beverages.
   D. Beer or liquor.

38. Which is an example of child abuse?
   A. Sending the child to his/her room without dessert.
   B. Not allowing TV viewing for 2 weeks.
   C. Constantly criticizing the child.
   D. Making the child sit on a chair for an hour for punishment.

39. Children who are disadvantaged would benefit most by
   A. Playing with their neighbors.
   B. Starting kindergarten a year later than usual.
   C. Visiting parks and playgrounds.
   D. Participating in a Head Start program.
40. Which would be most likely to have planned activities to prepare children for kindergarten?

A. Family day care centers.
B. Group day care center.
C. Nursery schools.
D. Home care by a friend or relative.
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APPENDIX C

Instruments Used in the Main Study
CHILD DEVELOPMENT KNOWLEDGE TEST

Dear Student,

Thank you for participating in this study. The information you provide will help us learn what you know about child development. As you take the test, if you find any items to which you object, you are free not to answer them.

Directions:

For each question, select the best answer. After choosing your answer, circle the letter next to it.
1. What should one do first before deciding to become a parent?

A. Examine one's feelings and reasons for wanting a child.
B. Talk with others who have raised children.
C. Read books and magazine articles on parenting.
D. Do all the "fun" things one wants to do.

2. Which situation provides an opportunity to use parenting skills when a child does not live in the home?

A. Work with young people at the "Y".
B. Send money to needy children.
C. Write newspaper stories about children.
D. Lecture students in the classroom.

3. How many times a family's annual income does it take to raise a child to age 18?

A. 1
B. 1.5
C. 2
D. 2.5

4. How would a person go about developing confidence in his/her ability to be a parent?

A. Accept yourself as you are.
B. Do what you do best.
C. Set reasonable goals for yourself.
D. Find ways to work with children.

5. Which is not true of a good community day-care program?

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11. Which disease can cause birth defects in an infant if contracted by the mother during early pregnancy?
    A. German measles
    B. Pneumonia
    C. Flu (Influenza)
    D. Diabetes

12. How should a woman change her diet during pregnancy?
    A. Less of everything.
    B. Less cereal/grain.
    C. More of everything
    D. More milk.

13. What should you worry about during pregnancy?
    A. Less urine.
    B. More frequent urination.
    C. Mucous discharge from the vagina.
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ATTITUDES TOWARD PARENTING

Read each of the statements below and then rate them as follows:

A  a  b  D
agree agree disagree disagree
a lot a little a little a lot

Indicate your opinion by drawing a circle around the A if you agree a lot; around the a if you agree a little; around the d if you disagree a little; and around the D if you disagree a lot.

There are no right or wrong answers, so answer according to your own opinion. It is important that you respond to all the statements.

