Evaluation of parenthood education components of vocational home economics programs in Iowa

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EVALUATION OF PARENTHOOD EDUCATION COMPONENTS OF VOCATIONAL HOME ECONOMICS PROGRAMS IN IOWA

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Evaluation of parenthood education components of vocational home economics programs in Iowa

by

Jerry Ann McClelland

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of The Requirements for the Degree of DOCTOR OF PHILOSOPHY Major: Home Economics Education

Approved:

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Iowa State University
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1980
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INTRODUCTION

Evidence documenting the impact of parenthood education within vocational home economics programs is very limited. Yet, there is an increasing emphasis on parenthood education as well as evaluation of vocational programs (P.L. 94-482). Whereas surveys have been done to determine what is taught (Moore, 1979) and attitudes of past students toward courses and programs (Findlay, 1976), data concerning the impact of parenthood education in vocational programs on parents' behavior have not been reported.

The "Exploring Childhood" curriculum was developed under the auspices of the Offices of Child Development and Education. It is the only parenthood education program for in-school youth which has been formally evaluated and reported (National Field Test, 1976). But because of the focus of the evaluation, the reported measures included no data concerning parenting behaviors. A formal evaluation of parenthood education which did use behavioral data is the Parent Training Project, which was a part of the Harvard Preschool Project (White, Kabon, Attanucci, and Shapiro, 1978). The subjects in the project received training while their children were between 8 and 24 months of age, rather than in the public schools or before becoming parents. The evaluation occurred soon after training.

It is the behavior of parents which is the ultimate criterion of the effectiveness of parenthood education. Although valid behavioral data are difficult and costly to gather and sometimes
difficult to interpret, it is in the behavioral realm that the impact of parenthood education can most effectively be assessed. The feasibility of an evaluation procedure which would use measures of parenting behaviors in the homes of past students of parenthood education was the major thrust of this study.

The Education Amendments of 1976 (P.L. 94-482) mandated the evaluation of vocational programs receiving government funding. This, coupled with the desire on the part of home economics educators to identify aspects of home economics programs which need to be improved, stimulated this feasibility study.

The objectives of this study were to:

1) develop a procedure to evaluate the effectiveness of parenthood education in vocational home economics programs in Iowa by means of a follow-up study;

2) develop observation and interview devices to be used with a self-report inventory to assess parenting behavior; and

3) using the above procedure and devices, compare responses of parents who are past students of parenthood education classes and parents who are not past students.

Assumptions underlying the study were:

1) There exists a core of knowledge, attitudes, and behaviors necessary for adequate parenting.
2) The parenting behaviors assessed in this study were taught effectively as a part of the parenthood units and courses in which the past students of parenthood education were enrolled.

Limitations of the study included:

1) The purposive sample of programs may not be representative of vocational home economics programs in Iowa.

2) The subjects whose characteristics were consistent with the criteria may not be representative of their respective programs.

3) Data concerning information subjects gained through other sources and the amount of experience they had had with babies were collected and used judgmentally to evaluate the possible effect on parenting behaviors, rather than to control statistically for the impact of other information and experience.

4) This evaluation of parenthood education is limited to the following content areas: physical development, parental response to child's emotional needs, parent as teacher, parent's role in fostering openness to the environment, safety indoors, and guiding the child's behavior.

For the purpose of this study, parenthood education is defined as: "Educational programs designed to help prepare students for
effective parenthood by learning about child development and the role of parents" (ERIC, 1977). This definition is the same one used by Moore (1979) in her study of topic emphasis in parenthood education.
REVIEW OF LITERATURE

Introduction

Evidence documenting the effectiveness of parenthood education is indeed sparse. No study of the impact of parenthood education on the behavior of parents is found in vocational home economics literature. The demand for accountability in vocational education (P.L. 94-482, 1976), paired with a need for evidence on which to base decisions about parenthood education, made evident the need to evaluate it.

Because the aim of this study was to assess the impact of parenthood education in vocational home economics, literature reviewed in this chapter includes 1) evaluation strategies, 2) methods of investigation, and 3) methodology and findings of studies relevant to this investigation. The sections follow in the above order.

Overview of Evaluation Strategies

The Phi Delta Kappa National Study Committee on Evaluation (D.L. Stufflebeam, chairman) (Ch. 1, 1971), in Educational Evaluation and Decision Making, describes a malaise overshadowing evaluation in education. Among the causes of malaise they discuss is the problem of defining evaluation. Common definitions equate evaluation with: 1) measurement, 2) congruence between performance and
objectives, and 3) professional judgment. Although these definitions have been helpful and have been the best that evolved from previous theory in evaluation, the Committee developed the following definition in their stead: "Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives" (p. 40). The task of evaluation is to outline the information which is needed, develop strategies for gathering it, and organize it so decisions can be made. The bases for their definition are the ascertainment of value and decision making. Implicit in the definition is the necessity of choosing among competing alternatives.

The following approaches to evaluation examine modes of delineating, obtaining, and providing information which is useful for judging decision alternatives. Included are models by Scriven (1967), Stake (1967), Tyler (1950), and Ray (1978).

The purpose of Scriven's model presented in "The Methodology of Evaluation" (1967) is to establish the worth or merit of a program. Judgment of worth is woven throughout the model. Program goals are judged for their merit and later data are used to determine whether the program has attained its goals. Criteria for judging a program include attainment of program goals, comparison of the program with alternatives, and side effects not addressed in the goals. Scriven contends that evaluation is not complete without the judgment of worth.
Scriven distinguished formative from summative evaluation. Formative evaluation has as its main purpose feedback for program improvement, especially during its development. Those who benefit most from formative evaluation are program personnel. Summative evaluation occurs at a completion point in a program to assess the effectiveness of it. Consumers of and decision-makers about the programs benefit most from summative evaluation. He recommended the use of formative evaluation by internal evaluators and summative evaluation by external evaluators and suggested that both may be used in an overall evaluation plan. Summative evaluation by an outside specialist more adequately fulfills the need for accountability.

Scriven makes an important differentiation between "pay-off" and intrinsic evaluation. "Pay-off" evaluation focuses on results of a program, while intrinsic evaluation concentrates on things such as procedures, instrumentation, teaching strategies, and resources. Although it is the "pay-off" evaluation which produces data about the ultimate effects of a program, Scriven pointed out that both intrinsic and "pay-off" evaluation may be included advantageously in an evaluation procedure.

Stake's model, explained in "The Countenance of Educational Evaluation" (1967), has as its main purpose to describe and judge programs based on formal inquiry. Stake assigned the task of clarifying the statement of goals to the evaluator, if it is necessary.
Outcomes of the program are compared with its goals to determine if they are being met.

In addition to the congruence of outcomes and goals, Stake's model includes two criteria, absolute and comparative standards, for judging a program. Absolute standards may be developed externally by professional societies and can be used to judge the effectiveness of a program. Relative standards can be used where the decision-maker chooses from among alternatives. Both criteria may be used in one program evaluation. For example, the descriptive data from a program under study may be compared with descriptive data from another program and with standards of excellence of an accreditation agency.

The focus of Stake's model is outcomes and utilizes formal procedures of evaluation. He emphasizes the use of structured measurement devices as opposed to subjective judgment. As in Scriven's model, judgment of program effectiveness is the responsibility of the evaluator. Both Scriven and Stake emphasize the judgment of program worth in their models, but others, such as Tyler, approach the question of worth differently.

The purpose of Tyler's model, as described in *Basic Principles of Curriculum and Instruction* (1950), is to determine the extent to which program goals are attained. In his model it is assumed that the process of determining program goals by comparing them with multiple criteria assures their worth. Therefore, the main criterion for judging the effectiveness of a program is goal
attainment. Tyler specified that pre-instruction measures and periodical measures during and after instruction are necessary to assess a program's effectiveness and to improve it.

As in the previous two models, evaluation is formal. The assessment is extrinsic, being based on student performance. The evaluator's role is to collect and analyze data and make decisions concerning the program. Decisions may include maintaining, improving, or possibly discontinuing the program. Tyler's was among the early models using formal means of evaluation and has served as a prototype for others.

Ray's model, presented at Iowa State University (Note 1) is a Tylerian model. It differs from Tyler's by providing for evaluation of programs at three levels: societal, national or state, and local. The structure for assessing broad programs mandated by the federal and state legislatures and state departments of education, as well as specific programs implemented at the individual school, makes Ray's model particularly useful for the evaluation of vocational education. In some instances it may be beneficial to assess programs at more than one level to determine needs or to stimulate improvement.

Ray categorized goals as "client" goals or "societal and economic" goals. In some cases these goals may coincide, whereas in others it is helpful to distinguish the differences in the goals. Vocational home economics addresses both categories of goals.
The models outlined by Scriven, Stake, Tyler, and Ray are well known approaches to evaluation. The methods for obtaining information for the evaluation process are varied. In the following section methods that are relevant to this study are elucidated.

Methods of Investigation

The discussion of methods of investigation includes data collection, multiple measures and multiple outcomes, index of effectiveness, and follow-up studies. The discourse of these topics follows in the given order.

Methods of Data Collection

Methods of data collection relevant to this study are observation, interview, and self-report.

Observation Observation is the most direct procedure for collecting behavioral data, including parent-child interaction (Lytton, 1973). It facilitates the assessment of "what is" with the data retaining a first-hand nature (Yarrow, 1963). Observation also yields more accurate quantitative data than other methods (Borg and Gall, Ch. 9, 1971). This method is preferable to others for collecting behavioral data because the latter may be affected by selective recall and distortion on the part of the subject, certain difficulties with discrimination and synthesis for the researcher, and a lack of sensitivity to behavioral dynamics of interaction (Clarke-Stewart, 1973).
Weiss (1972b) suggested that many evaluators rely mostly on attitudinal and cognitive measures, avoiding the more difficult behavioral data. She stated that

... the real payoff for programs is usually a change in behavior. Since it is dubious that changes in attitude or knowledge are necessary and sufficient conditions for behavioral change, the evaluator is well advised to proceed into the behavioral realm (p. 40).

Although observation is an invaluable method of collecting data, its inherent limitations require that it be carefully applied in research. It yields valid data only to the extent that the observed phenomenon has not been distorted, missed, or misinterpreted by the observer (Yarrow, 1963). Distortion of the subject's behavior may be caused by the presence of an observer (Borg and Gall, 1971). Lytton (1973) reported from his use of observation, interview, and controlled experiment with parents and their two year old sons, that an observer in the home distorts interaction, causes more variability of behavior, and more "desirable" behavior occurs. He suggested that such effects on data are expected and that conclusions of observational studies should be made in that context. Lytton added that interviews may be more distorted than observations.

Some behaviors are less apt to be distorted during observations than others. For instance, unconscious child-rearing practices are less likely to be altered in the presence of an observer than conscious ones (Baumrind, 1975). Furthermore, the behavior of young children is not affected substantially by the presence of
an observer (Lytton, 1973) and, therefore, the conscious control of parents over the parent-child interaction is limited. If the observer stresses interest in the child's behavior, the impact of his or her presence on the parent is lessened (Lytton, 1973).

Another cause of distortion is a subject's behaving in a manner which he or she thinks is expected or perceives as being appropriate during an observation. Issac and Michael (1971) include this as one of several examples of reactive measures. They state: "A measure is reactive whenever the subject is directly involved in a study and he is reacting to the measurement process itself" (p. 62). This may change the variable being measured. One way to counteract reactive measures is to combine them with non-reactive measures. Another technique for minimizing reactivity to measures is to utilize physical evidence about what transpires without actually observing the process or interaction (Borg and Gall, Ch. 9, 1971).

According to Borg and Gall (1971), other causes of distortion of observations include contamination, rating errors, and observer bias. Contamination occurs when the observer has knowledge about, prejudices or expectations concerning subjects which influence his or her recording of behavior. Three types of rating errors which may occur are: errors of leniency, errors of central tendency, and halo effect. Observer bias may result from past experiences of the observer which influence his or her perceptions, emphases, and interpretations of behaviors during observations.
As indicated earlier, in addition to distortion of data, missing data and misinterpretation of data are threats to validity. Observation in a naturalistic setting is especially vulnerable to missing data because of resources limiting the length of observations and because some behaviors occur seldom or when observation is not possible. Also, the extremes in the discreteness of behavioral units used to record and score observed behaviors may result in omitting or misinterpreting data. On the one hand, minute movements in non-psychological terms can be employed (Yarrow, 1963). But it is possible that in reducing or interpreting data, psychological constructs may be incorrectly attributed to micro-level data. On the other hand, if global units of psychodynamic interpretations are recorded during an observation, significant details of interaction may be missed (Yarrow, 1963). Discussing the discreteness of behavioral units of observation, Borg and Gall (Ch. 9, 1971) pointed out that researchers are sometimes faced with the choice of recording less complex behaviors that can be observed objectively but are only slightly related to the variables under study, or they can record complex behaviors which may be of limited value because of the subjectivity of their rating. There are degrees between the extremes of the minute and global levels of behavioral units.

Observations vary in the degree of structure in their formats. Unstructured observations in the form of anecdotal records
are subjective (Gronlund, Ch. 16, 1976). The inclusion of behaviors may be inconsistent and their interpretation may vary. Structured observations have specified behaviors which are recorded, and some use rating scales. Borg and Gall (Ch. 9, 1971) stated that observations utilizing rating scales not only direct observation towards specified and clearly defined behaviors, but they also provide a common frame of reference to be used with each subject. They suggested that two independent observers observing a situation further assures the soundness of data.

Variables included in observational studies may be descriptive, inferential, or evaluative (Borg and Gall, Ch. 9, 1971), each affecting the reliability of data collection differently. A descriptive variable requires little judgment on the part of the observer and, therefore, reliability is expected to be high. For example, the observer may simply record the frequency of a behavior or describe what action occurs. An inferential variable requires that an interpretation about a situation be made before recording data. The reliability of such recording is lower because of the subjectivity of judgment. An evaluative variable is the most vulnerable to low reliability because the observer is required to make a qualitative judgment in addition to inferences about situations.

The reliability of the rating scale is also of concern when one is used in observational research. A scale with few intervals does not allow wide variation of scores which in turn lowers
reliability. For this reason, a 99 point scale is sometimes pre-
ferred to a scale with only little differentiation.

However, Borg and Gall (Ch. 9, 1971) and Gronlund (Ch. 16,
1976) recommended not more than five and seven intervals, respec-
tively, for rating scales used in observational research. The rea-
son for employing scales with these intervals is that observers
cannot make more precise discriminations reliably. Furthermore,
Borg and Gall stated that the "more inference the observer must use
in making the rating, the fewer rating levels should be employed"
(p. 229).

**Interview**  Interview is the second method of data collection
relevant to this investigation. A discussion of its characteristics
and applications follows. An interview is the collection of data
through direct verbal interaction; the verbal interaction is the
source of both strengths and limitations of the interview method
(Borg and Gall, Ch. 8, 1971). The main advantages of direct verbal
interaction lie in the depth and completeness of data solicited,
clarity of communication, and the completion rate. It is generally
agreed that an interview produces greater depth of data (Issac and
Michael, 1971; and Borg and Gall, 1971). Depending on the intent
and structure of the interview, the interviewer can probe for rea-
sons and opinions of respondents which results in more complete data.
Borg and Gall (1971) stated that if the interviewer is able to estab-
lish rapport with the respondent, he or she will be able to obtain
information not revealed under other circumstances. And, if a desirable rapport has not been established, the interviewer should be able to sense it. An interview also provides for a check on meanings of questions and responses (Issac and Michael, 1971) which is not possible with other modes of data collection and can improve the accuracy of data.

Interviews have a higher rate of completion than mail questionnaires (Borg and Gall, Ch. 8, 1971) and may be less threatening in some instances than written modes of data collection. For example, Nelson, Jacoby, and Shannon (1978) used an interview rather than a written test for a cognitive measure in a study of low-income homemakers.

An interview is characterized as a high degree of abstraction from behavior. It is not based on direct observation, but is found necessary in some research situations in order to avoid loss of data that are not observable (Lytton, 1973). In his study of parent and son interaction, Lytton incorporated interview data in the form of global ratings to supplement observational data; where interview data and observational data conflicted, the latter were used.

The major limitations of the interview method are the biases in data collection and consumption of resources. Lytton (1973) stated that one of the more serious problems of an interview lies in possible undetected biases and distortion of data. Biases can occur on the parts of both the respondent and the interviewer. The
respondent may be eager to please the interviewer, answering ques-
tions accordingly (Issac and Michael, 1971) or try to create a good
impression on the interviewer (Lytton, 1973). However, Lytton con-
cluded from his investigation of parent-child relations that at
the same time respondents appeared to be conscious of the impres-
sion they were making on the interviewer, some subjects almost de-
fiantly mentioned child rearing practices that they supposed were
in opposition to progressive child rearing theories.

The adaptability of the interview leads to potential subjec-
tivity on the part of the interviewer. He or she may seek answers
from the respondent which support his or her preconceived notions
(Borg and Gall, Ch. 8, 1971; and Issac and Michael, 1971) and may
ask leading questions or ask questions in a leading manner (Borg
and Gall, Ch. 8, 1971). And yet another possible source of bias
is a vague antagonism which may arise between respondent and inter-
viewer (Issac and Michael, 1971).

These biases may be minimized by carefully training inter-
viewers (Borg and Gall, Ch. 8, 1971). To lessen the respondent's
discomfort about disclosing information, the skillful interviewer
can stress that the data will be confidential and reported only in
group form. Where there is a question concerning biases, interview
data can be checked with other sources of data.

