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Criteria for determining effectiveness of homemaking teachers

Mary Marguerite Scruggs
Iowa State University

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CRITERIA FOR DETERMINING
EFFECTIVENESS OF HOMEMAKING TEACHERS

by

Mary Marguerite Scruggs

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Major Subject: Home Economics Education

Approved:

Signature was redacted for privacy.

In Charge of Major Work

Signature was redacted for privacy.

Head of Major Department

Signature was redacted for privacy.

Dean of Graduate College

Iowa State University
Of Science and Technology
Ames, Iowa
1959
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INTRODUCTION

Judgments undoubtedly have been made concerning the effectiveness of homemaking teachers ever since homemaking education became a part of the curriculum of the secondary schools. Little research has been carried on to support these judgments, and criteria for making decisions regarding teacher effectiveness have not been established. The importance of research to aid in determining criteria and developing criterion measures, the purposes of the present investigation, and definitions of terms are included in this chapter.

Importance of Research on Criteria of Effectiveness

The Committee on the Criteria of Teacher Effectiveness of the American Educational Research Association pointed out that:

... criteria of teacher effectiveness must stand at the apex of any conceptual system for the development of scientific understanding, prediction, and administration of teacher personnel. (8, p. 239)

Decisions that require the use of criteria were classified by the Criteria Committee into four types: namely, decisions regarding teachers, persons just completing their preparation for teaching, students in a teacher-education program, and applicants for admission to a teacher-education program (9, p. 645).
Criterion measures to be used in the selection of applicants for admission to a teacher-education program need to be predictors of the effectiveness of the applicant when he becomes a teacher. In order for the validity of predictors to be tested, valid and unbiased criterion measures for determining the effectiveness of an experienced teacher are necessary. One method of obtaining predictors entails longitudinal studies in which predictive measures are administered to candidates for entrance into a teacher-education program, criterion measures are used later in determining the effectiveness of these same persons as teachers, and the efficiency of the predictors in predicting criterion results is tested.

Research on criteria of teacher effectiveness is also important because of the need for information concerning relationships that may exist among various criteria. The Criteria Committee stated:

The essential problem in research on teacher effectiveness is finding which teacher dimensions (behaviors and characteristics) are related, under what conditions, to specified effects on pupils . . . . (4, p. 645)

A number of research workers have indicated that criteria of teacher effectiveness may vary with educational goals and, therefore, with the subject matter and grade level taught (9, p. 652; 20, p. 85; 52, p. 39). Nelson et al. suggested:
Further research should be undertaken to develop measures of teaching effectiveness which are more specific for the various types of teachers .... It is likely that no single instrument can be used with equal effectiveness for all types of non-academic teachers. (41, p. 84)

In their report homemaking teachers were classified as non-academic teachers (41, p. 21). Because criteria for determining the effectiveness of homemaking teachers are not necessarily the same as those for other teachers, research is needed to aid in the development of criterion measures specifically for homemaking teachers.

Exploratory studies of criteria and criterion measures are needed in order to improve precision of measurement, increase comprehension of dimensions of the criteria, study relationships among criteria, and improve the adequacy of criteria. Other justification for testing criterion measures has been given:

Assuming a multiplicity of approaches to a criterion, it is incumbent upon the researcher undertaking a study to conduct preliminary investigation of the criterion and criterion measures in order to be reasonably assured of their relevance and usability. (52, p. 37)

Purposes of the Present Investigation

Within the Home Economics Education Department of Iowa State College plans are being developed for research to aid in identifying those applicants for admission to the teacher-education program who can be expected to become effective
homemaking teachers in secondary schools. The present investigation is an exploratory study of criterion measures of teacher effectiveness that might be considered for use in future studies of graduates who are majors in the Department and who teach homemaking at the secondary school level.

Purposes of the present study include the selection and adaptation of measures of criteria for determining the effectiveness of homemaking teachers, the determination of the extent to which each of these measures discriminates among the homemaking teachers, and the study of interrelationships among the criteria. It is assumed that as a result of the preliminary testing of criterion measures recommendations can be made regarding improvements in the criterion measures and methods of securing criterion data.

Definition of Terms

Definitions have been accepted for a number of terms that appear frequently in the report of this investigation.

Teacher effectiveness

Teacher effectiveness is the degree to which the teacher produces effects or the extent to which the teacher causes the attainment of educational objectives. The Criteria Committee of the American Educational Research Association classified the effects of the teacher as those on pupils, on school
operations, and on the school-community relationship (8, p. 244). While all three of these categories of effect are important to comprehensive research on teacher effectiveness, the present study and the review of research are confined to those aspects of effectiveness which deal with the effects of the teacher on the pupils.