1. Children should be allowed to disagree with their parents if they feel their own ideas are better.  A a d D

2. Children will get on any parent's nerves if he/she has to be with them all day.  A a d D

3. Some children are just so bad that they must be taught to fear adults for their own good.  A a d D

4. You must always keep a tight hold of baby during his/her bath for in a careless moment the baby might slip.  A a d D

5. Good parents should shelter their child from life's little difficulties.  A a d D

6. Most children are toilet trained by 15 months of age.  A a d D

7. Children would be happier and better behaved if parents would show an interest in them.  A a d D

8. Children should be encouraged to tell their parents whenever they feel family rules are unreasonable.  A a d D

9. Parents very often feel that they can't stand their children a moment longer.  A a d D

10. It is frequently necessary to drive the mischief out of a child before he/she will behave.  A a d D

11. All young parents are afraid of their awkwardness in handling and holding the baby.  A a d D

12. A parent should do his/her best to avoid any disappointment for his/her child.  A a d D
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<td>The sooner a child learns to walk, the better he/she is trained.</td>
<td>A a d D</td>
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<td>14.</td>
<td>Laughing at children's jokes and telling children jokes makes things go more smoothly.</td>
<td>A a d D</td>
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<td>15.</td>
<td>A child has a right to his/her own point of view and ought to be allowed to express it.</td>
<td>A a d D</td>
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<td>16.</td>
<td>It's a rare parent who can be sweet and even tempered with his/her children all day.</td>
<td>A a d D</td>
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<td>17.</td>
<td>A wise parent will teach a child early just who is boss.</td>
<td>A a d D</td>
<td></td>
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<td>18.</td>
<td>Parents never stop blaming themselves if their babies are injured in accidents.</td>
<td>A a d D</td>
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<td>19.</td>
<td>A child should be protected from jobs that might be too tiring or hard for him/her.</td>
<td>A a d D</td>
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<td>20.</td>
<td>The earlier a child is weaned from its emotional ties to its parents the better it will handle its own problems.</td>
<td>A a d D</td>
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<td>Parents who are interested in hearing about their children's parties, dates and fun, help them grow up right.</td>
<td>A a d D</td>
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<td>22.</td>
<td>A child's ideas should be seriously considered in making family decisions.</td>
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<td>23.</td>
<td>Raising children is a nerve-wracking job.</td>
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<td>24.</td>
<td>Children need some of the natural meanness taken out of them.</td>
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<td>25.</td>
<td>Most parents are fearful that they may hurt their babies in handling them.</td>
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<td>26.</td>
<td>Parents should know better than to allow their children to be exposed to difficult situations.</td>
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<td>27.</td>
<td>Parents should make an effort to get a child toilet trained at the earliest possible time.</td>
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<td>If parents would have fun with their children, the children would be more apt to take their advice.</td>
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<td>29.</td>
<td>When a child is in trouble he/she ought to know he/she won't be punished for talking about it with his/her parents.</td>
<td>A a d D</td>
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<td>30.</td>
<td>It's natural for parents to &quot;blow their top&quot; when children are selfish and demanding.</td>
<td>A a d D</td>
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31. It is sometimes necessary for the parents to break the child's will.

32. A parent's greatest fear is that in a forgetful moment, he/she might let something bad happen to the baby.

33. Children should be kept away from all hard jobs that might be discouraging.

34. A child should be weaned away from the bottle as soon as possible.

35. When you do things together, children feel close to you and can talk easier.
For each of the statements listed below, indicate how capable you feel about handling the situation by placing a check mark (✓) in the space that best describes how you feel about handling that situation. Also place a check mark (√) in the appropriate space to indicate whether or not you have had the experience.

<table>
<thead>
<tr>
<th>Have You ever experienced this?</th>
<th>Cannot handle this</th>
<th>Not sure if I can handle this</th>
<th>Can handle this most of the time</th>
<th>Very capable of handling this</th>
<th>Might be able to handle this</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td></td>
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</tr>
</tbody>
</table>

1. Coping with a two-year-old's temper tantrum
2. Feeding an infant (under 6 months)
3. Planning activities that will hold the interest of preschool children
4. Changing a baby's diaper
5. Bathing and dressing an infant (under 6 months)
6. Dealing with a stubborn child (2 to 5 years old)
7. Caring for a child with a high fever
8. Bathing and dressing a two-year-old child
9. Helping a child learn to speak
10. Easing an infant's teething pain
<table>
<thead>
<tr>
<th></th>
<th>Have you ever experienced this?</th>
<th>Cannot handle this</th>
<th>Not sure if I can handle this</th>
<th>Might be able to handle this</th>
<th>Can handle this most of the time</th>
<th>Very capable of handling this</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Caring for a newborn baby</td>
<td></td>
<td></td>
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<tr>
<td>12. Assisting a toddler with a toilet training</td>
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<tr>
<td>13. Teaching a toddler to feed himself/herself</td>
<td></td>
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<tr>
<td>14. Caring for a child in an emergency situation</td>
<td></td>
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<tr>
<td>15. Making a child aware of dangerous situations</td>
<td></td>
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<tr>
<td>16. Selecting nutritious food for children</td>
<td></td>
<td></td>
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<tr>
<td>17. Dramatizing (using puppets or acting out) stories when presenting them to children</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>18. Helping children develop their imagination through make-believe play or pretending</td>
<td></td>
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<tr>
<td>19. Using music (songs and simple instruments) and dance to help children express their feelings</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>20. Helping children participate in simple cooking activities</td>
<td></td>
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</tbody>
</table>
PERSONAL DATA QUESTIONNAIRE