The other major limitation of the interview method is that is
resources consuming. It requires training of interviewers and
in some instances the training may be extensive. The training of interviewers and the time and money required for conducting interviews make this a costly mode of data collection. Because the interviews are resource consuming, the sample is usually small (Borg and Gall, Ch. 8, 1971).

Interviews vary in their format, being unstructured, structured, or semi-structured. Issac and Michael (1971) characterized the unstructured interview as having an objective without imposing a structure on the respondent. It is flexible, unstandardized, and suitable for an in-depth interview (Sears, Maccoby, and Levin, 1957). Issac and Michael (1971) pointed out that this format is frequently used when the information sought from the respondent is of a personal or potentially threatening nature, but that it is most vulnerable to subjective bias or errors of inexperience on the part of the interviewer. Other disadvantages of the unstructured interview are: specific data may be missing; wording of questions and frames of reference vary from one interview to the next; and it yields responses that cannot be rated on common scales for analysis (Sears et al., 1957).

The opposite interview format of the unstructured interview is the structured interview. Issac and Michael (1971) described the latter as having a well defined structure resembling the format of an objective questionnaire. It tends to be factually oriented, relatively brief, and yields specific information. In general, the
reliability of an interview increases with the objectivity of a structured schedule. They suggested it is suitable when accurate and complete information from all subjects is important and imply that it is freer from biases than other interview formats. But the structured interview suggests answers to the subjects, is not adaptable to each subject, and rapport may be eroded because the subject is not allowed to express himself or herself freely (Sears et al., 1957).

The semi-structured interview shares some characteristics with both the unstructured and structured interviews. It has structured, open-ended questions with follow-up probes (Sears et al., 1957). The interviewer branches off the structured questions to explore some responses in greater depth. This requires that the interviewer be trained and skillful to probe responses, and yet it avoids biasing tendencies (Issac and Michael, 1971). Borg and Gall (Ch. 8, 1971) stated that the semi-structured interview is reasonably objective. One interview may have questions ranging through unstructured, semi-structured, and structured formats.

Interview data may be recorded in different ways, according to Issac and Michael (1971). Tape recordings may be used so that all of the respondent's remarks can be recorded. However, the respondent, knowing that the interview is being recorded, may produce guarded responses. Another approach is to summarize a subject's responses during or after the interview. But writing during the
interview slows the pace, and writing the summary after the inter-
view may be affected by selectivity of the kind and amount of in-
formation recorded.

**Self-Report** Self-report is the last method of data collec-
tion relevant to this investigation. Gronlund (Ch. 17, 1976) sug-
gested that there are two types of information that may be obtained
profitably by self report: 1) past behavior (because it is no longer
observable) and 2) inner life such a worries, concerns, feeling,
interests, and opinions (because the behavior is not readily dis-
cernible by an observer). Such information may be obtained by an
interview, but a large amount of data can be collected more quickly
and economically by self-report.

An inventory may be used to assess personality (Borg and Gall,
Ch. 7, 1971), interests (Remmers, Gage, and Rummel, Ch. 10, 1965),
attitudes (Oppenheim, Ch. 4, 1966), and behavior (Gronlund, Ch. 17,
1976). The latter is relevant to this study, but little informa-
tion regarding self-report inventories of behavior is found in re-
search and evaluation literature.

An inventory consists of a standard set of questions related
to some area of behavior, administered and scored under standard
conditions (Gronlund, Ch. 17, 1976). It may be developed in two
ways. Oppenheim (1966) distinguished between inventories con-
structed on a statistical basis and those which are developed judg-
mentally (p. 95). Items that are developed through pilot testing
and factor analysis can be scored together with assurance that they belong together. A less sophisticated approach of clustering items together \textit{a priori} is quicker, but there is less confidence in the validity of such devices.

Versatility, economy, and ease of administration to a large number of persons (Gronlund, Ch. 17, 1976) are advantages of a self-report inventory. It also avoids observer and interviewer bias because the subjects respond to items on paper. Because the subjects respond in writing, it may be easier for them to respond to sensitive topics, such as antisocial behavior or inadmissible problems (Oppenheim, Ch. 4, 1966).

Self-report inventories also have some limitations. In using a self-report inventory, it is assumed that the respondent is able and willing to report accurately. But Thorndike and Hagen (p. 430, 1977) pointed out that both the quantity and level of reading may prohibit accurate responses. Also, the subject may give a distorted picture of himself or herself, either by intent or because of a lack of insights. Some inventories may use ambiguous words describing feelings or behaviors which limit their validity, and recollection of past events may be inaccurate (Gronlund, Ch. 17, 1976).

Borg and Gall (Ch. 7, 1971) pointed out the potential problem of "response set" regarding self-report measures. A subject's response may be influenced by the desire to cast oneself in a socially desirable light, the tendency to respond positively regardless of
the content of an item, and intentionally responding deviantly. Consistent with Borg and Gall, Thorndike and Hagen (p. 430, 1977) noted that a respondent may be unwilling to reveal himself or herself on some types of inventories. This is in contrast to one of the assets of the device, ease of responding to sensitive topics, claimed by Oppenheim (Ch. 4, 1966). However, Thorndike and Hagen indicate that respondents are not able to project a given profile, though they may distort their own.

The characteristic advantages and disadvantages of observation, interview, and inventory methods of data collection have been contrasted. In addition to these considerations, obtrusiveness and threat of examination of subjects is of concern for all methods of data collection with some populations being more seriously affected than others. Nelson, Jacoby, and Shannon (1978) stated in the report of their study of homemaking and consumer education programs for low-income adults in New York that it was important for them to use unobtrusive, non-threatening methods of data collection. Specifically, they avoided devices which necessitated subjects' reading and making written responses. This was particularly important for the cognitive measure they employed.

Multiple Measures and Multiple Outcomes

Determination of what information is sought and what criteria for judging are appropriate influence the number and types of measures and outcomes used in a study. The issues of multiple measures
and multiple outcomes are examined below. In a discussion of social action programs, Weiss (1972a) noted that if a program has several goals, multiple measures are usually required. She stated: "The use of a simple summary measure is likely to be obfuscating and misleading" (p. 23). Issac and Michael (1971) noted that frequently the operational definition of a concept leads to a single measurement criterion, but that an operational definition is better served by multiple measures of a concept with each sharing a portion of the relevant components. This means that if a proposition is confirmed by two or more independent measurement processes, the likelihood of accurate interpretation of results is increased.

Issac and Michael also pointed out that outcomes of multiple measures of a concept may not be consistent with each other which points out the risk of confidence in single measures, but also makes research results awkward to report coherently. Another difficulty in the use of multiple measures is weighting the measures for data analysis.

Hughes (1979) recommended the use of multiple measures and multiple criteria (or outcomes) in research on the effectiveness of vocational home economics. An illustration of multiple measures she suggested is the use of varied measures such as clinical procedures, observation in a natural setting, and standardized test scores. As an example of multiple criteria, she suggested using the physical health, emotional health, and cognitive development of
children as indicators of parenting behaviors (p. 59). The use of multiple measures and multiple criteria increased the likelihood of accurately measuring and interpreting research questions.

**Index of Effectiveness**

An index of effectiveness can help structure decisions concerning the results of program evaluation. A brief discussion of indices of program effectiveness follows.

Individual measures in an evaluation can be combined to form an index of program effectiveness. Nelson et al. (1978) used six measures of program effectiveness in their evaluation of homemaking and consumer education programs for low-income adults. Each program was rank ordered on each of the measures so that an overall rank index emerged. It was then possible to characterize the more effective programs based on the index of program effectiveness. This approach to assessing the quality of programs is well suited to normative evaluation and is useful for identifying more effective and less effective programs.

In developing an overall measure of program success, Weiss (1972b) cautioned that the measures should be complementary and not repetitions of the same dimensions. Such an index necessitates making decisions concerning the relative importance of the different measures. Another caveat Weiss pointed out is that a composite index may "mask the upward and downward movement of separate measures as well as the overall index of program effectiveness" (p. 37).
Follow-up Studies

The last portion of this section is a discussion of follow-up studies. Sharp and Krasenger (1966) defined follow-up studies as

... research designs which require a contact with individuals who have shared an experience in the past and who the researcher desires to study or restudy. The usual goal of such studies is to arrive at some measures of the impact of the experience on the subsequent behavior of these individuals (p. 1).

The Dictionary of Education (Good, ed., 1973) defines follow-up studies as they apply more specifically to vocational education:

... an organized plan for ascertaining the employment and educational status of graduates from vocational programs in order to establish the relationship between employment and vocational training received (p. 246).

This definition relates to occupational programs rather than consumer and homemaking programs but is relevant to the relationship between parenting and vocational home economics training. The following purposes of follow-up studies, which are listed among those in the Dictionary of Education, are pertinent to vocational home economics:

... to obtain a realistic picture of what lies ahead for present students, ... to appraise the school's program, and sic to obtain ideas for improving the program (p. 246).

The impetus to use follow-up studies in the evaluation of vocational education has increased. Franchak and Spirer (1978) stated:

Reporting the attainments of vocational education programs to the state and federal governments has been required by law for many years. ... The Vocational Education Act of 1963 started an intensive effort to systematically conduct follow-up studies of former vocational students at state and local levels (pp. 21-22).
The trend increased when The Education Amendments of 1976 (P.L. 94-482, Title II, Subpart 1) required the evaluation in quantitative terms of vocational programs supported by federal, state, or local funds. The use of job placement as a part of gainful employment programs is stipulated; acquiring job placement data necessitates a follow-up study. Each state is now required to evaluate its programs during the five-year period of its state plans (Franchak and Spirer, 1978).

Regarding evaluation of programs for gainful employment, Hughes (1979) commented that success of students in an occupation is a criterion of program success. However, attributing success or failure to a consumer and homemaking education program, the primary aim of which is not gainful employment, is risky because of information being available through other sources such as the media, cooperative extension and other community agencies (p. 73).

Hughes outlined studies which need to be done in home economics education, and among the types she recommended were follow-up studies of participants in vocational home economics programs. Specific to the family development area, she suggested that follow-up data on parent-child interaction of persons who were enrolled in child development classes be collected and compared with data about those who were not (p. 93).

The interim period between completion of a course or program and collection of follow-up data is an important methodological
question. Problems arise from time lapses that are either too long or too short. The major problem resulting from an interim period which is too long are what Campbell and Stanley (1966) refer to as history and maturation; either other events or the maturing of the subject may account for change in subjects. Problems resulting from a time lapse that is too short are integration of what has been learned and forgotten (Nelson, Howe, and Dalrymple, 1975).

In their study of preparation of disadvantaged teenagers for dual roles, Nelson et al. (1975) compared child rearing attitudes of experimental and control groups at the completion of instruction and one year later. They concluded that these data support the generalization that "deep-seated attitudes are difficult to change and require a period of time to become apparent" (p. 112). They also noted that "the pupils failed to retain all they had learned during the year away from the classroom" (p. 113). Consequently, a useful assessment of results of treatments necessitates a long enough interim to allow for integration of new concepts and attitudes and for forgetting. The measurement of behavioral changes also involves careful scrutinizing of the time lapse (Kauffman, Nussen, and McGee, 1977).

All follow-up studies contend with the difficulty of locating subjects (Sharp and Krasenger, 1966). High mobility can make adequate sampling both problematic and expensive.
Studies Relevant to this Investigation

A discussion of studies relevant to this investigation follows in these categories: 1) observational studies, 2) interview studies, and 3) self-report studies. A brief description of each study is followed by a description of the device or devices bearing on this investigation.

Observational Studies

Stern, Caldwell, Hersher, Lipton, and Richmond (1969) observed thirty mothers and their children in a longitudinal study of the mother-infant dyad. The mothers were interviewed and observed during pregnancy, and they and their infants were observed during the first year of the child's life. The study was conducted at a prenatal clinic.

Nine factors emerged in the factor analysis of 79 variables based on mother's personality, mother's behavior, child's personality, child's behavior, and child's mental and motor development. The authors contended that the pattern of loadings is

. . . suggestive of a causal sequence of relationships between personality characteristics of the mother, the modes of maternal behavior she adopts, and the responses and development of her infant (p. 181).

The nine factors appear to be distributed on a continuum from mother-centered to child-centered behavior. The two factors being most child-centered represent similar variants of effective mothers and responsive infants. The authors indicated that one of these two
factors, based on a cluster of maternal behaviors and one maternal need, suggests ideal mothering behavior.

Thirty nine-point rating scales were used to record observations of mothers' and babies' behaviors before and during pediatric examinations. The pediatrician and one or two observers rated the behaviors independently and later reached a consensus.

White, Kaban, Attanucci, and Shapiro (1978) are making an in-depth, longitudinal study of children in the Harvard Preschool Project. It began in the late 1960s and has followed the development of 39 children in their homes. The purpose of the study has been...

... to determine how to structure experiences during the first six years of life so as to assist each child to maximize the potential he is born with (p. 4).

At the outset, the researchers determined what was meant by "a competent six year old," then created assessment devices to follow the development of competence during the first six years. These devices depended primarily on observations. Of particular interest were any time period during which development seemed critical and parent behaviors which were associated with the child's competence. Using these data, the project moved into its current phase of developing parent training which would enable parents to implement parenting behaviors that were associated with competent children.

The findings of the Harvard Preschool Project are numerous. Among the many conclusions drawn thus far are the following which are relevant to this investigation: Differences in competence
among subjects began to show up reliably at 14\textfrac{1}{2} months, and differences were impressive from 24 months on. Language, social skills and attachment, curiosity, and problem-solving skills are key developmental processes during the first three years of life. Effective care takers of infants fill these functions: design of living area, consultant, and authority.

As indicated above, a parent training project is a part of the Harvard Preschool Project (White et al., 1974). Eleven families participated in the training project while they had infants between eight and 24 months of age. The authors concluded that the results of the study indicated that the parent training project was moderately effective.

The measurement device used in the parental training project that is relevant to this study is the "Adult Assessment Scales." The scales consist of the following: 1) checklist for child initiated child-adult interaction, 2) checklist for adult-initiated child-adult interaction, 3) rating scale of distal adult effect, and 4) rating scale of dimensions of competence. Each scale is marked by an observer based on parent-child interaction observed in the home. Much of the "Adult Assessment Scales" is highly inferential requiring trained observers.

Clarke-Stewart (1973) studied 36 mothers and their first-born infants from the age of nine to 18 months. The sample was comprised of families of low occupational and economic status. Repeated observations of mother-child interaction in structured and spontaneous
situations were made in a laboratory and in the homes of the subjects. Interviews and questionnaires were also used to elicit information about mother and infant variables.

The author concluded that a highly significant linear relationship existed between the children's competence and their mother's care. And

... specific relations were found between children's language development and mother's verbal stimulation, children's skill with objects and mother's presentation of play materials, and mother's and children's positive social behavior toward each other (p. 1).

Most of the observational data Clarke-Stewart gathered in the home were primarily unstructured. Using a code, the observer recorded observations of 26 maternal and 23 infant behaviors in a notebook. Additionally, a descriptive statement of the setting and inferences about the mother and infant were written. Other simple measures, such as number and variety of objects the infant played with, the number of people present, appropriateness of play objects were noted during the observation in the home.

Structured observations in the home setting were also recorded using an infant developmental checklist and a rating scale which included the infant's activity level and the mother's emotional expression, physical contact with the infant, verbal and social stimulation of the infant, stimulation of the infant with materials, and responsiveness to the infant's distress and social behavior. The rating scales used five-point continua.
Elardo, Bradley, and Caldwell (1975) administered a home environment inventory in order to explore its ability to predict infants' later mental test performance. The sample included 77 infants in Arkansas whose home environments were assessed at 6, 12, and 24 months of age by the "Inventory of Home Stimulation." Their mental development was also assessed, using common infant tests, at 6, 12, and 36 months of age. The authors concluded that the aspects of home environment that are assessed by the inventory bear an important relationship to cognitive development during the first three years of life.

The "Inventory of Home Stimulation" contains 45 items, representing the following subscales: emotional and verbal responsivity of the mother, avoidance of restriction and punishment, organization of the physical and temporal environment, provision of appropriate play materials, maternal involvement with the child, and opportunities for variety in daily stimulation. Scoring was done in a binary fashion and was based on observation in the home environment and a semi-structured interview.

Interview Studies

Nelson et al. (1978) conducted a formative evaluation of new homemaking and consumer education programs for low-income adults in New York State. The investigators were interested in the progress of the participants toward program goals, the functioning of the professional and para-professional staffs, and questions
regarding program operation. Ten program sites were selected as being representative of the 30 in the state. A random sample of 108 participants was selected, and all professionals and para-professionals on the staffs were included in the study. It was concluded that significant learning occurred and that home economics programs can attract and serve the target, low-income population.

In their assessment of participants' progress toward program goals, the investigators used the following non-threatening data collecting techniques: interview, descriptive rating scale, and recording of critical incidents. The interview format is of interest here. The para-professionals administered a structured interview schedule to the participants. The items presented home-making situations and asked what behavioral response the participants would make to them. Follow-up probes were included in the schedule, to be used if needed. A structured key was constructed for scoring the interview responses.

Sears et al. (1957), in their benchmark study of child-rearing practices, utilized a semi-structured interview schedule. The subjects were 379 mothers, primarily middle-class, and from the Boston area.