Criterion

A criterion was defined by Ryans as:

... a standard or rule used to provide a frame of reference for judging or testing something. It is a base, often of a rather arbitrary nature and ultimately involving value judgments, against which comparisons may be made. (52, p. 34)

The Criteria Committee made a distinction between conceptual formulations and operational definitions of criteria. They stated that the former refer to criteria, while the latter are concerned with methods of securing data related to criteria. (8, p. 241)

Criterion dimensions

Criterion dimensions are properties of criteria. The definition used by the Criteria Committee was: "Criterion dimensions are abstractions of just one or a few types of characteristics from the infinite variety of characteristics of a set of objects." (8, pp. 242-243) The Committee further explained: "A criterion is always concerned with one or more
specified dimensions of whatever is being measured." (8, p. 242) For example, if effects of the teacher on the attainment of educational objectives by pupils are being measured, the criterion dimensions are the educational objectives. If teacher behaviors are used as a criterion, the criterion dimensions are those aspects of behavior which are components of the criterion.

**Method of measuring a criterion dimension**

A method of measuring a criterion dimension is a procedure for securing data about the criterion or a way of assessing properties of the criterion. Such methods as administering tests, rating performance by experts, observing and recording behaviors of teachers and pupils, and judging characteristics of teachers on the basis of day-to-day contacts with the teacher have been used in research on teacher effectiveness. Instruments that have been most commonly used are paper-and-pencil tests, rating scales, attitude inventories, and observation records. Some writers refer to these instruments as criterion measures.
In addition to numerous reports of individual studies, a number of comprehensive reviews of research on teacher effectiveness have appeared in the literature. Such reviews have been written by Ackerman (1), Barr (4, 5, 6, 7), Barr et al. (10), Barr and Jones (11), Fulkerson (19), Long (34), Mitzel and Gross (39), and Tomlinson (64, 65). These summaries have revealed a number of trends in research on criteria of the effectiveness of teachers. This chapter contains a brief survey of these trends followed by a review of investigations that have employed two types of criterion dimensions, effects of teachers and behaviors or characteristics of teachers.

Trends in Research on Criteria of Teacher Effectiveness

Within approximately fifty years study of the effectiveness of teachers has developed from an informal process of gathering opinions about teachers to scientific research. One problem, that was common to all of the studies of this period and still exists today, is that of establishing valid criteria of teacher effectiveness (64, p. 64). Various criterion dimensions, types of criterion measures, and methods of securing criterion data have been investigated.

In summarizing research conducted prior to 1930 Tomlinson wrote:
Trends in the early research in the evaluation of teaching are only roughly distinguishable . . . . The earliest efforts were concerned mainly with the collection and organization of opinions as to the qualities of successful teachers and the causes of teacher failure. In the decade from 1910 to 1920, attempts to perfect rating scales and other observational devices seem to have dominated the activities. (64, p. 70)

After World War I, there was a marked increase in the efforts to develop and utilize objective instruments of measurement and to establish a more valid criterion of teaching efficiency . . . . Finally, just at the close of the period, two extensive studies of the qualities of teachers appeared. (64, p. 71)

Studies that Tomlinson selected as representative of research trends from 1930 to 1943 included six in which opinions of pupils concerning desirable and undesirable traits of teachers were secured, two that employed measurements of pupil growth, and nine in which the relationship between specific traits and general ratings of teacher effectiveness by such persons as supervisors or principals were determined. In addition Tomlinson reported that several tests of professional knowledge were widely used as examinations for teachers although they were seldom used as a basis for certification. (65)

Beginning in 1946 Barr has summarized research on teacher effectiveness triennially. During the three years covered by the 1946 review, major emphases in the research included a shift from the study of teacher-rating scales as criterion measures to more objective tests and inventories; extensive
use of measurements in the selection, guidance, education, placement, and follow-up of teachers; and the use of correlation and factor analysis techniques by several investigators in analyzing criterion data (4, p. 207).

In his 1949 review Barr stated that psychologists as well as educators had become interested in the measurement of teaching success (6, p. 185) and that:

(a) The studies of the last three years appear to have grown in complexity and to have employed better controls, better measuring instruments, and better statistical procedures. (b) A large number of investigators attacked problems growing out of effects of teacher personality upon human relationship. (c) In the field of data-gathering devices, both so-called objective and carefully constructed subjective instruments have been used with profit. (d) The carefully controlled studies of this period showed a marked improvement in accuracy over less well controlled studies. (6, p. 187)

Trends pointed out by Barr in 1952 included an increased concern with criteria of teaching effectiveness, teacher-pupil relations, and teacher personality; the development of a variety of new measuring instruments; and the application of some new statistical techniques (7, p. 189).