Listed below are some situations that might have provided you with an opportunity to spend some time working with children. Indicate the amount of experience you have had with children in each of these situations by placing a check mark (✓) in the appropriate space.

<table>
<thead>
<tr>
<th>Situation</th>
<th>No experience</th>
<th>Little experience</th>
<th>Some experience</th>
<th>Much experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caring for younger members of your family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Babysitting</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Nursery school that was a part of your home economics class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteer in a day care center</td>
<td></td>
<td></td>
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<tr>
<td>Playground aide</td>
<td></td>
<td></td>
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<tr>
<td>Aide in a clinic for handicapped children</td>
<td></td>
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<tr>
<td>Sunday school teacher at your church</td>
<td></td>
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<td></td>
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<tr>
<td>Nursery aide in your church nursery</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other (Please tell me what other experiences you have had with children)</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Which of the following sources have contributed to your knowledge of child development or parenting? Rate the amount of information you gained from each source by placing a check mark \( \checkmark \) in the appropriate space.

<table>
<thead>
<tr>
<th>Source</th>
<th>None</th>
<th>Little</th>
<th>Some</th>
<th>Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home economics class(es)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th grade home economics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade home economics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer-Homemaking I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer-Homemaking II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer-Homemaking III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Development (semester class)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Living</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other high school class (Please list the name of the class)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child care courses that were sponsored by</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girl Scouts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Church group</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Welfare agency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned Parenthood</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Public health clinic</td>
<td></td>
<td></td>
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<tr>
<td>Y.M.C.A./Y.W.C.A.</td>
<td></td>
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</tr>
<tr>
<td>Extension and/or 4-H class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult family life programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television programs on parenting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other television programs (Please list the name of the program(s))</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magazines (please give the titles)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Books</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Members of your family (Please list these people)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Neighbors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Doctor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What is your present marital status?

- single
- married
- divorced/widowed

If you are single, divorced or widowed, do you plan to be married?

- Yes
- No

What is your present age range?

- 18 or under
- 19-25
- 26-32
- 33-39
- 40-47
- 48 or older
How old were you when your first child was born? ____

How many children do you now have? ____
  _____ females  _____ males

How many children does your ideal family have? ____

How many generations live in your household? ____
  _____ you  _____ your parents  _____ your husband's parents
  _____ children  _____ other (please specify)

How many people reside in your household? (Count children who are away at school part of the time.) ____

Do any of these people help you with child care? ____
(please specify)

What is the highest grade level you completed in school?

  _____ Completed 7th grade or less
  _____ 8th grade
  _____ 9th grade
  _____ 10th grade
  _____ 11th grade
  _____ 12th grade
  _____ 1 year professional school, technical school or college
  _____ 2 years of professional school, technical school college or apprenticeship
  _____ other (please explain)

Are you a full-time homemaker? _____yes  _____no

Do you work outside the home? _____yes  _____no

  _____ occasionally work for wages (not regularly)
  _____ work regularly 10 hours a week
  _____ work regularly 20 hours a week
  _____ work regularly 40 hours a week
CHECKLIST TO IDENTIFY CHILD DEVELOPMENT/PARENTING CONCEPTS TAUGHT IN HOME ECONOMICS

Listed below are some child development/parenting concepts. (1) Please indicate whether or not you teach these concepts in your Child Development course. (2) If you teach the concept, please indicate the length of time (in hours or minutes) that you use to teach this concept. (3) Also, please rate each concept according to your own perception of its importance in the curriculum.