There were 72 open-ended questions with suitable follow-up probes. The interviewers wrote down the responses. Appropriate rating scales, some global, others specific, were used to analyze
and quantify the mothers' responses. The number of points on the scales varied depending on the degree of discrimination that was found possible. The investigators reported that the interviewers received little training.

The study by Clarke-Stewart (1973), which was discussed earlier, also used in interview schedule to collect data. In examining the relations between mothers and their children, the investigator used a maternal attitude score based on the number of "yes" answers to a series of 20 attitudinal questions. Most of the questions were general. The "yes-no" choice of answers reflects a highly structured interview schedule. The maternal attitude score represented the "extent to which the mother's attitude toward children and toward her own child was positive, interested, and accepting" (p. 28).

Self-Report Studies

Dalrymple, Lowe, and Nelson (1971) conducted a large study focusing on curricular issues for dual-role preparation of disadvantaged youth. Two courses orienting students to dual roles were developed, one emphasizing preparation for both job and homemaking and the other emphasizing homemaking only. Control subjects (147) were compared with experimental subjects (139) in these two courses at the conclusion of the courses and one year later. The investigators used as indicators of effectiveness measures of changed pupil self-concept; perception of locus of control;
knowledge and comprehension of course content; attitude toward child-rearing practices, marriage, dual-role for women, and work; school attendance; academic record; and potential for employability. On the one-year follow-up phase of the study, the students in the wage earning course evidenced gains in employability, knowledge, and self-concept. Students in both the homemaking and wage earning courses gained in positive attitude toward work. Students in the experimental groups evidenced more gain in desirable child-rearing practices than the control group.

The instrument which measured attitude toward child rearing was a two-part self-report device. The first part focused questions about child rearing on the subject's parental family and the second part, using the same content, focused the questions on the subject's intended behavior if he or she became a parent. The items represented desirable parenting practices which would help break the cycle of dependency on social welfare, with the emphasis on cognitive development of children. The items were highly structured, presenting a statement about the ways families function. Usually, the respondent was given three choices of varying degrees of agreement with the statements; on two items the response was either agreement or disagreement.

Crase, Clark, and Pease (1978) developed the Iowa Parent Behavior Inventory (IPBI) to assess parent behaviors. The purposes of the device were to learn more about the quality and quantity of
parent behavior and to provide an economical and easy way to gather data about parenting. The original population was rural families.

There is a form for mothers and a form for fathers, each including the following factors: parental involvement, limit setting, responsiveness, reasoning guidance, and intimacy. The form for mothers also has a factor labeled free expression. The factors were developed by a factor analysis and are accompanied by descriptive paragraphs.

There are 36 items in the IFBI, each representing a parent-child interaction. The parent responds to each item with one of five degrees of agreement or disagreement as to how descriptive the stated situation is of his or her perceived behavior. The scale is intended to measure a parent's behavior with a particular child from three to nine years of age.

The Office of Child Development and the Office of Education sponsored the development of a parenthood education curriculum for the public schools (Exploring Childhood: National Field Test, 1976). The pilot implementation of the curriculum in 226 schools was evaluated using a follow-up study. Two attitudinal, self-report instruments of interest for this study are the semantic differential and Likert-type devices. The seven-point semantic differential had three parts: 1) descriptions of children, 2) self descriptions when working with children, and 3) descriptions of adults when they work with children. The descriptors in each part were nearly identical.
The Likert-type device had 44 items, each having a four-point response pattern ranging from strongly agree to strongly disagree to measure attitudes about children.

Evaluation of Parenthood Education Programs

Presumably, informal evaluations of parenthood education at the local level are carried out, but because of their limited applicability are not published. Few examples of formal evaluations of parenthood education programs are available. A discussion of four programs is presented, followed by comments on methodological problems of the assessment of parenthood education programs.

Examples of Parenthood Education Program Evaluations

Kerckhoff and Habig (1976) reported a survey of parenthood education conducted by the Family Coordinator Family Life Education Panel. The panel of 42 state and regional family life professionals (four Canadians and 38 Americans) interviewed at least one knowledgeable, local secondary school teacher about parenthood education. Nineteen of the 42 panelists found little or no parenthood education taught in their local secondary schools, while 19 said it was taught in all or most of their local secondary schools.

Concerning where in the high school curriculum parenthood education was taught, 74 percent of the panelists knew of schools including it in home economics. Other subject areas including it were health, biology, and general science. Parenthood education
was more commonly a part of a course, although 40 percent of the panelists knew of separate courses in parenthood education. A cursory examination of content taught and teaching strategies was also reported.

Kerckhoff and Habig's descriptive survey is helpful in ascertaining whether and in what subject matter areas parenthood education is taught in the United States and parts of Canada. It does not, however, attempt to assess the impact of parenthood education programs.

Two notable examples of parenthood intervention programs are the Young Mothers' Program and the Parent-Child Centers. Both of these programs have been formally evaluated.

Klerman and Jekel (1973) reported the evaluation of programs for pregnant teenagers, contrasting the effectiveness of the Young Mothers' Program (YMP) to others. The YMP evolved out of the realization that normal obstetrical care did not meet the needs of young girls and women. Two main hypotheses were of interest: 1) girls in the YMP would fare better than girls in other programs on indicators of health, educational achievement, and familial and social relationships; and 2) infants of YMP participants would score higher on indicators of physical and social development and health than comparable subjects in other programs.

The subjects were pregnant girls 18 years old or younger who went to the Yale New Haven Hospital Obstetric Clinics and decided
to participate in the YMP. As implied in the hypotheses, the pro-
gram provided comprehensive prenatal and postpartum care for the
mother and infant which distinguished the YMP from other programs
for pregnant teenagers.

Data were collected using four main techniques: three post-
partum interviews, where possible; rating scales; hospital records;
and school records. Klerman and Jekel concluded that the partici-
pants in YMP "generally were healthy during the pregnancy, . . .
the infants were significantly more healthy at birth and the mothers
delayed subsequent pregnancies significantly longer" (p. 127) than
those in a comparison group having no special services. Also, the
YMP was largely successful in enabling the girls who were in school
at the time of conception to remain in school during pregnancy and
return to school soon after delivery. However, the program was not
so successful in its long-term goals:

Too many girls at two years postpartum had left school
before graduation, had become pregnant again, and had made
little progress toward economic self-sufficiency (pp. 127-
128).

At about 26 months postpartum almost half of the mothers had dropped
out of school, and social problems such as separation, divorce, sui-
cide attempts, violence, and child abuse had begun to appear.

The YMP evaluation used multiple measures and multiple criteria
in its assessment and is therefore pertinent to this study. Also,
the YMP evaluation reveals a decline in program effects which may
have relevance for this follow-up study.
Another parenthood intervention program which has been evaluated is the Parent-Child Centers (PCC). The idea for PCC originated in the late 1960s to facilitate parenting among minority populations. Holmes, Holmes, and Greenspan (1973) discussed the programs and plans for their assessment in an interim report. The emphasis of the centers was on teaching the parent to work with the child rather than working with the child directly. The 32 centers varied in their target populations, staffing, program structure, and to an extent, in their goals.

The assessment of program impact focused mainly on the parents, although some measures were conducted with the children of the target populations. Three major impact dimensions were identified for all the PCCs: options available to the mother (as opposed to good or bad parenting), knowledge and use of community and health resources, and self-concept. Trained interviewers used an instrument called "Parent-Child Center Parent Questionnaire" to collect data from a random sample of 354 parents. The interviews were about one hour in length and used structured questions, open-ended questions, and Likert-type items to assess feelings, attitudes, and knowledge relating to the parent role. A frequently occurring problem in the program and with the assessment was motivation of the parents to participate. This attempt to quantify the impact of the centers on parents met with limited success, with there being an indication of positive attitudes toward the program but no evidence of change.
The Young Mothers' Program and the Parent-Child Centers are intervention programs concentrating on pregnant teenagers and parents. The most widely disseminated example of a parenthood education program which has been evaluated and is aimed at persons 12 to 18 years of age in the public schools before they become parents, is the Exploring Childhood curriculum discussed earlier. The curriculum was designed to prepare teenagers for parenthood by combining classroom activities with field experience where they observed and worked with young children (National Field Test, 1976). The curriculum was pilot tested in 226 schools, and the evaluation of it is ongoing. During the second year, it was concluded that participation in Exploring Childhood appeared to strengthen several attitudes toward child care. Among the attitudes influenced by the curriculum were expressing tenderness toward children, using less severe forms of punishment, and encouraging children's independence and autonomy.

Other findings of the evaluations thus far show that 75 percent of the participants increased their understanding of how children think and feel, 60 percent felt they improved their ability to interact with children, and 50 percent felt they had learned about themselves (Cobb and Peters, 1975).
Methodological Problems in Assessing Parenthood Education Programs

Evaluating parenthood education is beleaguered by several methodological problems, some of which are shared with other social programs. Weiss (1972b) suggested that evaluation of programs in psychotherapy, corrections, casework, compensatory education, and public housing show little or no effect. Little or no effect of programs occurs partly because of unrealistic expectations for massive social change (Bernard, 1975) and because the broad aims of some programs are to achieve non-specific forms of change for the better (Weiss and Rein, 1970). Little or no effect of programs may be due also to the design of the evaluation. Weiss and Rein suggested that experimental research, which is sometimes used in evaluating action programs, should not be used to evaluate programs that have broad aims and are unstandardized. They recommend other methods of evaluation instead: process oriented research, historical research, and case study or comparative research. These approaches are more likely to detect change.

In addition to little or no effect of program impact, the impact that does occur may decline over time. Klerman and Jekel (Ch. 8, 1973) stated that crisis intervention for pregnant, school-age mothers seems to have a short-term impact.

In contrast to little or short-term program impact is the problem of alternate explanations for change in behavior. Because the ultimate criterion of effectiveness of a parenthood education
program is the effectiveness of parenting behavior, which may occur months or years following instruction, intervening factors are of concern to program evaluation. History and maturation (Campbell and Stanley, 1966) are examples of such factors and were discussed in the earlier section on follow-up studies.

Simultaneously with this study, Moore (1979) studied the content of parenthood education. She surveyed a stratified random sample of 124 Iowa secondary vocational home economics teachers concerning aspects of parenthood education which they included in their curricula. A questionnaire addressed the questions of emphasis placed on parenthood education topics, in what classes these topics were taught, and the teaching strategies used to teach the topics. The list of topics was adapted from a census study undertaken to determine what is currently being taught in consumer and homemaking education.

Parenthood education topics receiving the most emphasis included: self-awareness, roles, reproduction, maternal health, physical growth and development, and social-psychological development. Topics receiving some emphasis but less than the above pertained to prenatal care, birth, the decision to parent, and the rearing of children. The relative emphasis on topics of parenthood education in the curriculum presumably affects parenting behavior and therefore is of interest in this study.
Summary

Literature reviewed for this research was presented in three parts: evaluation strategies, methods of investigation and studies relevant to the present investigation, and evaluation of parenthood education programs. A review of well-known and relevant models of program evaluation pointed out the use of goal attainment (Tyler, 1950) and the judgment of program worth (Scriven, 1967; and Stake, 1967) as criteria for program evaluation. The use of absolute and relative standards (Stake, 1967) can be used in making decisions about programs. Ray (1978) suggested that it may be beneficial to address program evaluation at societal, national or state, and local levels in some cases. All the models that were discussed stressed the importance of formal inquiry in the evaluation of programs.

Methods of investigation were centrally significant to the development of the study because of the difficulty in acquiring appropriate data for an impact study of parenting behavior. Observation is the most direct procedure for collecting behavioral data (Lytton, 1973) but is limited by the scope of data which can be obtained (Yarrow, 1963), as well as measurement biases (Borg and Gall, 1971; Issac and Michaels, 1971; and Gronlund, 1976), and resources that are required. The interview method produces greater depth of data (Issac and Michael, 1971) and can include a wider range of data than observation (Lytton, 1973). The interview is limited by
respondent and interviewer biases (Borg and Gall, 1971) and required resources (Gronlund, 1976). Self-report inventories are inexpensive, relative to other methods of data collection (Gronlund, 1976) and can obtain a very wide range of information (Lytton, 1973). The attributes and limitations of these methods of data collection seem to complement each other in a manner which suggests an advantage in their combination. The need for impact studies (Franchak and Spirer, 1978; and Hughes, 1979) for accountability and improvement of programs in vocational education was also discussed.

The methodology and findings of studies which were relevant to this investigation were mentioned. Few evaluations of parenthood education have been published. An evaluation of the Exploring Childhood curriculum (National Field Test, 1976) is the only one for in-school youth that was found relevant to this study.

The literature that was reviewed formed the basis on which decisions could be made about strategies for evaluating parenthood education programs. The examination of approaches to program evaluation and methods of data collection facilitated the development of a procedure for evaluating parenthood education.
METHODOLOGY

Statement of the Problem

The purpose of this study was to develop a procedure to evaluate the effectiveness of selected components of parenthood education in vocational home economics programs in Iowa. The procedure was intended to be functional at the local school level, being usable by the teachers and requiring resources within their program limits. If the procedure were judged to be valid, possibly data could be gathered from a larger number of schools to assess the effectiveness of parenthood education on a broader basis.

The objectives of the study were to:

1) Develop a procedure to evaluate the effectiveness of parenthood education in vocational home economics programs in Iowa by means of a follow-up study.

2) Develop observation and interview devices to be used with a self-report inventory to assess parenting behavior.

3) Using the above procedure and devices, compare responses of parents who are past students of parenthood education classes and parents who are not past students of parenthood education classes.

Assumptions underlying the study were the following:

1) There exists a core of knowledge, attitudes, and behaviors necessary for adequate parenting.
2) The parenting behaviors assessed in this study were taught effectively as a part of the parenthood education units and courses in which the subjects were enrolled.

Limitations of the study include:

1) The purposive sample of programs may not be representative of vocational home economics programs in Iowa.
2) The subjects whose characteristics were consistent with the sample criteria may not be representative of their respective programs.
3) Data concerning information subjects gained through other sources and the amount of experience they had had with babies were collected and used judgmentally to evaluate the possible effect on parenting behaviors rather than to statistically control for their impact.
4) This evaluation of parenthood education is limited to the following content areas: physical development, parental response to child's emotional needs, parent as teacher, parent's role in fostering openness to the environment, safety indoors, and guiding the child's behavior.

Description of the Sample

Former students from eight vocational home economics programs made up the purposive sample. This sampling method was used because of the specificity of program and subject characteristics.
that were salient. The programs were selected on the bases of 1) the teacher of parenting concepts during the 1976-77 school year remaining in the program to collect data during the fall of 1979; and 2) the program having had female students who studied parenting during the 1976-77 school year and who were parents of babies 12 to 24 months of age at the time of data collection. Two programs were in schools with student bodies in grades 9 to 12 numbering over 1,100, and the others were in schools with student bodies ranging from 425 to 680.

The three-year time lapse between the subjects' studying parenting and data collection allowed time for subjects to have babies between 12 and 24 months of age. Parenting behavior for babies of this age were selected because the second year of life is considered critical to the development of competence for children (White, 1975; and Elardo, Bradley, and Caldwell, 1975). Also, having been a parent for one year or more allowed the subjects time to develop their habits and beliefs about parenting. The subjects were limited to past female students because the number of subjects did not yield statistical power to examine both males and females. Also, only a limited number of males would have conformed to the sample criteria.

There was an attempt, where possible, to match each subject with a female control subject who also had a baby between 12 and 24 months of age and who attended the same high school during the 1976-77 school year, but who had never enrolled in a high school
class relating to parenthood education. The subjects were matched on the basis of the teachers' judgment of similar socio-economic status and on high school grade point average. Matching also exercised some control over similarity of high school experience, community background, and subjects' ages.

The teacher depended on informal means of selecting the subjects and their controls, such as her knowledge of past students' status as parents. In most programs, there were so few subjects conforming to the sample criteria that no selectivity beyond the above criteria was possible. In fact, in order to identify eight programs which had subjects conforming to the sample criteria, 22 programs were contacted. In participating programs, teachers telephoned subjects to inform them about the study and to solicit their participation. Teachers reported no difficulty in eliciting cooperation from persons who conformed to the sample criteria.

**Instrumentation**

As the parenting behaviors to be included in the study were selected, literature was perused to identify appropriate instruments. Whereas only one suitable device, the *Iowa Parent Behavior Inventory* (Crase et al., 1978) was found, it was necessary to develop other devices. A discussion of this procedure follows.

The content of this study was based on a census study (Hughes, personal correspondence) which was to determine what topics are
being taught in vocational home economics. Of the 20 topics on child development and parenting in the census study, the following were identified for this study: 1) physical growth and development, 2) social-psychological development, 3) intellectual development, 4) development of creative expression, 5) safety and first aid, and 6) child rearing practices. These topics were selected because they are associated with parenting behaviors that are germane to the optimum development of babies and because they are relevant to parents of babies between 12 and 24 months of age.

Theory and research findings were examined to identify the specific aspects of each topic to be assessed in the study. The aspect of each topic which was selected was:

- Physical growth and development: Physical development
- Social-psychological development: Parental response to child's emotional needs
- Intellectual development: Parent as teacher
- Development of creative expression: Parent's role in fostering openness to the environment
- Safety and first aid: Safety indoors
- Child rearing practices: Guiding the child's behavior

See Appendix B for the items on the Rating Scale for Parenting Behaviors and Parent Behaviors Interview that relate to these content areas.