The continuation of the trends toward greater sophistication of research and toward increased awareness of the importance that needed to be attached to the criteria used was reported in 1955. Barr et al. summarized further:

There is much interest in student evaluation of teachers. The search continues for a single generalized pattern of qualities or behaviors that characterize good teachers, notwithstanding the
possibility that differential studies of teachers teaching different subjects to different sorts of pupils, under different conditions, and for different purposes might prove worthwhile. (10, p. 266)

Barr and Jones characterized the stage of development of research on teacher effectiveness in 1958 as follows:

Gradually investigators are coming to see the subject as one of great complexity with many ramifications. There seems to have been some tendency to concentrate upon aspects of the subject instead of continued attention to the totality of teaching efficiency. There has also been considerable attention during this period to the theoretical orientation of research in this field. The vocabulary and design of research have been brought more generally into agreement with those of psychological research. (11, p. 256)

... while progress has been made, most of the studies are largely exploratory in character ... While an immense amount of time and thought have been given to the criteria of teacher efficiency, researchers continue to find low correlations among the more important sources of criteria such as supervisory ratings, measures of pupil growth and achievement, pupil evaluations, and teacher tests of what are thought to be fundamental knowledge, attitudes, and skills. (11, p. 261)

This brief survey of trends in research on the development and use of criteria for determining the effectiveness of teachers provides a background for the review of investigations which follows.

Criterion Dimensions Used in Research on Teacher Effectiveness

Several limitations were set upon the present review of research. Because investigations of recent years could be expected to be better designed than earlier research and to
make use of improved statistical procedures, only those which have been reported in the literature since 1949 were reviewed. Studies of the effectiveness of elementary and secondary school teachers were selected for inclusion because teaching at these levels could be expected to be affected by more factors in common with the teaching of homemaking than would be true for college teaching. Several studies of military instructors were reviewed because they used criterion dimensions pertinent to the present study.

The investigations which are reviewed in this chapter have been grouped together according to the criterion dimensions that were utilized. The two types of dimensions represented are effects of teachers and behaviors and characteristics of teachers.

Effects of the teacher

Effects which have been used as criterion dimensions include achievement of educational objectives by pupils, behaviors of pupils in the classroom, attitudes of pupils toward the teacher or the class conducted by the teacher, and amount of work carried out by pupils. All of these effects are those of the teacher upon pupils. Although the Committee on Criteria of Teacher Effectiveness of the American Educational Research Association suggested that criterion dimensions of teacher effectiveness needed to include effects of teachers
on schools and communities as well as upon pupils (8, p. 245), no examples of the measurement of effects other than those on pupils were found in the literature reviewed.

**Achievement of educational objectives by pupils**

The achievement of educational objectives by pupils has been generally recognized as a relevant dimension of teacher effectiveness (8, p. 244) but has not been extensively employed by research workers. Although a few studies have utilized only a measurement of the achievement level of pupils at the end of a period of instruction, this criterion dimension has usually been measured in terms of the change or growth of pupils during a term of instruction. Comprehensive reviews of research that employed measurements of pupil change have been written by Ackerman (1) and Mitzel and Gross (39). Almost all of the studies reviewed by them were reported prior to 1950. Such research has also been briefly reviewed by Barr (5), Barr and Jones (11), and Tomlinson (65) as well as in an index to research conducted at the Air Force Personnel and Training Research Center (27).

Researchers who have attempted to use measures of growth of pupils have encountered a number of difficulties. Ackerman concluded that the results of the more than thirty studies which he reviewed were contradictory and inconsistent (1, p. 284). Procedures used in twenty studies that involved growth of pupils at the elementary and secondary level and that were
reported in educational literature between 1921 and 1951 were criticized by Mitzel and Gross (39). Some of the problems that are involved in the use of a criterion dimension of pupil growth are discussed in another chapter.

The Office of Research and Evaluation of the Division of Teacher Education of the municipal colleges of the City of New York has conducted a series of studies as a part of a longitudinal investigation of graduates of their teacher education program. Two employed a criterion of pupil growth in reading ability in classes of forty-nine beginning teachers in grades three through six in New York City public schools. Medley and Mitzel reported that equivalent forms of a reading test were given to the pupils in the fall of 1954 and the following spring. In their use of analysis of variance and covariance they controlled for school differences in average amounts of gain in reading ability among pupils and for the following differences among pupils: learning aptitude, previous reading achievement, and grade level. They found substantial differences among teachers in terms of the growth of their pupils in reading ability. (37, p. 239) No significant relationships between growth in reading ability of pupils and certain observed verbal behaviors of the forty-nine teachers were reported by Silberman (58, p. 205).