<table>
<thead>
<tr>
<th>CONCEPTS</th>
<th>Do you teach this?</th>
<th>Time spent on this</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section I  The Child in the Family</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Family Planning Decisions</td>
<td>Yes No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Financial Considerations of Parenting</td>
<td></td>
<td></td>
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<tr>
<td>3. Emotional Considerations of Parenting</td>
<td></td>
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</tr>
<tr>
<td>4. Environmental Considerations of Parenting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Roles and Responsibilities of Parents</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Section II  Prenatal Development and Birth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Reproduction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Development from Conception to Birth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Maternal Health and Nutrition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Birth of the Baby</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section III</td>
<td>Growth and Development Through Childhood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Physical Growth and Development</td>
<td></td>
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</tr>
<tr>
<td>2.</td>
<td>Social and Emotional Development</td>
<td></td>
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<tr>
<td>3.</td>
<td>Intellectual Development</td>
<td></td>
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<tr>
<td>4.</td>
<td>Development of Creative Expression</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Section IV</th>
<th>Parenting Practices and Child Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Child Rearing Practices</td>
</tr>
<tr>
<td>2.</td>
<td>Health and Nutrition of Children</td>
</tr>
<tr>
<td>3.</td>
<td>Safety and First Aid</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section V</th>
<th>Special Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Children with Special Needs</td>
</tr>
<tr>
<td>2.</td>
<td>Child Abuse</td>
</tr>
<tr>
<td>3.</td>
<td>Family Support Systems</td>
</tr>
<tr>
<td>4.</td>
<td>Child Support Services and Legislation</td>
</tr>
<tr>
<td>5.</td>
<td>Selection of Child Care Services</td>
</tr>
</tbody>
</table>

Comments:
### Teaching Strategies Rating Scale

Please rate the following teaching strategies according to the frequency you use the strategy when teaching the child development/parent education course.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost never</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>Almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Films</td>
<td></td>
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<tr>
<td>2. Filmstrips</td>
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<td>3. Video tapes</td>
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<td>4. Slides</td>
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<td>5. Audio tapes</td>
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<tr>
<td>6. Lecture</td>
<td></td>
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<tr>
<td>7. Discussion</td>
<td></td>
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<tr>
<td>8. Student presentations</td>
<td></td>
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<tr>
<td>9. Role playing</td>
<td></td>
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<tr>
<td>10. Resource persons</td>
<td></td>
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<tr>
<td>11. Visits by parents with their infants and preschool age children</td>
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<td></td>
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<tr>
<td>12. Play school in your school</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13. Participation in a public or private day care</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>14. Other - please specify</td>
<td></td>
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</tr>
</tbody>
</table>
APPENDIX D

Human Subjects Approval
**REVIEW OF RESEARCH, DEVELOPMENT, OR RELATED ACTIVITIES INVOLVING HUMAN SUBJECTS**

**SUMMARY SHEET**

**INVESTIGATOR(S):** Dr. Joan Gritzmann, Gerda Zeolla, Marge Andrews, Tyonne Shoemaker,

**Department of Home Economics Education, Ag. & RE**

**341 B Campbell Hall, 1787 Neil Ave. 43210**

**PROTOCOL NUMBER:** ____________

**SUPPORTING MATERIALS:**

**PROPOSAL TITLE:** Assessment of learner knowledge of child development/parenting concepts as a result of participation in a program of child development/parenting education (pilot study Spring 1979; main study Autumn 1979)

**PROPOSAL TO THE BEHAVIORAL AND SOCIAL SCIENCES HUMAN SUBJECTS REVIEW COMMITTEE:**

We would appreciate your supplying the following information in summary form, having these details prior to reviewing the protocol. Please be as specific as possible so that the reader will have a rather complete and accurate idea of exactly what your subjects will experience when they participate in your research. As well as know the protections that have been included to safeguard the subject against adverse consequences (e.g., are they free to not participate if they choose, do they or their parents know exactly what they are getting into before they are committed to participate, will both their names and any collected data be completely confidential).