Data collection methods were selected to obtain the most direct behavioral data possible within the limits of available resources. Observation was selected because it would yield
important information about mother-infant interaction and the mother's management of the infant's physical environment. But because there is a restricted range of interaction which could be observed within time limitations, other methods of data collection were needed. An interview facilitated the gathering of data which could not be observed and probed reasons for parental behavior, and a self-report inventory of parent behavior was used to assess a broader range of behaviors. The combination of observation, interview, and self-report inventory facilitated the gathering of both direct behavioral data and a wide range of reported behavior.

A description of the three devices which were used in the study, Rating Scale for Parenting Behaviors, Parenting Behaviors Interview, and Iowa Parent Behaviors Inventory, follows.

Rating Scale for Parenting Behaviors

The Rating Scale for Parenting Behaviors (RSPB) was developed for use in this study. The purpose of the device is to assess aspects of a parent's management of the child's physical environment and interaction of the parent with the child. The device focuses on behaviors of parents of children between 12 and 24 months of age. Each of the ten items on the RSPB (Appendix B) consists of three descriptors of a parenting behavior and is marked on a five-point continuum with five being the high score and one the low score. Items for the rating scale were generated from theories and research findings. A brief description of the basis for each item follows.
Items 1 and 2 assess aspects of physical development. The first one examines whether the child's toys foster coordination appropriate to the child's development, and the second focuses on how suitably the environment is arranged for the child's physical development. They are based on McCandless and Trotter's (1977) discussion of motor activities. They state that practice of motor activities improves coordination and strengthens muscles so that inappropriate muscle sequences drop out and correct ones are perfected (p. 196).

Item 3 assesses an aspect of parental response to the child's emotional needs. The item focuses on parental expression of verbal and physical affection toward the child and is based on a study of the mother-infant dyad by Stern et al. (1969). In a factor analysis of mother and child variables, a factor emerged which the investigators suggested was representative of "ideal mothering." Included in the factor are these behavioral loadings: happy talk, vocal affection, tenderness, sensuousness in handling, and empathy with her child (p. 174). The loadings were exceptionally high.

Items 4, 7, 8, and 9 are derived from White's Harvard Preschool Project (White, 1975; and White et al., 1978). Item 4 relates to parental response to the child's emotional needs and focuses on the parent's response to the child's demands for attention. White et al. report a strong association between the child seeking the mother's attention in a pro-social manner and the development of
competence. They also suggest that the child who is seen as a burden to be dealt with as little or as quickly as possible would appear to be less well off than the child who is offered assistance by a sympathetic care giver.

Items 7 and 8 assess aspects of the parent's role in facilitating openness to the environment. Item 7 rates the child's accessibility to living space. White found that relative freedom from confinement was typical of the lives of one-year-old children who were developing very well and, conversely, that the child whose movement is restricted cannot satisfy his or her curiosity or practice emerging motor skills. Item 8 focuses attention on creative play materials. White states that the exploration of physical objects during the second year of life is likely to make a developmental difference and recommends that care givers provide a wide range of small, common household objects for the baby.

Item 9 assesses safety in the child's environment. As an infant develops the ability to crawl, walk, and climb, he or she is subject to danger. Effective care givers in the Harvard Preschool Project protected their children from dangers in the home (White, 1975, pp. 263-264).

Item 10 rates the cleanliness of the child's environment. Its basis is an extension of Item 9; effective care givers protect children from an unclean environment.

Item 5 relates to parent as teacher and assesses the presence of books for the baby. Included in Caldwell's "Inventory of Home
Stimulation" (reported in Elardo, Bradley, and Caldwell, 1975) are two items concerning the presence of books: one is general, probing the presence of books in the home, and the other is specific, measuring whether the child has three books of his own. The purpose of Caldwell's inventory is to measure the child's home learning environment. Elardo et al. (1975) found in a longitudinal study of 77 infants studied from age 6 months to 36 months that the inventory positively correlates with infant mental development.

Item 6 also focuses on the parent as teacher and rates the parent's vocalization to the child. It is derived from a study by Clarke-Stewart (1973) about interaction between mothers and their babies, ages 9 to 18 months. A linear relationship between the mother's verbal stimulation and the baby's language development was found.

An eleventh item about orderliness was added to the rating scale to help observers distinguish orderliness from cleanliness when marking the scale, but it was not used in data analysis.

In the development of the RSPB, the original draft of the device was tried with three mothers by the researcher. Items were revised after which two subject matter specialists reviewed the device for content validity and usability, and two evaluation specialists reviewed it for adherence to evaluation principles. More changes were made, and the device was tried again by two teachers with seven mothers; a third teacher reviewed the device.
Suggestions from the teachers resulted in additional minor changes. The researcher then tried the device in its final form with two more mothers. In all, the device was tried with twelve mothers and reviewed by four judges and three teachers before data collection.

Reliability estimates for the rating scale were calculated from data gathered during the orientation sessions for the teachers who were to collect data. A set of photographic slides and an audio tape simulated a visit to a subject's home which the teachers judged using the rating scale. This provided the data for the inter-rater reliability which was calculated using an analysis of variance (Hoyt and Stunkard, 1952). The estimated inter-rater reliability for the rating scale was .68, using data from eight teachers. However, one teacher was oriented to the material during and after the school day when other teachers and students distracted her attention. The inter-rater reliability estimate calculated without her score was .70.

After a time lapse of an hour and a half during the orientation sessions, the teachers saw and heard the same slides and tape and marked the rating scale again. The first and second markings of the rating scale were used to calculate the intra-rater reliability estimate. It was calculated using the Pearson product moment correlation formula; the estimated intra-rater reliability ranged from .58 to .98. However, the range for teachers oriented under desirable conditions was .83 to .98. The teacher who was oriented under undesirable conditions was given additional training.
It should be noted that because the rating scale had only ten items, the reliability estimate is partly a function of a small number of items. Because the estimates for the inter-rater reliability and the intra-rater reliability were based on few items and were high when calculated using data collected under desirable conditions, the reliability of the RSPB was considered satisfactory.

Parenting Behaviors Interview

The Parenting Behaviors Interview (PBI) was also developed for use in this study. The purpose of the device was to assess parenting behaviors of parents of babies 12 to 24 months of age which relate to the parent's management of the baby's physical environment and interaction with the baby. The PBI (see Appendix C) is a 15-item semi-structured interview schedule. It focuses on parenting behaviors and on awareness of and knowledge about the child's development. A brief description of the basis for each item follows.

Item 1 relates to physical development, probing the mother's awareness of her baby's physical activity and her understanding of the necessity of physical maturation for the baby to perform physical skills. The item is based on McGraw's (1946) summary of research on the maturation of behavior. She stated that maturation refers "... essentially to changes in behavior as a result of anatomical or physiological development in the nervous system, and in distinction to change brought about by exercise" (p. 363).
Items 2 and 14 are based on Clarke-Stewart's investigation (1973) of children's competence and mother's care. Item 2 assays the mother's sensitivity to the provision of play materials. Clarke-Stewart found a linear relation between children's skills with objects and mothers' presentation of play materials. Item 14 inquires about the mother's teaching her child labels of common things in the baby's environment. Clarke-Stewart concluded that among her subjects there was a linear relation between the child's language development and mother's verbal stimulation. One component of her assessment was to present objects such as blocks, keys, and a clock and ask the baby to name them, or if the baby could not or did not say the name, ask him or her to point to them when named.

Item 3 relates to parent as teacher. The item represents a hypothetical situation and gives the mother a response choice of labeling and explaining or verbalizing without any cognitive cues. It is based on Wachs, Uzgiris, and Hunt's (1971) cross-sectional study of cognitive development in infants. They found in their observations of 102 infants between the ages of 15 and 22 months that opportunities for the infants to hear vocal labels for objects, actions, and relationships were consistently related to their cognitive development.

Item 4 is based on studies by Dennis (1941) and White and Held (1966) and asks the mother about activities aiding the development of coordination. Dennis demonstrated the delay of sitting and
standing by restricting practice of one twin in twin pairs and not the other. White and Held reported the acceleration of visual motor reaching in young infants by providing opportunity for watching and reaching for attractive objects. The onset of these physical skills was not altered drastically, but the variation in onset indicated the role of practice in physical development.

Items 5 and 15 relate to guiding the child's behavior. Item 5 asks the mother whether she believes it is desirable to give a punitive response with no explanation to a toddler who marks on a wall. Item 15 offers the mother a choice of removing a toy on the first offense of misuse or teaching the baby to use it appropriately. The items are based on Baumrind's study (1975) of preschool children's competence and parental authority. The parent variables in the study were numerous; of interest here are parental use of reason and explanation when directing the child. Baumrind concluded that parental demands for self-control and encouragement of independent action and decision-making are associated with responsible and independent behavior in the child.

Items 6, 9, and 12 were constructed to measure aspects of parental response to the child's emotional needs. The items are based on the study by Stern et al. (1969) of the mother-infant dyad as was Item 3 in the rating scale. In a factor analysis of mother and child variables, a factor which emerged was considered to be representative of "ideal mothering" according to the investigators. The
factor included happy talk, vocal affection, tenderness, sensuousness in handling, and empathy with the child (p. 174). The loadings were exceptionally high. Item 6, asking if the mother held, hugged or cuddled her infant, addresses tenderness and sensuousness in handling. Item 9 queries whether the mother vocalizes her affection to the baby, and Item 12 concerns whether or not the parent gives sympathy to her child when hurt.

Item 7 measures an aspect of physical development, asking the mother's opinion about the importance of play in physical development. Like Items 1 and 2 in the rating scale, it is based on McCandless and Trotter's (1977) discussion of physical development. Play is the context in which babies practice, and through practice they strengthen muscles and become more efficient at motor activities. Inappropriate muscle sequences are omitted as correct ones are perfected (pp. 196-197).

Items 8, 10, and 13 are derived from the Harvard Preschool Project (White et al., 1978) which is an investigation of the emergence of competence in children. Items 8 and 13 probe the parent's role in fostering the openness of children to the environment. Item 8 asks whether the mother thinks it is better to remove objects the baby could harm from his or her reach, or to put the baby in a playroom or playpen. The investigators reported that one-year-old children whose development was relatively poor were routinely restricted in their locomotion and that children who were
relatively free from physical restrictiveness were developing very well. Item 3 probes the mother's sensitivity to her baby's curiosity. White et al. (1978) stated that nearly all 7- to 8-month-old babies are very curious, but that during the following two years may become less so, possibly because of the care giver's restrictiveness. Item 10 relates to the guidance of children's behavior, asking the mother about setting limits on her baby's behavior. White (1975) described three primary functions for care givers of infants, one of which is setting clear limits, no matter how young the infant.

Item 11 relates to parent as teacher. It asks the mother what she would buy to stimulate her baby's mental development and what responsibility she believes a parent has for the baby's mental development. The item is based on the longitudinal study by Elardo et al. (1975) concerning the home environment and mental development of infants from 6 months to 3 years of age. The investigators concluded from their study that after 12 months of age it seemed that babies experiencing the most enriched environments had primary care givers who provided them with a variety of age-appropriate learning materials.

Each item of the interview has two parts, the first a closed response question and the second a question with a semi-structured response. The interviewer uses a standard probe, "Is there anything else?", after the subject has responded to the second part
of each item. This provides a common stimulus for subjects to answer as completely as possible.

The interview was scored by using a key (see Appendix D) which designated two points for the closed response portion of each item and three points for the semi-structured portion.

At the orientation sessions for data collection for the teachers, data were gathered to calculate the reliability estimate of the interview schedule using a simulated interview of a subject which had been tape-recorded. The teachers wrote down the subject's responses on the interview schedule, and the interviews were scored. Because the teachers' responses were scored identically, except for two teachers on one item each, no conventional means of calculating the reliability estimate could be used. Thus, the interview was considered reliable but had no numerical estimate. The validity and usability of the device were assessed in the same manner as the RSPB.

Iowa Parent Behavior Inventory

The purpose of the Iowa Parent Behavior Inventory (IPBI) (Crase, Clarke, and Pease, 1978) is to assess self-reported parent behavior easily and inexpensively. On the inventory (see Appendix E), parents responded to statements representing parent-child interaction. A five-point response pattern was used to indicate to what degree each situation was representative of the parent's behavior.

The inventory was developed by generating items for five categories reflecting research-based theoretical positions. The items
were administered to parents and the first version emerged by re- defining the categories and revising and adding items. The first version was then administered to another group of parents and was factor analyzed. Three factors were identified and more items that were relevant to the factors were written while all the items in the first version were retained.

This second version of the inventory form for mothers was administered to 393 mothers and factor analyzed. The analysis resulted in a six-factor mother form with 36 items. The factors are: 1) parental involvement, 2) limit setting, 3) responsiveness, 4) reasoning guidance, 5) free expression, and 6) intimacy. The usual Spearman-Brown formula was used to compute the total variance reliability estimate, which ranged from .56 to .81 for the factors.

The inventory is scored on a five-point basis with 1 being the low score and 5 being the high one. The items within a factor are summed. However, the researchers caution there is no evidence of additivity among factors and suggest that users discuss factor scores, not total scores (Crase et al., 1978, p. 12).

Data Collection

Administrators in selected school districts were contacted in the summer and fall for permission to include the home economics program in their district in the research project. Some contacts were made by phone and others by letter (see Appendix F).
Teachers then received letters (see Appendix G), explaining the project and asking them to participate.

Teachers in the eight programs included in the study gathered data during the fall of 1979. They did so without compensation; their participation is credited to their interest in improving their parenthood education units and classes and to their interest in the research project. Teachers were asked to gather the data because of their comparative ease of entrance into the homes of past students and because of the possibility that the evaluation procedure might be used in other schools where the data collection would be done by teachers. Each teacher was asked to gather data from two of her past parenthood education students and two control subjects. However, due to the limited availability of subjects, there were one or two experimental subjects and none to two control subjects per program. In one case, there were no control subjects because of the unusually high enrollment in the school's family living classes.

During the annual fall conference for Iowa vocational home economics teachers, five of the participating teachers met for an orientation session. The session provided the opportunity for teachers to practice using the rating scale for the observation and the interview schedule; also, the data from these trials were used to estimate the reliability for the instruments. Two sets of photographic slides and two audio tapes simulating observations in
the homes of subjects were used to become familiar with the rating scale; and two audio tapes of simulated interviews were used for practice with the interview schedule. The selection of subjects and the data collection procedures were also discussed during the sessions. Research materials were given to the teachers. Teachers in the study who did not attend the fall conference were introduced to the data collection procedures at other times.

Each teacher contacted potential subjects and solicited their participation. She made an appointment to visit with each of her experimental subjects and control subjects. It was arranged so that the mother and baby were at home and the baby was awake for the visit. The teacher sent a letter of confirmation for the appointment (see Appendix H), together with a copy of the IPBI. The completed IPBI was picked up at the time of the visit.

Upon arriving at the subject's home, the teacher chatted with her in an effort to establish rapport for the data collection. During this time, the teacher asked indirect questions about the subject's prior experience with babies and sources of parenthood education other than high school home economics courses. This and other information were recorded later on the demographic data sheet (see Appendix I). The subject was asked to sign a consent form (see Appendix J) which gave permission to obtain the subject's high school grade point average and to use data collected from her in the study.
The teacher asked to see where the baby slept, ate, and played indoors, then gave a nesting toy, eight drums of varying sizes and colors, to the mother and told her the toy was for the baby to keep. The mother was then asked to give it to the baby and play with him or her for a few minutes so the teacher could observe the baby’s response. Viewing the areas of the home where the baby slept, ate, and played and seeing the mother and baby play with the toy provided some common bases for rating all subjects and assured the opportunity to observe salient content in the rating scale. Observation for the rating scale was done during the entire visit, but the teacher did not mark the rating scale until immediately after the visit.

After the mother had played with the baby for a few minutes, the interview was started. The teacher read each question and recorded the subject's response as accurately as possible before proceeding. Although the research materials were given to the teachers during the orientation sessions, the data were returned to the researcher by mail because the programs were widely scattered geographically.

Data Analysis

Data gathered by the teachers, using the observation rating scale, interview schedule, and inventory, were used in the statistical analysis. Mean and variance scores were calculated for each
item on the rating scale and interview and for each factor in the inventory for the experimental group and the control group. Thirty t-tests were computed to determine whether there were significant differences between the two groups on the observation and interview items and the inventory factors. An analysis of variance was not used because there were five subjects for whom data on one item each on the rating scale were missing.

A 30x30 correlation matrix was constructed to examine the correlation of items and factors, both within and between the three devices.

After determining that the items on the observation rating scale were additive, the scores on it were summed for the experimental group and the control group, and then means and standard deviations were calculated for each group. A t-test was calculated to determine if there was an overall difference between the experimental group and the control group on the rating scale.
FINDINGS AND DISCUSSION

The purpose of this study was to develop a procedure to evaluate the effectiveness of selected aspects of parenthood education in vocational home economics programs in Iowa. Three measures, two of which were developed for use in this study, were used to assess parenting behaviors of past students of parenthood education and matched control subjects who had not studied parenting. The procedure was intended to be usable at the local level so that teachers could implement it. If it were judged feasible, it could be used to evaluate parenthood education on a broader basis.

The presentation of the findings and discussion is in eight parts: demographic information about the sample, results of the observation, results of the interview, discussion of the findings of the observation and interview, results of the inventory, program effects, intercorrelation of observation and interview items, and feasibility of the evaluation procedure.