Measures of pupil gain used by McCall in his investigation of the effectiveness of seventy-three sixth-grade
teachers in North Carolina included tests of general mental ability, comprehensive achievement tests, a questionnaire on health and citizenship practices, a word-knowledge test, a social behavior rating scale on which pupils were rated by the teacher and fellow pupils, and an original handwritten composition (35, pp. 12-15). The general plan of the study was:

... to measure comprehensively the growth produced in each class, to weight the elements of the growth according to importance, to secure a single composite figure for all the growths made by each class, to correct this weighted crude growth for the capacity of the class to grow and for differences in class size if the latter appeared to influence growth, and then to correlate a large number of measures of the teacher's traits with this purified criterion (weighted crude growth corrected for capacity of class to grow and for class size) of each teacher's worth as a teacher. (35, p. 10)

McCall reported that the criterion of pupil growth successfully discriminated among the teachers; the criterion scores of the teachers ranged from 20 to 80 (35, p. 20). A number of other measures of teacher effectiveness were not found to be valid measures of ability of teachers to produce growth in pupils (35, pp. 25-32).

In a study of thirty Wisconsin teachers no correlations significantly different from zero were found between measures of pupil gain or pupil achievement and ratings of the teacher by the principal, pupils, colleagues, and the teacher (2, p. 68). Achievement tests in typing, mathematics, English, gen-
eral science, algebra, and world history were mailed to the school principals and administered under their supervision. The tests were taken by the pupils in December and in the spring seventy or seventy-five school days after the initial testing (2, p. 49). The differences between predicted and actual pupil achievement were used as the criterion measurements of pupil achievement. The regression equations that were employed in predicting achievement took into account the age, measured intelligence, previous knowledge of the subject, and average scholastic standing of the pupil. (2, p. 68)

Student gains in knowledge and ability to perform certain tasks were used as dimensions of instructor effectiveness in a study of 106 instructors of a course in aircraft mechanics at Sheppard Air Force Base (40, p. 81). The criterion measurements were the mean post-test scores on a test of knowledge and a performance test adjusted for differences in the mean pretest and ability scores (40, p. 83). The criteria of gain correlated significantly with overall ratings of instructors by students (40, p. 84), but little relationship was found between gains and ratings of instructor effectiveness by supervisors or fellow instructors or between gains and the intelligence or the knowledge of subject matter of the instructor. Correlation between student achievement on a written test of knowledge and the rating of verbal facility
of the instructor was significant at the 5 per cent level. (40, p. 88)

The criterion dimension used in a study of the effectiveness of twelve instructors in the Naval Flight Training Program was student achievement of ability to fly an aircraft. Measurements of the ability were obtained from instructors other than the student's own instructor on flights at three stages in the training. Analysis of variance of the sixty-two students on three sets of flight grades revealed differences among instructors significant at the 1 per cent level. (68, p. 23)

Behaviors of pupils in the classroom The Teacher Characteristics Study, research of the Division of Teacher Education of the municipal colleges of the City of New York, and studies by Johnson have employed behaviors of pupils in the classroom as a dimension of the effects of teachers.

The Teacher Characteristics Study, initiated in 1948, was a six-year program of research sponsored by the American Council on Education and subsidized by The Grant Foundation. One of the purposes was the development of means of describing and measuring behaviors of pupils in the classroom. The Classroom Observation Record which was developed for use by observers trained in making analytical observations contained four dimensions of pupil behavior and eighteen of teacher behavior (51, p. 385). Since the majority of the dimensions
were the latter, further details regarding the development of the Classroom Observation Record and methods of assessing observed behaviors are given in the section of this chapter dealing with dimensions of teacher behavior. In studies of secondary school teachers Ryans found that the four pupil-behavior dimensions were substantially intercorrelated; therefore, they were used as a pattern of pupil behaviors (54, p. 149). The assessment for the pupil-behavior pattern consisted of the sum of the assessments of the four dimensions by an observer. Since each class was observed by more than one observer, the assessment by each observer was converted to standard score form and the mean of these standard scores was used. (54, p. 162)