In the State of Ohio, child development/parenting knowledge is made available to learners in several educational settings. Recently there has been increased interest and emphasis in child development/parenting education. Prior to this study, these programs have been evaluated on an individual system basis. When the programs were evaluated, learner knowledge was not assessed and statewide evaluation has not been conducted. This research will focus on learner assessment (over).

**WHAT IS THE NATURE OF THE MEASURES OR OBSERVATIONS THAT WILL BE TAKEN IN THE STUDY?**

- multiple choice test
- rating scale on competencies that are related to child development concepts
- Child Development Concept rating scale measuring the extent to which the Home Economics teacher teaches the identified broad concepts
- Demographic questionnaire for participants of each specified section.

**If any questionnaires, tests, or other instruments are to be used, please provide a brief description and either include a copy or indicate approximately when a copy will be submitted to the committee for review.**

A sample of the instruments are attached. The multiple choice instrument is being prepared in 3 sections: by Ohio State University, Iowa State University and the University of Minnesota. Attached is the conceptual framework for the (over).
Will the subjects encounter the possibility of either psychological, social, physical or legal risk?  
☐  yes  ☑ no  If so, please describe.

Will any subjects be involved in the study?  ☐ yes  ☑ no  If so, please describe.

Will the subjects be deceived in any way?  ☐ yes  ☐ no  If so, please describe and explain a statement regarding the nature of the deception.

Will there be any probing for information which an individual might consider to be personal or sensitive?  ☐ yes  ☑ no  If so, please describe.

Will the subjects be presented with materials which they might consider to be offensive, threatening or disturbing?  ☐ yes  ☑ no  If so, please describe.

Approximately how much time will be devoted to each subject?  40 to 65 minutes

What will be the subjects in this study? How will the subjects for this study be solicited or contacted?  
See attachment #2

What steps will be taken to ensure that the subject’s participation is voluntary?  What, if any, compensation will be offered to the subjects for their participation?  
The students will have the option to refuse to take the test or answer the competency statements. If they choose to take the test, they will be informed that they are not required to answer any question that they find objectionable.
13) It is important that a subject be informed regarding the general nature of what he will experience when he participates in a study, including particularly a description of anything he might consider to be either unpleasant or a risk. Please provide a statement regarding the nature of the information which will be provided to the subject prior to his volunteering to participate.

Dear Student, Thank you for participating in this study. The information you provide will help us learn what you know about child development. As you take the test, if you find any items that you object to, do not feel obligated to answer them.

14) What steps have been taken to ensure that the subjects give their consent prior to participating? Will a written consent form be used? Yes □ No □ If so, please include it. If the subjects are 12 or under, will their parents' consent be obtained? Yes □ No □ If so, please include the form.

See attachment #3

15) Will any aspect of the data be made a part of any permanent record that can be identified with the subject? Yes □ No □

16) Will written or not a subject participated in a specific experiment or study be made a part of any permanent record available to a supervisor, teacher or employer? Yes □ No □

17) What steps will be taken to ensure the confidentiality of the data?

Neither subjects nor schools will be identified in the findings or discussions of the results of the study.

18) If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subject or society? Yes □ No □

No risks

19) Will any data from files or archival data be used? Yes □ No □

For the field test, we will need the students' IQ and reading scores to test comparability of the two comparability if the two comparison groups. These scores will be needed for sample sections A and D. For section D, names and addresses will also be needed to mail the instruments to the subjects.
APPENDIX E
Raw Student Data
### Class A Raw Data

<table>
<thead>
<tr>
<th>Student #</th>
<th>01</th>
<th>02</th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>09</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age category</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Grade level</td>
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<td>5</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Plan to marry</td>
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<td>1</td>
<td>2</td>
<td>2</td>
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<td>Now married</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
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