Demographic Information about the Sample

The teachers' knowledge about their programs and subjects and the indirect questions they asked the subjects provide demographic information which is discussed in this section. These sources of information provide a basis for analyzing the effectiveness of the matched control procedure which was used. It should be remembered
that there were 11 matched pairs; teachers included 15 experimental subjects, but in only 11 cases were there control subjects to match with the experimental subjects.

Teachers reported in general terms in what types of courses the experimental subjects were enrolled. Eight experimental subjects were enrolled in semester courses in parenthood education or child development, while the other seven were enrolled in courses having units on parenthood education or child development. Because the study focused on a procedure to evaluate parenthood education in whatever structure it occurred, no attempt was made to exclude programs using either mode. Likewise, no attempt was made to exclude programs on the basis of whether their content was labeled parenthood education or child development, although the approach to the content may differ somewhat, depending on the emphasis in the curriculum.

The teachers also indicated the extent to which their programs provided opportunities for the experimental subjects to have experience working with children of any age. Of the eight programs, two had provided no opportunity to work with children. The other six programs varied from one day to three weeks in the amount of time spent working with children. In some programs, it was arranged for the students to go to day care centers or nursery schools; in others a day care setting was arranged in the high school. It is clear that a great deal of variation in experience with children existed in the programs.
The teachers were asked to indicate whether they included in their curricula parenthood education content areas assessed in the study. The content areas were listed without any description or definition. Six of the eight teachers had included all six content areas; two teachers had omitted one area each, safety and fostering the child's openness to the environment.

One of the two criteria for matching the pairs of subjects was grade point average (GPA). Because of the privacy restrictions concerning GPAs, teachers were asked to rely on their impressions and general knowledge about the experimental and control subjects in matching the pairs. Only after the subjects signed consent forms at the time of data collection, allowing the teacher to have access to the subjects' GPAs, did the teachers know whether they had been accurate in estimating the GPAs of the subjects. This was the only viable procedure for matching subjects on GPA since it is inappropriate to ask large numbers of persons for permission to review their school records in order to select a few for a study. Also, in few cases were there enough potential subjects from a program to allow much selectivity. Consequently, the attempt to match subjects on the basis of GPA met with only limited success. Of the 11 pairs, four had GPAs within .5 of a point of each other; four were between .5 and 1.0 points of each other; and three varied more than a full grade point.

The other criterion for matching the subjects was socio-economic status (SES). Teachers used their general knowledge of
the communities and the subjects rather than direct questioning about SES indicators because of the potential discomfort such questions might cause the subjects. There were informal reports from some teachers indicating that once they were in the homes of the subjects, they observed some SES indicators they had not expected. Because of the decision to avoid direct questioning about SES and the limited number of subjects from which to select, the pairs were not as similar in their SES as was desirable, although gross variations did not occur. Since the attempt to match the pairs was only partially successful, no analysis of the pairs was done.

Both experimental and control groups were white Anglo-Saxon. But in terms of employment, the groups varied. Of the experimental group, five were employed full-time, two were employed part-time, and eight were not employed. Three of the control group were employed full-time, four part-time, and four were not employed. It is not known whether or in what ways the employment status of the sample might affect their parenting behaviors.

Because it was not possible to implement rigid design or statistical controls in this feasibility study, questions of experience with babies and sources of information about parenting, other than home economics classes, were assessed judgmentally. Teachers reported on the basis of indirect questions the type and amount of experience the subjects had had with babies under two years of age, other than their own. In the experimental group, three subjects
had had virtually no experience with babies except their own. Nine had had some experience with babies through occasional babysitting and contact with relatives. Three had had extensive experience with babies through employment as a pediatric nurse's aide and as a full-time care giver for children and by caring for young siblings. So the experience of the experimental group with babies other than their own varied with the majority having had some experience.

In terms of the experience of the control group with babies other than their own, only one had had none. Five had had some experience with babies through occasional babysitting and contact with relatives. However, the other five had had extensive experience with babies in their families. Three had siblings much younger than themselves, and three had more than six siblings. Although the control group varied in the amount of experience they had had, it was interesting to note that the control subjects had more experience with babies than the experimental subjects, and the variation in experience of the two groups may have influenced their parenting behaviors.

As noted earlier, the influence of sources of information about parenting, other than home economics courses for the experimental subjects and any sources of information concerning parenting for the control subjects, was assessed judgmentally. Among the indirect questions the teachers asked were inquiries about
sources and amounts of information concerning parenting. One-third of the experimental group had received information from doctors and nurses, and one-third (in some cases the same individuals) attended prenatal classes. It was characteristic for these sources of information to focus on prenatal and postpartum care of the mother and physical care of the neonate. One-third read a great deal from books, pamphlets, and magazines with much of this information focusing on physical care of the young infant. One subject attended a child care class, another belonged to La Leche League, and others learned some things about parenting from relatives. Of the 15 experimental subjects, three could be characterized as receiving virtually no information in addition to their home economics classes, but four, through reading and attending classes in the community, had received a substantial amount of information. The other eight were considered to be receiving some information.

In the control group, three of the 11 received information from medical personnel, and four attended prenatal classes. Over half of them read books, magazines, or pamphlets about parenting. A few depended on relatives for information. Four of the 11 received virtually no information about parenting, while two had been receiving a substantial amount. The other five were considered to be receiving some information.

A great deal of caution was observed in judging the potential effects of information, other than home economics classes, on the
parenting behaviors of the subjects. With certainty, it was concluded that both the experimental subjects and the control subjects varied in the amount of parenthood education they had been receiving. Less than one-third of the experimental subjects seemed to have been receiving additional parenthood education which was having an influence on their parenting. In comparison, slightly fewer control subjects seemed to have been receiving substantial amounts of parenthood education. With a small sample, it was not possible to predict whether the respective groups differed in their tendencies to seek information about parenting.

In conclusion, the effectiveness of the attempt to match experimental subjects with control subjects was judged only partially successful and therefore an analysis of pairs was not done. The teachers' best estimates of grade point average and socioeconomic status of the subjects were only moderately accurate. However, this dilemma is common for social action programs which are similar to elective courses where parenthood education is usually taught. Weiss (1972a) stated that one of the main obstacles to evaluation research is the difficulty of obtaining control groups (p. 8). Although it is preferable to randomly assign subjects to treatments, that is rarely possible in social action programs. Another approach is to match subjects on characteristics relevant to the dependent variables, but frequently this is limited by knowledge of which variables are significant enough to warrant matching. Nonetheless, Weiss states that
... even non-equivalent controls are better than no controls at all, and additional safeguards can be introduced through design, statistical treatment and further research to compensate for inadequacies (p. 9).

If differences between the groups occur using non-equivalent controls, then more rigorously designed studies can pursue salient variables.

Considering Weiss's discussion of matching subjects, it was concluded that the attempt to match subjects in this study was appropriate, the limited success of the effort was usual, and that the findings should be viewed in light of the fact that the controls were not entirely equivalent.

Rating Scale for Parenting Behaviors

Means and Standard Deviations

The means, standard deviations, and t values for each of the ten items on the Rating Scale for Parenting Behaviors (RSPB) for the experimental and control groups are shown in Table 1. The RSPB is based on a five-point scale. The range of means for the experimental subjects is 3.6 to 4.5, and the range of standard deviations is .8 to 1.6. For the control subjects, the range of means is 3.0 to 4.5, and the range of standard deviations is .5 to 1.4. The lower limit of the range of means for the experimental group is numerically higher than that of the control group. The standard deviations show less variability for the control group than for the experimental group.
Table 1. Observational item data for experimental and control groups

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Experimental n=15</th>
<th>Control n=11</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Toys related to physical development</td>
<td>3.6 1.2</td>
<td>3.6 1.0</td>
<td>.03</td>
</tr>
<tr>
<td>2.</td>
<td>Suitability of equipment and environment</td>
<td>4.0 1.2</td>
<td>3.8 1.0</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>to child's development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Parental expression of affection toward child</td>
<td>3.9 1.0</td>
<td>4.0 .8</td>
<td>-.18</td>
</tr>
<tr>
<td>4.</td>
<td>Parent's response to child's demand for attention</td>
<td>4.3 .8</td>
<td>4.1 .5</td>
<td>.68</td>
</tr>
<tr>
<td>5.</td>
<td>Presence of books</td>
<td>3.6 1.6</td>
<td>3.0 1.4</td>
<td>.91</td>
</tr>
<tr>
<td>6.</td>
<td>Parent's vocalization to child</td>
<td>3.9 1.1</td>
<td>3.5 1.4</td>
<td>.64</td>
</tr>
<tr>
<td>7.</td>
<td>Child's accessibility to living space</td>
<td>4.4 1.1</td>
<td>4.4 .7</td>
<td>.10</td>
</tr>
<tr>
<td>8.</td>
<td>Creative play materials</td>
<td>4.2 1.1</td>
<td>3.3 1.3</td>
<td>1.91a</td>
</tr>
<tr>
<td>9.</td>
<td>Safety in child's environment</td>
<td>4.1 1.1</td>
<td>4.1 .8</td>
<td>.11</td>
</tr>
<tr>
<td>10.</td>
<td>Cleanliness of child's environment</td>
<td>4.5 .9</td>
<td>4.5 .9</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td><strong>Total Scale</strong></td>
<td>4.1 .9</td>
<td>3.8 .7</td>
<td>.73</td>
</tr>
</tbody>
</table>

*Table value .10 = 1.71 (25 d.f.)*
Because of the manner in which the item descriptors are written for the rating scale, any score above 1.0 indicates movement toward parenting behaviors which are desirable, and a score of 3.0 is judged to be adequate parenting behavior. Therefore, all parenting behaviors assessed by the RSPB were considered adequate or better for both the experimental and control groups.

An inspection of Table 1 indicates that the lowest mean scores for the experimental group were on the following items:

1. Toys related to physical development
2. Suitability of equipment and environment to child's development
3. Parental expression of affection toward child
4. Presence of books
5. Parent's vocalization to child
6. Parent's vocalization to child

Although these item means were not substantially lower than others, they indicated some parenting behaviors which might be improved.

Like the experimental group, the control group had lower mean scores on items 1, 5, and 6. Additionally, the control group had low scores on these items:

2. Suitability of equipment and environment to child's development
8. Creative play materials

Tests of Significance

The t values calculated using the means for each item are noted in Table 1. Only one item indicates a statistically significant difference between the two groups at the .10 level. This item
assesses the presence of creative play materials. Although only one item yields a statistically significant difference between the two groups, on every item but one where the means differ, the experimental group has the higher mean. In the one exception, the control group is only .1 point higher.

**Item Correlations**

Three 30x30 correlation matrices were constructed: one each for the experimental group, the control group, and for the pooled within group. The matrices included the items in the RSPB and the Parenting Behaviors Inventory (PBI) and factors in the Iowa Parent Behaviors Inventory (IPBI). The intercorrelations of items on the RSPB are of interest here because of the question of additivity of the content areas or of the entire device.

For the experimental group, the correlation coefficient of items ranged from .15 to .91 with over half of the correlations being above .65. Because of the consistently high correlations of nearly all observation items on the three matrices, the entire device was judged to be additive rather than the content areas being additive. The RSPB, then, is a scale yielding one score which is a measure of broad parenting skills.

Because the RSPB was judged additive based on intercorrelations of items, each subject's scores were summed, then the means and standard deviations of each group were calculated for the scale. The mean and standard deviation values were transformed to a
five-point scale to be consistent with the item scores. A t-test was calculated but no statistically significant difference was found between the two groups on the total scale. The experimental group mean for the scale was 4.1 and for the control group it was 3.8. The former group had a standard deviation of .9 while that of the latter was .7.

Summary

To summarize the results of the RSPB measure, both experimental and control subjects appeared to be performing at adequate or higher levels on the parenting behaviors assessed by the scale. Although there is one item on which there is a statistically significant difference between the two groups, nine of the ten experimental group means were the same or higher than those of the control group.

Parenting Behaviors Interview

At the time the interviews were scored, it was noted that item 1 was irregular in that some subjects had made no response, or the response was not in answer to the stated question. This was in contrast to normal responses on the following 14 items. The data analysis, corroborating the earlier notation, showed Item 1 to be erratic in its means and correlations with other items. Therefore, it was omitted from the data analysis. However, because the item functioned normally during the trials of the device, when it was
placed midway through the interview, it was concluded that its placement caused the irregularity, rather than the item's being faulty.

**Means and Standard Deviations**

The means, standard deviations, and t values for the 14 items on the PBI appear in Table 2. The results for the experimental group are discussed first. The range of means was from 2.2 to 4.6. Ten of the 14 means were above 3.0, which was judged to be adequate parenting behavior, based on the structure of the items. Of the four means below 3.0, two were for items assessing the parent as teacher content area: Item 3, labeling and explaining objects in the environment, and Item 11, parent's role in structuring the environment for learning. The third item having a mean score below 3.0 was Item 5, use of punishment and explanation in guiding the child's behavior, from the content area of guiding the child's behavior. The last item with a mean score below 3.0, from the content area of parent's role in fostering openness to the environment, was Item 8, access to living space. These items pointed out parenting behaviors which need improvement.

Other items indicated aspects of parenting in which the experimental group appeared to be doing well. Item 5, physical expression of affection, and Item 9, verbal expression of affection, in the parental response to the child's emotional needs content area, had the highest mean scores. In the content area of
Table 2. Interview item data for experimental and control groups

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Experimental</th>
<th>Control</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
</tr>
<tr>
<td>2.</td>
<td>Provision of play materials</td>
<td>4.0</td>
<td>.4</td>
<td>4.2</td>
</tr>
<tr>
<td>3.</td>
<td>Labeling and explaining objects in the environment</td>
<td>2.9</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>4.</td>
<td>Role of practice in coordination</td>
<td>3.9</td>
<td>1.6</td>
<td>2.8</td>
</tr>
<tr>
<td>5.</td>
<td>Use of punishment and explanation in guiding child's behavior</td>
<td>2.5</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>6.</td>
<td>Physical expression of affection</td>
<td>4.6</td>
<td>1.1</td>
<td>4.4</td>
</tr>
<tr>
<td>7.</td>
<td>Play provides practice for coordination</td>
<td>3.2</td>
<td>1.1</td>
<td>3.1</td>
</tr>
<tr>
<td>8.</td>
<td>Access to living space</td>
<td>2.2</td>
<td>1.1</td>
<td>1.2</td>
</tr>
<tr>
<td>9.</td>
<td>Verbal expression of affection</td>
<td>4.3</td>
<td>1.3</td>
<td>3.4</td>
</tr>
<tr>
<td>10.</td>
<td>Setting limits for behavior</td>
<td>4.4</td>
<td>1.2</td>
<td>4.0</td>
</tr>
<tr>
<td>11.</td>
<td>Parent's role in structuring the environment for learning</td>
<td>2.4</td>
<td>1.0</td>
<td>1.9</td>
</tr>
<tr>
<td>12.</td>
<td>Giving the child sympathy</td>
<td>3.4</td>
<td>2.0</td>
<td>2.9</td>
</tr>
<tr>
<td>13.</td>
<td>Encouraging curiosity</td>
<td>4.1</td>
<td>1.0</td>
<td>3.6</td>
</tr>
<tr>
<td>14.</td>
<td>Teaching labels of objects</td>
<td>3.6</td>
<td>1.1</td>
<td>3.7</td>
</tr>
<tr>
<td>15.</td>
<td>Positive approach to guiding the child's behavior</td>
<td>3.2</td>
<td>1.3</td>
<td>2.2</td>
</tr>
</tbody>
</table>

^a Table value .10 = 1.71 (25 d.f.)

^b Table value .05 = 2.06 (25 d.f.)
parent's role in fostering openness to the environment, were two more items with high mean scores: Item 2, provision of play materials, and Item 13, encouraging curiosity. Item 10, setting limits for behavior, which is in the content area of guiding the child's behavior, also had a high mean score. The standard deviations for the 14 items ranged from .4 to 2.0.

The control group differed somewhat from the experimental group. Means ranged from 1.2 to 4.4 with half of the 14 means being above 3.0. At least one item in each of the five content areas assessed by PBI was below the level of parenting behavior judged adequate although, for some items, the variation from adequate parenting was small. The items having mean scores below 3.0 are listed below under their content areas:

**Parent as teacher**

3. Labeling and explaining objects in the environment
11. Parent's role in structuring the environment for learning

**Physical development**

4. Role of practice in coordination

**Guiding the child's behavior**

5. Use of punishment and explanation in guiding child's behavior
10. Positive approach to guiding the child's behavior

**Parent's role in fostering openness to the environment**

8. Access to living space
Parental response to child's emotional needs

12. Giving the child sympathy

The control group had higher mean scores for the following items, indicating that they were functioning well in these parenting behaviors: Item 2, provision of play materials, in the content area of parent's role in fostering openness to the environment; Item 6, physical expression of affection, in the content area of the parental response to the child's emotional needs; Item 10, setting limits for behavior, in the content area of guiding the child's behavior. The standard deviations ranged from .6 to 2.2 for the control group.

An inspection of Table 2 indicates that the experimental group had higher means on 12 of the 14 items. The three items where the control group was higher had a margin of .2 or less.