Mean assessments of the pupil behavior pattern were significantly different for some groups of teachers. For example, Ryans found that among mathematics and science teachers the higher mean assessment of pupil behavior in classes of single teachers in comparison with those of married teachers was significant at the 1 per cent level (54, p. 168). When classes of men and women teachers of different grade levels and subject matter areas were compared, the mean assessment of the pupil behavior pattern was highest for women mathematics teachers and women teachers of grades five and six and was lowest for men teachers of English and mathematics (54, p. 166).
Pupil behaviors were employed as a criterion dimension in some of the studies carried out by the Division of Teacher Education of the municipal colleges of New York City. Medley and Mitzel reported the development of a technique for observing and recording classroom behaviors of pupils and teachers of the elementary grades. The Observation Schedule and Record (OScAR) was designed to be used by observers with a minimum amount of training. (38, p. 86) At any one observation the observer recorded the frequency of occurrence of behaviors included on the observation record during six periods of five minutes each (38, p. 88). Scoring was a clerical task carried out by someone other than the observer (38, pp. 86-87). The OScAR technique was used by six observers when each observed forty-nine elementary school teachers twice (38, p. 88). The fourteen keys into which items were grouped on a logical basis had reliabilities of .605 to .916 (38, p. 89). Medley and Mitzel stated: "The sizes of the reliability coefficients indicate that these teachers' classes differed widely with respect to what was going on in them." (38, p. 90). Some of the keys were composed entirely of pupil behaviors, some entirely of teacher behaviors, and others were combinations of the two. A factor analysis resulted in three orthogonal factors which accounted for most of the observed differences. These factors which were composed of behaviors of both pupils and teachers were:
... Emotional Climate, having to do with the relative amount of hostility observed; Verbal Emphasis, having to do with relative emphasis on verbal and traditional schoolroom activities; and Social Structure, having to do with the relative degree of pupil-initiated activity. (38, p. 91)

The reliabilities of the three factors estimated from an analysis of variance ranged from .770 to .903 (38, p. 90).

In addition to the OScAR technique the My Class inventory, a paper-and-pencil instrument used by pupils, was developed as a part of the New York City studies. The forty-seven items of this inventory formed four scales which were designed to measure different aspects of classroom behaviors or feelings. The halo scale attempted to measure feelings of pupils about the class or teacher; the disorder scale, one phase of the behaviors of pupils; and the two other scales, aspects of the behaviors of the teacher (36, p. 319). From a study involving the forty-nine elementary school teachers Medley and Klein reported:

It was shown that the Halo and the Disorder Scales were reliable measures of different things and that the other two scales measured a third function, but with a low reliability. (36, p. 319)

The scores on the disorder scale correlated significantly with the amount of disorderly behavior by pupils recorded by means of the OScAR technique (36, p. 319).

In another of the New York City studies Rabinowitz and Rosenbaum attempted to predict pupil-teacher rapport in the classrooms of the forty-nine elementary school teachers.
Three dimensions of behaviors of pupils and one of teachers from the Observation Schedule and Record were investigated. The three dimensions of behaviors of pupils did not correlate significantly with a measure of pupil-teacher rapport, the halo scale of the My Class inventory. The correlation between the other behavior dimension, manifest teacher hostility, and the halo scale was -.32, significant at the 5 percent level. (44, pp. 96-97)

Behaviors of pupils and teachers have been included as criterion dimensions of teacher effectiveness in studies by Johnson (29, 30). Two observers visited the classes of thirteen teachers in a high school of a southern city. Each teacher was observed six times for twenty-minute periods with ratings being made every five minutes on the following: nine characteristics of the teacher such as appearance, voice, and competency in the subject area; percentage of pupils who were attentive; and type of class control, that is, whether teacher-dominated, pupil-dominated, or teacher-led with balance of control between pupils and teacher. (29, pp. 332-333) The inter-observer reliability was .963 (29, p. 334). Criterion scores for the teachers ranged from 8.6 to 24.5 (29, p. 342) with a mean of 15.038 and a standard deviation of 4.646 (30, p. 684). When the observation instrument was used as the criterion measure in determining the effective-
ness of twenty-six elementary teachers, the mean score was 18.846 with a standard deviation of 7.732 (30, p. 687).

**Attitudes of pupils toward the teacher or the class conducted by the teacher**

Criterion measures for determining the attitudes of pupils toward the teacher or class conducted by the teacher have been developed and used by two groups of research workers (20, 21, 22, 23, 36). In each instance the criterion measure is a paper-and-pencil pupil-reaction inventory.

An instrument (43) developed in the Bureau of Educational Research, University of Minnesota was designed to measure more than the satisfactions of the pupils with the teacher. Grim et al. stated:

The pupils' attitudinal responses to the Inventory are considered manifestations of the pupils' personal adjustments to the social situation existing in the teacher's classroom. (23, p. 129)

The items were selected from remarks which pupils had made about their experiences in actual classes (21, p. 705). These items were organized into seven categories: quality of classroom government, clarity of objectives, cooperative group work, incentive quality, motivational intensity level, provision for psychological needs of pupils, and individualization of instruction (21, p. 706).