Tests of Significance

The calculation of t tests for each item indicated that there was a statistically significant difference between experimental and control groups on three items, with the experimental group scoring higher in each case. The two items that were significant at the .10 level relate to the content areas of parent as teacher and parent's role in fostering openness to the environment. The item which is significant at the .05 level pertains to physical development.
Item Correlations

An inspection of the three correlation matrices indicated that the intercorrelations of most items were low (81 of the 93 correlation coefficients were below .40). No evidence of additivity by the content areas of the FBI was indicated. Therefore, the FBI was analyzed only by individual item scores.

Summary

In summary, the data from the FBI indicated that the experimental group was functioning at an adequate or better level on ten of the 14 parenting behaviors assessed, whereas only half of the parenting behaviors of the control group were at or above the level judged adequate. There was a wider range in variation of parenting behaviors in the control group than in the experimental group. Although the means of the experimental group were significantly different from those of the control group on only three items, 12 of the 14 experimental group means were higher than the means of the control group. Ramifications of the above findings from the RSPB and FBI for parenthood education are discussed below.

Discussion of Findings of RSPB and FBI

In her survey of the emphasis that Iowa vocational home economics teachers place on parenthood education topics, Moore (1979) used a four-point scale with 2 indicating some emphasis and 3 indicating much emphasis. The mean for emphasis on intellectual
development was 2.38, and it was among the third of topics receiving the most emphasis. The parent as teacher content area was derived from the intellectual development topic for assessment in this study. Therefore, it would be expected that the experimental subjects' behaviors relating to this content area might be assessed as relatively high also. But the item mean scores on the observation (numbers 5 and 6) and interview (numbers 3 and 11) devices in the parent as teacher content area were among the lowest scores for the experimental group. Two conditions might have accounted for the variation. Moore's list of topics was not accompanied by descriptions or definitions so interpretation of them may have differed among teachers, which affected their ratings. Secondly, this study assessed only the parent as teacher aspect of intellectual development, and from Moore's study it was not possible to determine the extent of emphasis teachers placed on the parent's role in the child's intellectual development.

Following is a brief analysis of the content of the items on the RSPB and PBI which relate to parent as teacher and which were identified as having lower scores. According to Elardo et al. (1975), the provision of books (Item 5, RSPB) and age-appropriate learning materials (Item 11, PBI) is important for infant mental development. There is also an association of maternal vocalization to the infant (Item 6, RSPB; Item 3, PBI) and the child's language development (Clarke-Stewart, 1973) and cognitive development (Wachs
et al., 1971). Based on this information, it is appropriate for teachers to consider increased emphasis in their curricula on the parent's role in providing books and appropriate play materials for babies and vocalizing to them.

Items 6 and 9 on the FBI relate to the parent's physical and verbal affection for the baby, and these parenting behaviors were among those the experimental group did best. Stern et al. (1969) indicated that displaying affection to the infant is a part of "ideal mothering." However, contrary to parents' responses on the interview, which were scored high, the observation item which focused on display of physical and verbal affection was scored somewhat lower. This may have been due to the presence of the observer or the possibility that the behavior occurred but not during the observational period. This evidence is too limited to draw conclusions concerning parents' knowledge about showing affection and whether they are able to do so. More data about this would be helpful to parenthood education programs.

Items 2 and 13 on the FBI relate to parent's fostering babies' openness to the environment. Clarke-Stewart (1973) noted that children's skills with objects (Item 2) were related to their mothers' provision of play materials. White et al. concluded that superior care givers encouraged curiosity (Item 13) among their babies. The experimental subjects scored well on these items. Although it is probably not necessary for teachers to alter their
curricula regarding these concepts, reinforcing what is being done may well be appropriate.

Both maturation (McGraw, 1946) and practice (White and Held, 1966; Dennis, 1941) are important to babies' performing physical skills. Item 1 on the PBI relates to the role of maturation in skill development on which the experimental subjects scored low in comparison to other items. However, they scored higher on the item probing their understanding of practice and development (Item 7). It is important for parents to appreciate the notion of readiness as well as practice in skill development.

From research findings in the Harvard Preschool Project, White (1975) concluded that it was important for caregivers to set clear limits for behavior for their children. The experimental subjects apparently did this, based on their response to a question about setting limits (Item 10); but also important to guiding the child's behavior is the explanatory response of the parent (Baumrind, 1975) to a child's misdeed. The experimental subjects did not score high on the item (number 5) which probed this behavior. Therefore, although the subjects said they set limits for their children's behavior, they appeared to reprimand their children's wrongdoing without an explanation of why the behavior was unacceptable.
As noted in an earlier chapter, the IPBI was developed for use with parents of children three to nine years of age. In this study, where the items posited situations which were beyond the development of their children, the subjects were instructed to respond to the inventory as they would when their children were older. Consequently, the results of the inventory must be viewed in light of the fact that the subjects marked some items as they thought they would behave in the future.

Means and Standard Deviations

Whereas the items in the rating scale and interview schedule are scored on five-point scales, the inventory has factor scores ranging from 14 to 40. The means, standard deviations and t values for the experimental and control groups appear in Table 3. Because these factors were derived by factor analysis in another study, they do not relate to single content areas of this study and, in fact, cross content areas. A discussion of the factors and items on the other devices which relate to them is included in this section.

Both the experimental and control groups scored highest on factors 3 (responsiveness), 4 (reasoning guidance), and 6 (intimacy). The responsiveness factor describes a parent who responds promptly to the child's expressed or implied needs even if it sometimes interferes with the parent's activity (Crase et al., 1978, p. 8).
Table 3. Inventory factor data for experimental and control groups

<table>
<thead>
<tr>
<th>Factor No.</th>
<th>Factor</th>
<th>Possible Score</th>
<th>Experimental n=15 Mean</th>
<th>S.D.</th>
<th>Control n=11 Mean</th>
<th>S.D.</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Parental involvement</td>
<td>20</td>
<td>14.1</td>
<td>3.1</td>
<td>13.5</td>
<td>3.0</td>
<td>.43</td>
</tr>
<tr>
<td>2.</td>
<td>Limit setting</td>
<td>40</td>
<td>31.5</td>
<td>5.8</td>
<td>29.8</td>
<td>5.7</td>
<td>.72</td>
</tr>
<tr>
<td>3.</td>
<td>Responsiveness</td>
<td>35</td>
<td>29.4</td>
<td>3.7</td>
<td>30.7</td>
<td>3.4</td>
<td>-.94</td>
</tr>
<tr>
<td>4.</td>
<td>Reasoning guidance</td>
<td>35</td>
<td>29.7</td>
<td>3.1</td>
<td>28.1</td>
<td>3.5</td>
<td>1.21</td>
</tr>
<tr>
<td>5.</td>
<td>Free expression</td>
<td>15</td>
<td>8.1</td>
<td>2.8</td>
<td>7.3</td>
<td>1.3</td>
<td>.93</td>
</tr>
<tr>
<td>6.</td>
<td>Intimacy</td>
<td>35</td>
<td>30.9</td>
<td>3.0</td>
<td>30.7</td>
<td>3.3</td>
<td>.11</td>
</tr>
</tbody>
</table>
The mean scores indicate that both experimental and control subjects reported that they often behaved in a responsive manner toward their children. Two items on the other devices relate to the responsiveness factor. Both groups had relatively high means on the observation item (number 4) assessing the parent's response to the child's demands for attention. The experimental group mean was relatively high, while the control group mean was slightly below the level of parenting judged adequate on an interview item (number 12) probing the parent's tendency and reason for giving sympathy to the child when he or she is hurt. So these higher item means from the observation and interview for the experimental group were consistent with the higher mean on the responsiveness factor.

The reasoning guidance factor describes a parent who uses reason in helping a child learn acceptable behavior (Crase et al., p. 9). Both experimental and control groups reported that they responded often with reason when guiding the children's behavior. However, when faced with a hypothetical situation on the interview (Item 5), the subjects' responses indicated that they were not apt to use much explanation in correcting an undesirable behavior from their children. There is, therefore, some discrepancy in the subjects' self-report of whether they use reason in guiding children's behavior and their response to a hypothetical situation where many did not elect to use reason.
The intimacy factor describes a parent who openly expresses physical affection to the child, whether alone or in the presence of others. The parent remains in close physical proximity to the child. The intimacy extends to expressing affection to others in the child's presence (Crase et al., p. 9). The subjects in both groups reported that they often to almost always behaved toward their children in a manner consistent with the intimacy factor description. The means on items in the observation (number 3) and interview (numbers 6 and 9) corroborate the factor scores. Both groups were observed to give a goodly amount of affection to their children; and two item means on the interview indicated that the subjects gave both verbal and physical affection to their children daily.

The three remaining factors on the IPBI that have lower scores are 2 (limit setting), 1 (parental involvement), and 3 (free expression). Both groups had moderate mean scores for limit setting. This factor describes the parent who is consistent and predictable in setting and enforcing limits (Crase et al., p. 8). At variance with this finding was the result from the item (number 10) on the interview which queried whether the subject set limits on her child's behavior. For both groups, the mean scores on this item were among the highest on the interview. It appears that the subjects said they set limits (on the interview), but when given specific instances of limits they set and enforced (on the inventory), they responded that they were only moderately apt to do so.
Both groups had lower scores on factors labeled parental involvement and free expression. No items on the observation or inventory related directly to these factors. The standard deviations were similar for the experimental and control groups, although on four of the six factors the experimental group had a somewhat wider variation of scores.

**Tests of Significance**

The t values for the factors for the two groups appear in Table 3. No statistically significant differences were found between the two groups. However, the experimental group had somewhat higher scores than the control group on five of the six factors.

**Summary**

In summary, there is no statistically significant difference between the experimental and control groups on the IPBI, although the experimental group means were higher on five of the six factors than the control group means. The self-report of the subjects indicated that they were responsive to their children, used reason in guiding their children's behavior, and were intimate with their children often or nearly always. The responsiveness and intimacy factors were corroborated by items on the observation and interview. However, a discrepancy appeared between the factor score of using reasoning guidance and an interview item. Because the IPBI was developed for use with parents of older children, the results must be viewed somewhat tentatively.
Program Effects

Differences in the two groups on all devices, although not strong, were in favor of the experimental group. One interpretation of the comparison is that those who had received parenthood education performed somewhat better in this study. Weiss (1972b) calls this weak program effects. According to her, social action programs in psychotherapy, corrections, and compensatory education often result in weak effects. Frequently program goals are broad (Weiss and Rein, 1970) and expectations for program accomplishments may not be realistic (Bernard, 1975). Since parenthood education has characteristics in common with social programs, weak effects of the programs are not surprising.

The following factors may explain the weak effects of the parenthood education programs in this study. The attempt to match control subjects with the experimental subjects was only partially successful as was indicated earlier. Also, the control group appeared to have had more experience with babies, particularly in their families of origin, than the experimental group. A larger sample which is better matched with control subjects might result in different findings. Nonetheless, the weak effects of programs in this study are similar to those of two other parenthood education programs which were cited in the review of literature.

The evaluations of the Parent-Child Centers (Holmes et al., 1976) and the Young Mothers Program (YMP) (Klerman and Jekel,
1973) involved samples and measures that are quite different from those in the present study so that comparisons of evaluation results beyond strength of effects are not appropriate. An intermediate evaluation of the PCCs indicated that participants had positive attitudes toward the programs, but there was no evidence of change in behavior. Hence, the evaluation indicated weak effects.

Klerman and Jekel indicated that short-term goals of the YMP, health of mother and neonate, delaying subsequent pregnancies, and the mothers remaining in school, were reasonably successful; but long-term program goals were not as successful (mothers dropped out of school, school and social problems appeared, and little progress toward self-sufficiency was made). They compared the short- and long-term assessments and discussed the concept of decline in program effects. Over time, the impact of the program declined. It is not possible to determine whether the programs in this study had a decline in impact on students, but the occurrence is possible and might account for the small differences in parenting behaviors of the experimental and control groups.

The only formal evaluation of a parenthood education program for in-school youth which has been reported is the evaluation of the Exploring Childhood curriculum (National Field Test, 1976). The evaluation used cognitive and attitudinal measures but did not include measures of actual parenting behaviors. Consequently,
findings indicating changes in that sample and in the present sample were not parallel. However, it should be noted that the evaluation of Exploring Childhood indicated attitudes about child care were strengthened: expressing tenderness toward children, using less severe forms of punishment, encouraging children's independence and autonomy. Little integration of the findings of the present study with that of others, beyond the above, can be done.

Intercorrelations of Observation and Interview Items

Three 30x30 correlation matrices were calculated: one each for the experimental group, the control group, and for the pooled within group. These matrices make possible an inspection of item correlations among the items and factors of the three devices. Only the matrices of the experimental and control groups are discussed because of their relevance to the performance of the two groups.

The correlation coefficient is a measure of strength of association between two variables. In a discussion of the interpretation of correlation, Issac and Michael (1976) pointed out that it does not indicate the percentage of determinants two variables have in common unless it is squared and becomes an estimate of variance. It indicates the portion of variance in one variable that accounts for, is associated with, or is determined by the other variable (p. 148).
Tables 4 and 5 show the intercorrelation coefficients of observation and interview items by content areas for the experimental and control groups. An inspection of the tables indicates that five intercorrelations were above .6, indicating a moderately high degree of association. They are arrayed below with the squared variances:

<table>
<thead>
<tr>
<th>Observation Item</th>
<th>Interview Item</th>
<th>r</th>
<th>$r^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>1</td>
<td>7</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>11</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>14</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>14</td>
<td>.69</td>
</tr>
<tr>
<td>Control group</td>
<td>5</td>
<td>11</td>
<td>.63</td>
</tr>
</tbody>
</table>

The intercorrelations of the experimental group are discussed first. Item 1 on the observation and Item 7 on the interview relate to the physical development content area with 36 percent of the variance being shared by the two items. The other three intercorrelations related to the parent as teacher content area. The percentage of shared variance for them is .37, .48, and .71. In the latter case, the high variance indicated that what the teachers observed (the presence of books) and what the subjects reported they did and their reasons for doing so (structuring the child's environment for learning) were consistent.

Only one intercorrelation for the control group indicated a high association of items on the two devices. Observation Item 5 and interview Item 11, which relate to parent as teacher, had a shared variance of .40 which was lower than that for the
Table 4. Intercorrelation among interview and observation content areas for experimental group

<table>
<thead>
<tr>
<th>Observation</th>
<th>4</th>
<th>7&lt;sup&gt;a&lt;/sup&gt;</th>
<th>6</th>
<th>9</th>
<th>12&lt;sup&gt;b&lt;/sup&gt;</th>
<th>3</th>
<th>11</th>
<th>14&lt;sup&gt;c&lt;/sup&gt;</th>
<th>2</th>
<th>8</th>
<th>13&lt;sup&gt;d&lt;/sup&gt;</th>
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<tbody>
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<td>1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.38</td>
<td>.60</td>
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<td>2</td>
<td>.39</td>
<td>.50</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>3&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>.17</td>
<td>-.09</td>
<td>.39</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td></td>
<td>.15</td>
<td>.15</td>
<td>.49</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.03</td>
<td>.84&lt;sup&gt;f&lt;/sup&gt;</td>
<td>.61&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
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<td></td>
<td>.32</td>
<td>.18</td>
<td>.69&lt;sup&gt;f&lt;/sup&gt;</td>
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<td>7&lt;sup&gt;d&lt;/sup&gt;</td>
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<td>.17</td>
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<td>8</td>
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<td></td>
<td></td>
<td></td>
<td>.52&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>Physical development

<sup>b</sup>Parental response to child's emotional needs

<sup>c</sup>Parent as teacher

<sup>d</sup>Parent's role in fostering openness to the environment

<sup>e</sup>Table value .05 = .51 (14 d.f.)

<sup>f</sup>Table value .01 = .64 (14 d.f.)
Table 5. Intercorrelation among interview and observation content areas for control group

<table>
<thead>
<tr>
<th>Observation</th>
<th>4</th>
<th>7&lt;sup&gt;a&lt;/sup&gt;</th>
<th>6</th>
<th>9</th>
<th>12&lt;sup&gt;b&lt;/sup&gt;</th>
<th>3</th>
<th>11</th>
<th>14&lt;sup&gt;c&lt;/sup&gt;</th>
<th>2</th>
<th>8</th>
<th>13&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.04</td>
<td>.17</td>
<td></td>
<td></td>
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<td>2</td>
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</tr>
<tr>
<td>3&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-.46</td>
<td>-.15</td>
<td>-.58</td>
<td></td>
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<td>4</td>
<td>-.39</td>
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<td>5&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td>-.10</td>
<td></td>
<td>.63&lt;sup&gt;e&lt;/sup&gt;</td>
<td>-.12</td>
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<td>6</td>
<td></td>
<td>-.50</td>
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<td>.55</td>
<td>-.04</td>
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<tr>
<td>7&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td>-.34</td>
<td></td>
<td>-.60</td>
<td>.46</td>
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<td>8</td>
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<td>-.24</td>
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<td>-.61</td>
<td>.27</td>
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</tbody>
</table>

<sup>a</sup>Physical development  
<sup>b</sup>Parental response to child's emotional needs  
<sup>c</sup>Parent as teacher  
<sup>d</sup>Parent's role in fostering openness to the environment  
<sup>e</sup>Table value .05 = .60 (10 d.f.)
experimental group (.71), but it is important to note that these items are consistent for both groups.

In contrast to the experimental group, the control group had many negative correlation coefficients which can be seen in Table 5. Eight of the 22 correlation coefficients were greater than -.34. The negative association meant that when the control subjects scored high on one measure, they tended to score low on the other.

The intercorrelations of items on the observation and interview devices give some basis for analyzing the relationship between knowledge about parenting and parenting behavior of the subjects. Although both devices focused on behavior, the interview schedule probed the reasons underlying the subjects' behavior. This elicited knowledge about child development, awareness of developmental activity in their children, and understanding of how parents fulfill needs of their children.

The intercorrelation coefficients indicated differences between the experimental and control groups regarding the association of knowledge and behavior in the content areas. As was noted in an earlier section, the experimental group had higher mean scores on nine of the ten observation items and on 11 of the 14 interview items than the control group, although in few instances were there statistically significant differences. The higher means on the interview suggested that the experimental group was more
knowledgeable about aspects of child development, was more aware of the developmental activities of their children, and better understood how parents fulfill the needs of children. The higher means on the observation and interview suggested that the parenting behaviors of the experimental group might have been somewhat more consistent with parenting skills associated with optimal development of children. Each intercorrelation coefficient of the observation and interview items within the content areas for the experimental group was higher than the corresponding one for the control group. Nearly half of the intercorrelation coefficients associating items within the content areas on the observation and interview were .44 or higher, indicating a moderate association between knowledge about parenting and parenting behaviors for the experimental group.

The control group intercorrelation coefficients varied from -.61 to .63 with over half of them ranging from -.39 to .39. This suggested that there was less association of knowledge and behavior in the control group, and in some cases knowledge and behavior had an inverted relationship.

Feasibility of the Evaluation Procedure

The purpose of this study was to develop a procedure for evaluating parenthood education. The evaluation procedure was judged satisfactory, and its implementation at the local level is feasible. Teachers were oriented to the evaluation procedure in approximately
two hours and used the materials effectively. Their visits to the homes of subjects required about two hours to observe the baby and mother and interview the mother.

The RSPB and FBI, which were developed for use in this study, were judged to be valid, reliable, usable instruments measuring salient parenting behaviors. The IPBI seemed less helpful than the other devices in discriminating among parents in this study, although it is useful for studying parents of older children. Scoring the devices and analyzing the data presented no problems.

Based on this study, there was no difficulty in selecting and contacting past students of parenthood education units and classes where the sample population existed. However, the narrowness of the criteria for the sample was the most limiting feature of the procedure, especially for the smaller programs. An adaptation in sample criteria is feasible and will help minimize this problem. Teachers indicated that the subjects who were identified for the study willingly received them in their homes and were cooperative.

Visits to the homes of past students for data collection are consonant with the tradition of home visits in vocational home economics. Such visitations are useful beyond just parenthood education evaluation. Feedback concerning other program aspects can be gained as well as the benefit of maintaining broad community contacts.
If teachers use this procedure as an on-going evaluation of the parenthood education aspect of their programs, they will compile sufficient data to use as a reliable basis for curricular decisions. Identification of the content areas where past students in a community exhibit strengths and weaknesses in parenting behaviors suggests not only changes in the high school curriculum but also adult education for parents of young children.
There were two primary motivations for conducting a feasibility study on the evaluation of the parenthood education component of vocational home economics programs. The Education Amendments of 1976 (P.L. 94-482) mandated that vocational programs supported by government funds be evaluated. Secondly, there is the ongoing need to identify aspects of home economics programs that might be improved. The objectives of this study were to 1) develop a procedure to evaluate the effectiveness of parenthood education in vocational home economics programs in Iowa by means of a follow-up study; 2) develop observation and interview devices to be used with a self-report inventory to assess parenting behaviors; and 3) using the above procedure and devices, compare the responses of parents who are past students of parenthood classes with parents who are not past students of parenthood education.

In order to effect the study, a sample of 15 past students of parenthood education was matched with 11 control subjects who had received no high school parenthood education. The past students, all of whom were female, had been enrolled for parenthood education three years previously. Each subject had a baby 12 to 24 months of age. A purposive sampling procedure was used to select both the subjects and the vocational home economics programs from which they were chosen. Teachers in the programs visited in the homes of
the subjects, observing and interviewing the mothers using the de-

vices developed for use in this study. A self-report inventory
identified during the review of literature was also used; all three
devices focused on parenting behaviors.

Content areas which were selected for assessment in this study
were derived from topics in a national census study concerning the
content being taught in home economics. The topics included physi-
cal growth and development, social-psychological development, in-
tellectual development, development of creative expression, safety
and first aid, and child rearing practices. The specific items
relating to the content areas were derived from research findings
and theory.

The Rating Scale for Parenting Behaviors (RSPB) is a ten-item
device assessing the parent's management of the physical environment
and interaction with the baby. It has an estimated inter-rater re-
liability of .70 and an estimated intra-rater reliability range from
.83 to .98. The scale was judged to be additive on the basis of
inter-item correlations. The Parent Behaviors Interview (PBI) is
a 15-item, semi-structured interview schedule which focuses on the
parent's behavior and the reasons given for them. Although there
is no numerical index of reliability, the PBI is judged to be highly
reliable because of the nearly identical results when used by teach-
ers to record a simulated interview. The content for both devices
was validated by child development and evaluation experts. The
Iowa Parent Behavior Inventory (IPBI) allows the parent to indicate the degree to which behavioral statements are typical of herself. There are six factors on the form for mothers with the reliability estimates for the factors varying from .56 to .81.

The first objective of this study was to develop a procedure for evaluating parenthood education. The procedure is judged to be satisfactory and its implementation at the local program level is feasible. Teachers can be oriented to the procedure quickly and effectively, and teachers in this study experienced no difficulty in gaining access to subjects' homes for data collection. The most limiting feature of the procedure is the narrowness of the sample criteria making it difficult to locate subjects, particularly in the smaller programs.

The second objective of the study was to develop observation and interview devices to be used in conjunction with an inventory. The devices were developed, and the characteristics stated above indicate that their validity, reliability, and usability make them suitable for use in broader parenthood education evaluations.

The third objective of this study was to use the above mentioned procedure and devices to compare the responses of past students of parenthood classes with those of parents who had not had parenthood education. On only four items out of 30 items and factors was there a statistically significant difference between the experimental group and the control group. But the experimental
group scored higher than the control group on 26 of the 30 items and factors on the devices. Because the attempt to match subjects met with only partial success, the comparison of the two groups is viewed somewhat tentatively. Both groups had mean scores at or above the level of parenting judged adequate on the RSPB. On the FBI, the experimental group had three of the 14 item mean scores below the level of parenting judged adequate, while the control group had half of the 14 item mean scores below the level judged adequate. The experimental group scored lowest on items which measure the content area of parent as teacher on the FBI as well as the RSPB. The control group had at least one item in each content area on the FBI which was low.

Recommendations based on the results of the study lie in these areas: further research, implementation of the evaluation procedure, and curricular decisions. Specific suggestions follow.

Recommendations for further research:

1) The study should be replicated using more effective controls.

2) The study should be replicated using other populations such as single parents and fathers.

3) The observation and interview devices should be used with an achievement test for broader measures of parenting behaviors.
Recommendations for implementation of the evaluation procedure:

1) The evaluation procedure should be revised in these ways:
   a) omit the IFBI because its factors were not clearly associated with the content areas and it does not appear to distinguish among parents of the age of babies which were the focus of this study;
   b) add a practice item at the beginning of the FBI to help establish the interview set before asking an item to be used in the data analysis;
   c) include in the sample all past students of parenthood education whose first baby is between 12 and 24 months of age, regardless of the interim since they were enrolled.

2) Teachers can use the procedure for an ongoing evaluation of their programs. If they can compile sufficient data, conclusions can be drawn concerning the state of parenthood education in their programs.

Recommendations regarding curricular decisions:

1) If the analysis of more data corroborates the findings about parenting behaviors in this study, inservice education focusing on pertinent topics for teachers of parenthood education would be desirable.
REFERENCE NOTES

SELECTED REFERENCES


Public Law 94-482. Title II: Vocational education, subpart 1. October 1976.


Stake, R. The countenance of educational evaluation. Teachers College Record, 1967, 68(7), 523-540.


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Thanks are given to:

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-- Denny for his unceasing and unselfish support.

-- Jesse for his constant companionship, especially during the early stages of the dissertation.

-- Others who shared in this odyssey.
APPENDIX A: RELATION OF ITEMS TO CONTENT AREAS
The relation of items on the **Rating Scale for Parenting Behaviors** and **Parenting Behaviors Interview** to the content areas

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Rating Scale for Parenting Behaviors</th>
<th>Parenting Behaviors Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical development</td>
<td>1 and 2</td>
<td>1, 4, and 7</td>
</tr>
<tr>
<td>Parental response to child's emotional needs</td>
<td>3 and 4</td>
<td>6, 9, and 12</td>
</tr>
<tr>
<td>Parent as teacher</td>
<td>5 and 6</td>
<td>3, 11, and 14</td>
</tr>
<tr>
<td>Parent's role in fostering openness to the</td>
<td>7 and 8</td>
<td>2, 8, and 13</td>
</tr>
<tr>
<td>environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety indoors</td>
<td>9 and 10</td>
<td></td>
</tr>
<tr>
<td>Guiding the child's behavior</td>
<td></td>
<td>5, 10, and 15</td>
</tr>
</tbody>
</table>
APPENDIX B: RATING SCALE FOR PARENTING BEHAVIORS
Instructions:

Observation for the rating scale is to be done during the interview visit in the subject's home. Become familiar with the rating scale. Either memorize the eleven items or make a discrete list to which you can refer while in the home, because you will not mark the device until after leaving. It is important to visit the subject at home while the baby is awake.

Ask to see where the baby sleeps, eats and plays inside. This will help you rate most items. Then give the mother the toy, telling her it's for the baby to keep. Ask her to give it to the baby and play with him/her for a few minutes so you can watch the baby's response. This interaction will help you judge items 3, 4, and 6. You will also use other cues during the visit to determine your ratings.

The rating scale is to be marked immediately after you leave the subject. Fill in the names of the subject and her baby. There are three descriptors for each item, and a five point continuum for marking the item. Mark one of the spaces in the continuum above or between the descriptor(s), which best describes what you saw while in the subject's home. There is also a space to check if you were unable to observe an item.

Thank you for carefully following this plan.
<table>
<thead>
<tr>
<th>Rating Category</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1. Toys Related to Physical Development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Large portion of toys encourages physical manipulation &amp; coordination</td>
</tr>
<tr>
<td></td>
<td>Some toys encourage manipulation &amp; coordination but may not be appropriate</td>
</tr>
<tr>
<td></td>
<td>for child's development.</td>
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<tr>
<td></td>
<td>Toys require only passive watching or handling; not aids to manipulation</td>
</tr>
<tr>
<td></td>
<td>or coordination.</td>
</tr>
<tr>
<td>2. Suitability of Equipment and Environment to Child's Physical Development</td>
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</tr>
<tr>
<td></td>
<td>Clothing, eating and sleeping equipment, and toy storage area are well suited</td>
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<tr>
<td></td>
<td>to child's physical development (stage, size, coordination). Aids such as a</td>
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<td></td>
<td>step stool, etc. are in evidence.</td>
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<tr>
<td></td>
<td>Some aspects of equipment and environment are not suitable for child's</td>
</tr>
<tr>
<td></td>
<td>physical development.</td>
</tr>
<tr>
<td></td>
<td>Clothing restrictive, eating or sleeping equipment and toy storage not</td>
</tr>
<tr>
<td></td>
<td>appropriate for child's physical development (e.g., chair too high or low,</td>
</tr>
<tr>
<td></td>
<td>bed too small, toy storage out of reach, etc.).</td>
</tr>
<tr>
<td>3. Parental Expression of Affection Toward Child</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequently expresses affection toward child verbally or physically.</td>
</tr>
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<td></td>
<td>In some situations, expresses affection toward child (e.g., when child is</td>
</tr>
<tr>
<td></td>
<td>hurt or solicits affection, etc.).</td>
</tr>
<tr>
<td></td>
<td>No evidence of verbal or physical expression of affection toward child.</td>
</tr>
<tr>
<td></td>
<td>not observed</td>
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<tr>
<td>4. Parent's Response to Child's Demands for Attention</td>
<td></td>
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<td>-----------------------------------------------------</td>
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<tr>
<td>Responds positively to most of child's expressed needs or desires for attention.</td>
<td>Acknowledges child's expressed needs or desires for attention when it is obvious.</td>
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<thead>
<tr>
<th>5. Presence of Books</th>
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<tbody>
<tr>
<td>Books appropriate for child are present (e.g., sturdy books of rhymes, simple stories, etc.).</td>
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</table>

<table>
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<tr>
<th>6. Parent's Vocalization to Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent vocalization or repetition of sounds.</td>
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</table>

<table>
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<tr>
<th>7. Child's Accessibility to Living Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child's access to living space stimulates exploration and curiosity.</td>
</tr>
</tbody>
</table>
# Creative Play Materials

| Play materials (toys & containers, lids, boxes, fabrics, etc.) which promote creative play are present. | Play materials are limited in their stimulation of creative play. | Play materials do not promote creative play. |

# Safety in Child's Environment

| Child's environment appears safe. | Child's environment has possible dangers present. | Child's environment has obvious dangers present (e.g., sharp objects, electrical hazards, toxic substances, unsafe toys, etc.). |

# Cleanliness of Child's Environment

| Child's environment appears clean. | Where child spends most of his/her time is somewhat unclean. | Child's environment is unclean (e.g., dirty diapers & clothes, dirt & debris on floor, food-stuff, etc. are present). |

# Orderliness of Child's Environment

| Child's environment appears orderly. | Although some clutter is present, the child's environment is neat enough for normal activities. | Child's environment is cluttered. |
APPENDIX C: PARENTING BEHAVIORS INTERVIEW
Instructions:

In order to accurately elicit what your subjects think and do, please become familiar with this interview schedule.

It is to be used in the presence of the subject by you, the interviewer. Ask the questions as they are stated and in the order in which they occur so that the instrument will measure the parent's answers as reliably as possible. Some questions have a word underlined to draw your attention to it so you can help the subject respond to the intended question. Repeat questions, if the subject needs it. Write down the responses as accurately and completely as possible in the space provided. Several items contain a blank marked with (*) where you should insert the name of the subject's baby as you read the questions. Where there are "he/she," "his/her," or "him/her" designations in the questions, use the appropriate pronouns. You may find it helpful to mark these before the interview.

It is important to establish good rapport with the subject, showing acceptance for her opinions and making her feel comfortable. In your own words explain the following reasons for interviewing her:

I want to find out how effective my home economics classes and units on children and parenting have been. One of the best ways to find out is to talk to parents. Your opinions and experiences will enable me to be more helpful to students in my classes this year.

The information you give me will be confidential. I will summarize the information I get from the people I interview to see how I might improve my courses. It will also be used with information from other schools to see how well we are doing with parenthood education throughout Iowa. I appreciate your help.

The interview will be scored by the researcher. The lines in the right margin are for that purpose and should be left blank.

Thank you for following this plan carefully.
Baby’s name: ___________________ Subject’s first name and last initial: ___________________

Today’s date: ___________________ Baby’s age in months: ________ Baby’s sex: ________

1. A. Is * beginning to do one of these activities: Walk when led, climb steps, walk alone, throw a ball, walk upstairs, or ride a moving toy? (or some other activity the parent may name)

Which? ____________________________

B. Why do you suppose * didn’t begin ____________________________ (activity named in A) earlier or later? ____________________________

Is there anything else?
2. A. Name 4 or 5 things around the house which really aren't toys that you have given * to play with:

________________________  __________________________  __________________________
________________________  __________________________

(If 5 are not named, ask once: do you think of any others?)

B. What has * done with them when he/she has used them for play?

________________________  __________________________  __________________________
________________________  __________________________

Is there anything else?

3. A. Let's say a friend takes her baby who is the same age as * to a relative's house. The relative has a baby lamb which is the first one the baby has ever seen. Which do you think your friend should say to her baby?

_____ 1. "Oh look! Isn't he cute?"

_____ 2. "See the lamb? He says 'baa.'"

B. Why is that better for the baby?

________________________  __________________________  __________________________
________________________  __________________________

Is there anything else?
4. A. What toys does * play with or activities does he/she seem to like that help his/her coordination? List 4 or 5:

_________________________________  ____________________________________  ____________________________________
  ___________________________________  ____________________________________

(If 5 are not listed, ask once: do you think of any others?)

B. How do these help him/her become more coordinated?

_________________________________  ____________________________________  ____________________________________
  ___________________________________  ____________________________________

Is there anything else?

5. A. Here is an example of what a parent might do. She finds her toddler marking on the kitchen wall. She says, "Shame on you! You're a bad girl for marking on mother's walls." Do you think this is a good way to handle this situation?

   __ Yes.   __ No.

B. Why do you think so? __________________________  What should she do instead? __________________________

   ____________________________________  ____________________________________
  ____________________________________  ____________________________________

Is there anything else?
6. A. Do you hold, hug, or cuddle * during the day in addition to when you feed or dress him/her?
   ____ Yes.
   ____ No.

   B. Why is that good for *?

   ____

   Why is that not good for *?

   ____

   Is there anything else?

7. A. Which of these statements do you agree with?
   ____ 1. Play is a child's pastime, but it doesn't affect physical development.
   ____ 2. Play is important partly because it helps with physical development.