When the Pupil Reaction Inventory was administered to classes of seventy-three teachers in two urban high schools,
none of the items in the inventory discriminated "perfectly" between teachers rated good or poor by principals on the Teacher Characteristics List, an instrument discussed in the section of this chapter on measures of behaviors of teachers. The researchers believed that this finding did not invalidate the use of the average Pupil Reaction Inventory score of a class of pupils as an indicator of the effectiveness of the teacher. (22, p. 72) They found that average class scores on the Pupil Reaction Inventory were not related either to self-ratings of teacher behaviors or to ratings of behaviors of teachers by the principals (22, p. 84). Average class scores on the Pupil Reaction Inventory were found by analysis of variance to differentiate markedly among twenty-one student teachers (23, p. 131).

In another study Hoyt used only that portion of the Pupil Reaction Inventory that related to individualization of instruction. The sample was composed of eighth-grade teachers of English, mathematics, and social studies in two public junior high schools in Minnesota (26, p. 303). He found "... a definite tendency for increases in teacher knowledge of pupil characteristics to improve pupil attitudes towards teachers." (26, p. 309)

The halo scale of the My Class inventory (36) measures attitudes of pupils toward the teacher or class. Correlations
between this scale and other dimensions of teacher effectiveness were reported in the preceding section of this chapter.

**Amount of work performed by pupils** One study of the Harvard Teacher Education Research Project used the amount of required and self-initiated school work performed by pupils as a criterion dimension of teacher effectiveness (33, p. 82). Cogan theorized that the amount of pupil work can serve as "... an index of the teacher's competence in terms of his ability to motivate his pupils." (18, p. 324) The sample included teachers of English, arithmetic, and science in the eighth grade of schools in two communities with different socio-economic characteristics within the metropolitan Boston area. Data were secured from the thirty-three teachers, five principals, and 987 pupils. (16, p. 91) The amount of required and self-initiated school work that individual pupils reported in a questionnaire was significantly related to estimates made by the teachers of the amount of work done by the pupils (16, pp. 100, 103). The questionnaire also requested information regarding the behaviors of the teacher as viewed by the pupils. Cogan found a positive relationship between the amount of performed work reported by the pupils and two types of behaviors of teachers as perceived by the pupils (16, p. 103). The two types of teacher behaviors were described by Cogan as firstly, those which were integrative, affiliative, and nurturant and, secondly, those which
indicated level of demand, ability to communicate, and competence in classroom management (16, p. 90). The relationship between amount of pupil work and scores on a third scale of behaviors of the teacher was not clear (16, p. 103). This scale measured domineering, aggressive, and rejectant behaviors of the teacher (16, p. 90). On the basis of an analysis of variance for hierarchical classifications (17, p. 118), Cogan reported that the scales of amount of required and self-initiated school work and the scales of behaviors of teachers differentiated sharply among the teachers (17, p. 124).

Behaviors and characteristics of the teacher

The organization of this section of the review of research is somewhat different from the preceding one. Each of several sizable research projects which employed behaviors and characteristics of teachers as criterion dimensions is summarized. The summaries are followed by a brief presentation of the findings of a number of individual studies all but one of which secured data concerning behaviors or characteristics of the teacher by means of ratings.

Research of the Division of Teacher Education of the municipal colleges of New York City is described earlier in this chapter. The Observation Schedule and Record (38) and the My Class inventory (36), which were developed as a part
of the New York City studies, were designed to measure behaviors of pupils as well as teachers.

**Teacher characteristics study** Early research of the Teacher Characteristics Study included the development of methods of assessing observable classroom behaviors of teachers and pupils. The measurement of behaviors of pupils is described earlier. A factual description of behaviors was emphasized rather than a judgment of the effectiveness of behaviors (51, p. 379). The behaviors that were included in the Classroom Observation Record were secured from two sources; namely, literature related to the organization of human personality and traits hypothesized to be desirable for teachers (54, p. 114) and the results of studies using the critical incidents technique (28; 51, pp. 381-384; 54, pp. 117-124). Ryans pointed out the following characteristics of the Classroom Observation Record:

1. It provides for judgment of teacher behavior as based (a) on the immediate observation of the teacher's performance in the classroom and (b) on inferences regarding teacher behavior derived from pupil behavior; (2) it assumes that many teacher traits or qualities constitute dimensions of behavior, the opposite poles of which may be described with precise and meaningful terms referring to specific behaviors of the teacher . . . (4) it makes use of a detailed 'Glossary' which provides supplementary descriptions of the teacher behaviors under consideration, and, of course, demands thorough acquaintance with the instrument. (53, p. 698)

A seven-point scale was used in assessing each of the
twenty-two behavior dimensions on the Classroom Observation Record. Ryans reported that they found no evidence to indicate that any of a number of empirically derived weighting systems was more satisfactory than use of the values of one through seven originally employed by the observers in making the assessments. (49, p. 457)

In an effort to identify patterns of teacher behaviors six factors were extracted in a factor analysis of the assessments of behaviors of 249 secondary school teachers of mathematics, science, English, and social studies who were observed at different times by two or three observers. The factors tended to overlap and to be positively correlated. (54, pp. 137-139)

Only three of the six factors were used in further research of the Teacher Characteristics Study. Reasons given for using the three patterns of teacher behaviors were:

- • • practical experience as well as the empirical data argue that these are three of the principal areas involved in interpersonal relations and that theory of teacher behavior, and also teacher personnel procedures in practice, might do well to give them basic consideration. (54, p. 141)

A factor relating to appearance of the teacher was identified. Since the development of paper-and-pencil predictors of behaviors was a major goal of the study, this factor was dropped from further consideration because paper-and-pencil predictors would not be needed for such a characteristic. (54, p. 141) The three factors or patterns of teacher be-
haviors that were used are:

. . . Pattern X₀, reflecting understanding, friendliness, and responsiveness vs. aloofness and egocentrism on the part of the teacher, . . . Pattern Y₀, reflecting responsible, businesslike, systematic vs. evading, unplanned, slipshod teacher behavior, and . . . Pattern Z₀, reflecting stimulating, imaginative, original vs. dull, routine teacher behavior. (54, p. 141)

Each of the behavior patterns for secondary school teachers was composed of the following dimensions of the Classroom Observation Record. Pattern X₀ included the autocratic-democratic, aloof-responsive, restricted-understanding, harsh-kindly, and pessimistic-optimistic teacher behavior dimensions. Pattern Y₀ included evading-responsible and disorganized-systematic behavior dimensions. Pattern Z₀ included dull-stimulating and stereotyped-original dimensions. (54, p. 146a) The composition of the patterns of teacher behaviors was determined partly by the results of the factor analyses. Other bases for choices were:

In selecting the dimensions to represent a particular teacher behavior pattern preference was given, other things being equal, to dimensions (a) most highly correlated with the pattern it was hypothesized to comprise, (b) least highly correlated with patterns it was not hypothesized to be a principal contributor to, and (c) yielding, by comparison with other dimensions, relatively high reliability. (54, p. 146)

In preparation for using the Classroom Observation Record observers were given thorough initial training; periodic refresher training was employed throughout the period of observations. Estimates of inter-observer reliability and stabil-
ity of assessments by the same observer at different times were made upon the basis of results from a number of studies involving different groups of teachers. Inter-observer reliabilities ranged from .04 to .90 for pattern $X_0$, from -.12 to .99 for pattern $Y_0$, and from .06 to .89 for pattern $Z_0$. The median reliabilities ranged from .51 to .86. All of these reliabilities had been corrected for attenuation by the Spearman-Brown formula because assessments used in describing behaviors of teachers were a composite of the assessments of two or more observers. (54, p. 158s) In estimating the stability of assessments by individual observers, forty-eight elementary school teachers were observed twice by each of four observers with fourteen days elapsing between the first and second observations. The correlations between the first and second assessments ranged from .59 to .67 for pattern $X_0$, .71 to .76 for pattern $Y_0$, and .46 to .64 for pattern $Z_0$. (54, p. 160)

Ryan reported that composite assessments of the respective patterns of teacher and pupil behaviors differentiated among groups of teachers. For example, among 275 women teachers of the third and fourth grades they found a tendency for teachers with five to nine years of experience to have significantly higher criterion scores than teachers with lesser or greater amounts of experience (56, p. 77). Among a sample of secondary school teachers those who taught
social studies received higher mean assessments on pattern $X_o$ and those teaching mathematics on pattern $Y_o$ than the other groups of teachers (54, pp. 169-170).