   B. Why?

   ____

   ____

   ____

   Is there anything else?
8. A. When a baby is about 15 months old, which of these two approaches do you think is better?  
   1. Put away things the baby could harm.  
   2. Put the baby in a play room or play pen so he can't bother things that he could harm.  
   B. Why do you think that is better for the baby? ____________________________________________

Is there anything else?

9. A. You may have a friend or neighbor who does this. A few times a day she says to her baby, "I love you." Do you do that very often?  
   1. Yes.  
   2. No.  
   B. Why do you think it's a good thing to do for *?  

Why do you think it is not a good thing to do for *?  

Is there anything else?
10. A. Do you set limits on *'s behavior?  
   ___ Yes.  
   ___ No.  
   B. Why do you think that is good for *? 

11. A. Let's say you have a $40 gift certificate to spend on * during the next 6 months. What 4 or 5 toys or pieces of equipment would you buy that would help with his/her mental development?  
   ___________________________________________  ___________________________________________  
   ___________________________________________  ___________________________________________  
   ___________________________________________  ___________________________________________  
   (If 5 are not named, ask once: do you think of any others?)  
   B. If you were trying to help a younger relative understand her responsibility for her infant's mental development, what would you say to her?  
   ___________________________________________  ___________________________________________  
   ___________________________________________  ___________________________________________  
   ___________________________________________  ___________________________________________  
   Is there anything else?
12. A. When * bumps his/her head hard and cries but is not injured, which do you do?
   ____ 1. Pick him/her up and kiss the bumped spot, giving sympathy.
   ____ 2. Tell him/her that it didn't hurt and not to cry.

   B. Why is that better for *? ____________________________________________

   ________________________________________________________________
   ________________________________________________________________

   Is there anything else?

13. A. Does * seem curious about new or unusual things which he/she hasn't seen or
      heard before? For example: toys, moving objects, or noise.
      ____ yes.       ____ No.

   B. What do you do when * sees or hears something new or unusual? ________________

   ________________________________________________________________
   ________________________________________________________________

   Is there anything else?
14. A. Are you teaching * names of things such as nose, block, dog?  
   Yes.  No. 
   B. Why is it important for * to learn these things now? 
   Why is it not important for * to learn these things now? 

15. A. Let's say your neighbor has a baby named Pat who has a new toy hammer and pegs in a board. Pat picks up the hammer and hits the furniture and walls with it. Which would you do if you were Pat's parent? 
   1. Take the hammer away and say, "No, Pat, you can't play with that if you're going to hit things." 
   2. Guide the baby's hand to the pegs and say, "Here, Pat, hit the pegs with the hammer." 
   B. Why do you think that would be better for Pat? 

Is there anything else?
APPENDIX D: KEY FOR SCORING PARENTING BEHAVIORS INTERVIEW
KEY FOR SCORING PARENTING BEHAVIORS INTERVIEW

1. A. 2 pts : identifies a physical skill baby is developing
   B. 3 pts : baby not ready or able; or, was ready or able then

2. A. 2 pts : naming 4 or 5 appropriate items that aren't toys; only 1 pt. for naming 2 or 3 appropriate items
   B. 3 pts : explicitly describes child's exploration of the object's characteristics; only 2 pts. for describing how the child plays with it

3. A. 2 pts : number 2
   B. 3 pts : 1 point each for lables lamb, tells what the lamb says, tells more about the lamb, or tells lamb from other animals

4. A. 2 pts : listing 4 or 5 toys or activities helping with coordination; only 1 pt. for 2 or 3 toys or activities
   B. 3 pts : toys or activities give practice or opportunity to develop coordination, or practice helps coordination; but only 1 pt. for playing with toy or doing activity

5. A. 2 pts : No
   B. 2 pts : tells what baby should do instead
   1 pt : explains why it was wrong; or should not shame or tell child he/she is bad

6. A. 2 pts : Yes
   B. 3 pts : shows baby he/she is loved; or baby needs love or affection; but only 1 pt for baby learns to give or show love

7. A. 2 pts : Number 2
   B. 2 pts : gives practice or experience for coordination or development, or develops physical skills
   1 pt : helps strengthen muscles or aids growth

8. A. 2 pts : Number 1
   B. 3 pts : babies are curious or they need to explore or experience things; but only 1 pt. for baby's safety
9. A. 2 pts : Yes  
B. 3 pts : shows baby he/she is loved or baby needs love or affection; but only 1 pt. for baby learns to give or show love

10. A. 2 pts : Yes  
B. 3 pts : baby must learn acceptable or safe behavior, or baby must learn what is right and wrong

11. A. 2 pts : listing 4 or 5 items that are appropriate for intellectual development; but only 1 pt. for 2 or 3 such items  
B. 3 pts : 1 pt. each for parent is teacher, parent interacts with baby, parent structures environment for learning

12. A. 2 pts : Number 1  
B. 3 pts : positive response to baby's emotional need

13. A. 2 pts : Yes  
B. 3 pts : helps or encourages baby's curiosity; only 1 pt. if exploration is allowed

14. A. 2 pts : Yes  
B. 2 pts : baby is ready, able, or needs to learn  
1 pt : early years important for mental development

15. A. 2 pts : Number 2  
B. 2 pts : show baby acceptable way to play or behave  
1 pt : be positive rather than negative or punitive
IOWA PARENT BEHAVIOR INVENTORY (Mother Form)

Sedahlia Jasper Crase, Sam Clark, Damaris Pease
Department of Child Development
Iowa State University

We are interested in learning more about how parents and children interact. The following statements represent a variety of ways that parents may interact with their children. Before you begin, have firmly in mind the child you are rating. Please respond to the statements in the way which you feel best represents your behavior toward the child. Base your ratings on your own experiences with this child over the last month.

Consider each statement separately. There are no "right" or "wrong" responses. In the space provided to the left of each statement, place the number (1 to 5) that best describes how you see your behavior toward your child. Reverse "5" if you think you always behave as described and "1" if you think you never behave that way. Use numbers larger than "3" to show you behave that way more than half the time, and numbers smaller than "3" to show you behave that way less than half the time. This means the more you behave as described, the larger the numbers should be, and the less you behave as described, the smaller the numbers should be. To the extent you are uncertain you behave that way, your response should be "3". If an item does not apply to your particular home situation, place a "3" in the rating column. Please make use of the full range of the scale.

<table>
<thead>
<tr>
<th>RATING SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I almost never behave this way</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

1 © copyright, 1977, 1976. Iowa State University Research Foundation, Inc. All rights reserved.
RATING SCALE

<table>
<thead>
<tr>
<th>I almost never behave this way</th>
<th>I seldom behave this way</th>
<th>I behave this way about half the time or I'm not sure how often I behave this way</th>
<th>I often behave this way</th>
<th>I almost always behave this way</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

TO WHAT EXTENT DO YOU........

RATING ITEM

1. Excuse yourself from invited guests when your child asks for help with such things as pasting, sewing, or model building?
2. Require your child to remain seated in the car while you are driving?
3. Give your child things he or she especially likes when he or she is ill?
4. Go to your child quickly when you see his or her feelings are hurt?
5. Find children's books, reference books or records that you and your child can share together?
6. Explain to your child the consequences related to his or her behavior?
7. Restrict the times your child can have friends over to play?
8. Find crafts such as painting, coloring, woodworking or needlework you and your child can do together on cold, rainy days?
9. Listen when your child tells you of a disagreement he or she has had with another child?
10. Interrupt a telephone conversation to assist your child if he or she can't find such things as scissors, thread or paste?
11. Require your child to put away his or her clothes?
12. Enforce your child's established bedtimes when he or she ignores them?
13. Restrict the kinds of food your child eats?
14. Listen to your child when he or she is upset even though you feel he or she has nothing to be upset about?
### RATING SCALE

<table>
<thead>
<tr>
<th>I almost never</th>
<th>I seldom</th>
<th>I behave this way about</th>
<th>I often</th>
<th>I almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>behave this way</td>
<td>behave this way</td>
<td>half the time OR I'm not sure how often I behave this way</td>
<td>behave this way</td>
<td>behave this way</td>
</tr>
</tbody>
</table>

### TO WHAT EXTENT DO YOU........

<table>
<thead>
<tr>
<th>RATING</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>Tell your spouse of your annoyance with a neighbor or employer while your child is listening?</td>
</tr>
<tr>
<td>16.</td>
<td>Insist your child speak politely to you as opposed to being sassy?</td>
</tr>
<tr>
<td>17.</td>
<td>Remind your child when he or she forgets to do daily household chores?</td>
</tr>
<tr>
<td>18.</td>
<td>Explain to your child when he or she behaves in an unacceptable way, your reasons for not approving that kind of behavior?</td>
</tr>
<tr>
<td>19.</td>
<td>Hold, pat or hug your child?</td>
</tr>
<tr>
<td>20.</td>
<td>Point out to your child the acceptable choices of behavior when he or she misbehaves?</td>
</tr>
<tr>
<td>21.</td>
<td>Maintain the limits you have set for your child's television watching?</td>
</tr>
<tr>
<td>22.</td>
<td>Change plans to attend a night meeting so you can be with your child if he or she becomes ill?</td>
</tr>
<tr>
<td>23.</td>
<td>Go immediately to your child when you see him or her hurt from a fall off a bicycle?</td>
</tr>
<tr>
<td>24.</td>
<td>Disagree with your spouse when your child is present?</td>
</tr>
<tr>
<td>25.</td>
<td>Ask your child for his or her reasons when he or she misbehaves?</td>
</tr>
<tr>
<td>26.</td>
<td>Go to your child quickly when you hear him or her sobbing?</td>
</tr>
<tr>
<td>27.</td>
<td>Get out of bed at night to go to your child as soon as you hear him or her crying?</td>
</tr>
<tr>
<td>28.</td>
<td>Let your child know that you are afraid during fear provoking situations such as storms?</td>
</tr>
<tr>
<td>29.</td>
<td>Make special efforts to stay with your child when he or she is ill?</td>
</tr>
<tr>
<td>30.</td>
<td>Hug or kiss your spouse in the presence of your child?</td>
</tr>
</tbody>
</table>
## RATING SCALE

<table>
<thead>
<tr>
<th>1</th>
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<th>RATING</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____</td>
<td>31. Help your child to recognize another person’s point of view?</td>
</tr>
<tr>
<td>_____</td>
<td>32. Take your child with you when you visit friends?</td>
</tr>
<tr>
<td>_____</td>
<td>33. Tell your child when you are in agreement with him or her?</td>
</tr>
<tr>
<td>_____</td>
<td>34. Cry if you feel like crying when your child is present?</td>
</tr>
<tr>
<td>_____</td>
<td>35. Work together with your child on household and yard cleaning tasks?</td>
</tr>
<tr>
<td>_____</td>
<td>36. Hold, pat and/or hug your child when other children are watching?</td>
</tr>
</tbody>
</table>

Thank you.
APPENDIX F: LETTER TO SCHOOL ADMINISTRATORS
July 16, 1979

Mr. Eugene C. Farrell
East High School
5011 Mayhew Avenue
Sioux City, Iowa  51106

Dear Mr. Farrell

We are writing regarding a research project being done in the Home Economics Education Department at Iowa State University. We would like to include your school in the research.

The study is called "Evaluation of Parenthood Education Components of Vocational Home Economics Programs in Iowa." It is an attempt to assess the impact of parenthood education in high school home economics classes. This initial stage is expected to determine the quality of our measurement devices and the feasibility of our procedures.

We are asking home economics teachers in our sample to visit in the homes of four mothers who were students at their high schools three years ago. Two of the mothers will have been enrolled in a class relating to parenthood education, and two will not have been. Each visit will take about one and one-half hours and during that time the teacher will observe the baby and the mother and interview the mother. Prior to the teacher's arrival the mothers will have been asked to fill out a questionnaire. If possible, we would like to know the grade point averages of these individuals; if this is not feasible we will try other alternatives for matching our sample.

We believe the teachers who participate will benefit by having added information from parents in their communities. They are encouraged to add questions to the devices, if they wish. Unfortunately, we do not have funds for paying the teachers for their time and effort. In visiting with teachers around the state, we found that a home economics teacher at your school expressed interest in the parenthood aspect of her curriculum and hope she will be able to participate.

We are writing to ask if your school can participate in the study. Please indicate on the enclosed postcard whether your school can participate. We would appreciate your response by July 25.
Your agreement to be included in the research does not obligate your home economics teacher. We will contact her immediately upon receiving your reply to see if she is willing to participate.

Thank you for your help. If you have questions, please call Jerry McClelland at (319) 338-6849.

Sincerely,

Ruth P. Hughes, Head
Home Economics Education

Jerry McClelland
Graduate Student
Ms. Diane Hanson  
Home Economics Department  
Fairfield Community High School  
East Broadway  
Fairfield, Iowa  52556

Dear Ms. Hanson:

As you may know, a parenthood education evaluation project is being done by the Home Economics Education Department at Iowa State University and we would like for you to participate. We received permission from an administrator in your school district to contact you.

The study, "Evaluation of Parenthood Education Components of Vocational Home Economics Programs in Iowa," is an initial step in developing a procedure to evaluate our present efforts in parenthood education. We are asking ten vocational home economics teachers to visit in the homes of two students who were enrolled in one of their parenthood education or child development classes during the 1976-77 school year and of two students who did not study parenthood education or child development in high school. All four persons should be female and have babies between 12 and 24 months of age. During the visit, which will require about one and a half hours, participating teachers will observe the mother and baby and interview the mother. A rating scale and interview schedule have been developed for this purpose. An inventory will also be sent to the respondents.

We believe teachers will benefit from participating in the project by gaining more information from past students who are now parents. Teachers are welcome to add questions to the interview if they like. Unfortunately, we have no funds to pay teachers for their time and effort.

There will be an orientation session at the fall conference in Cedar Falls to practice using the evaluation materials and to discuss the procedure and sample. We will meet at 7:00 p.m. on Wednesday, August 8. Look on the bulletin board at the
information desk for the room number. If you cannot attend the orientation session, Jerry McClelland will contact you for a suitable time to review the materials, procedure, and sample criteria. We hope you will be able to help with this study.

Please indicate on the enclosed postcard whether you will participate in the study and whether you will attend the orientation session during fall conference. We hope to see you in Cedar Falls.

Sincerely,

Ruth P. Hughes, Head
Home Economics Education

Jerry McClelland
Graduate Student
EXEMPLARY LETTER TO ACCOMPANY QUESTIONNAIRE

The letter below may be copied, filling in the blanks, or altered for your situation. In either case, it should be written on your school's letterhead and sent to your subjects with a copy of the Iowa Parent Behavior Inventory (which is on green paper). Large, stamped envelopes are in your packet for this purpose.

Dear ________:

It was good to talk to you on the phone recently and I look forward to visiting with you some more on __________. Thanks for being willing to help with the parenthood education follow-up.

I have enclosed the questionnaire for you to fill out. Please complete it by __________ (same date as above) and I will pick it up then. The instructions are on the first page. In the blanks for names, please write only your and your baby's first name and last initial. The only thing I would add to the instructions is, if an item seems too old to apply to your baby, rate it the way you would if _________ (name or pronoun) were older.

I will see you __________ (date) at __________ (time).

Sincerely,
APPENDIX I: DEMOGRAPHIC INFORMATION FORM
DEMOGRAPHIC INFORMATION

Supply this information without directly questioning the subject. During the visit casually ask about the topics you cannot answer from your own knowledge. Write down as much information as you can after the visit.

1. Subject's first name and last initial:

2. Was this subject a "past parenthood education student"?
   (circle one) Yes No (If "yes," answer no. 3; if "no," omit no. 3).

3. Was this subject enrolled in a: (check one)
   - semester class which was devoted entirely to child development or parenthood education?
   - class which had one or two units on child development or parenthood education?
   - other? Please explain.

4. Is this subject: (check one)
   - White Anglo Saxon?     American Indian?      Chicano?
   - Black?                 other? Please explain.

5. Is this subject employed:
   - none?
   - full time?
   - part time or occasionally?
   - other? Please explain.

6. What is this subject's GPA?

7. What kind and how much experience has this subject had with babies up to two years of age other than her present 12 to 24 month old baby? (e.g., provided daycare for others, cared for niece for a summer, etc.)

8. What, if any information has the subject received about child care, for babies up to two years of age, since your class, if she is a "past parenthood education student"? (If she is a "non-parenthood education past student," what has she received from any source?) (e.g., physical care from books, discipline from adult education class, etc.)

9. First name and last initial of person with whom this subject is paired:
APPENDIX J: CONSENT FORM
The Department of Home Economics Education at Iowa State University, with the help of home economics teachers in twelve high schools, is doing research on parenthood education in high school home economics classes. The research project, "Evaluation of Parenthood Education Components of Vocational Home Economics Programs in Iowa," has been approved by the College of Home Economics. It is being conducted by Professor Ruth Hughes and Jerry McClelland, a graduate student. We are asking you for permission to use the information we get from you on a questionnaire, in an interview, and from observing your baby in your home. We will use only your first name and last initial on the research materials to protect your privacy. Please indicate your willingness to be in the study by signing your name.

Name: ______________________ Date: __________________

Home Address: __________________________

I give my consent for ______________________ (home economics teacher) to obtain from school records and report to the researcher my high school grade average.

I also give consent for information from the questionnaire, interview, and observation of my child in my home to be used for the research project described above. I understand that the information will not be made public in any form that would permit identification of my child or me.

Signature