As a result of a number of investigations in which the Classroom Observation Record was used Ryans concluded:

Pattern scores $X_o$, $Y_o$, and $Z_o$ derived from observers' assessments of teacher behaviors in the classroom appear to possess sufficient reliability to permit comparisons of teacher groups with respect to these patterns and, also, to justify their use for criterion purposes in an effort . . . to identify inventory responses which may be used to predict teacher classroom behavior. (54, p. 169)

The Classroom Observation Record was employed as a criterion measure when certain predictors of behaviors of teachers were investigated. An item analysis of a number of the predictors was carried out against the upper and lower twenty-seven percent of each of several groups of teachers on each of the behavior dimensions. (51, p. 393)

Two dimensions of teacher characteristics other than behaviors of teachers resulted from the Teacher Characteristics Study. These were attitudes and viewpoints of teachers. The two attitudinal factors were favorable attitude versus unfavorable attitude toward pupils and favorable attitude versus unfavorable attitude toward school personnel. The viewpoints which seemed to provide the most information about teacher characteristics were the acceptance versus the rejection of a subject-matter-centered view of the functions
Ryan found that educational viewpoints of teachers were not highly systematized or organized although the two clusters of viewpoints just mentioned were suggested by the data (55, p. 130). In his studies of attitudes of teachers Wandt used two different methods of securing criterion groups of teachers. Firstly, he obtained high and low groups of teachers on the basis of classroom assessments by trained observers of the overt behaviors of the teachers. Preliminary results indicated that the criterion groups differed significantly on several of the attitudes. (67, pp. 119-120) Secondly, he used the judgments of principals in securing two contrasting groups, teachers nominated by their principals as exceptionally above or exceptionally below average. Wandt reported that the two groups differed significantly on their attitudes toward pupils and administrators. (66, p. 421)

The determination of the relationships between effective teaching and the various patterns of behaviors, attitudes, and educational viewpoints of teachers was left to be answered by research in the future; however, the identification of such patterns of behaviors and characteristics and the development of means of measuring them contribute to their use as criterion dimensions of teacher effectiveness.

Cooperative study of the University of the State of New York For more than six years eighteen colleges of upstate
New York have worked with the State Education Department in the Cooperative Study to Predict Effectiveness in Secondary School Teaching (41, p. 5). The three instruments that were developed for the measurement of teacher effectiveness employed behaviors of teachers as the criterion dimensions. The critical incident technique was used in collecting descriptions of behaviors that characterized effective or ineffective teachers. The behaviors were selected for the instruments on the basis of the results of an intensive study of seventy-nine beginning teachers in sixteen high schools of upstate New York (41, p. 18). One of the measures was developed for use by pupils, one for supervisors such as principals, and one for observers from teacher education institutions (41, p. 78). The Kuder-Richardson coefficients of reliability of internal consistency were greater than .90 for each of the instruments (41, p. 79). The intercorrelations of the total scores of the instruments ranged from .36 to .48 for all teachers; from .46 to .61 for teachers of such subjects as language, English, mathematics, science, and social studies; and from .09 to .31 for teachers who taught commerce, physical education, art, guidance, agriculture, homemaking, and music (41, pp. 21, 79). The advisability of using the instruments for determining the effectiveness of the latter group of teachers was questioned because of the low correlations between measures when applied to them (41,
Inter-rater correlations for the instruments ranged from .55 for the instrument used by observers to .68 for the one used by pupils. Nelson et al. summarized their findings regarding the reliabilities of the measures and raters as follows:

Among the three measuring instruments, that for observers was shown to be the least reliable. The pupil and the supervisor instrument scores agreed with each other to a much greater extent than did the observer instrument scores with either of the other two. Further, the lowest interrater reliability was obtained for the observer scale. This indicated that the observers could not agree among themselves to the same extent as could pupils and supervisors. This should not be taken to mean that college observers are less capable of evaluating teachers than are pupils and supervisors. A much more plausible explanation is that the observation period was not long enough to enable the observer to make an accurate assessment of the teacher's behavior. (41, p. 80)

The distributions of the scores of 340 teachers on the three instruments were significantly different from normal. The fact that each distribution was negatively skewed (41, pp. 80-81) indicates that the instruments would be suitable for identifying poor teachers but not for discriminating among average or better teachers in terms of differing degrees of effectiveness (41, p. 82).

Investigations of the Bureau of Educational Research, University of Minnesota The teacher behavior dimensions employed in studies conducted by the Bureau of Educational Research, University of Minnesota were assessed by means of
the Teacher Characteristics List, an instrument containing seventy items that cover the same seven categories of behaviors included in the Pupil Reaction Inventory described in an earlier section of this chapter (20, p. 89). The items were developed by rationally visualizing the categories of behaviors from the viewpoint of a school principal. Seventy-three teachers in two urban high schools rated themselves and were rated by their principals on the Teacher Characteristics List. The distribution of their scores on the category of cooperative group work was positively skewed and indicated that the described behaviors were not typical of the teachers in the sample. (22, pp. 71-72) Other findings are described earlier in this chapter.

**Individual studies**  
A method was developed by Withall for assessing the social-emotional climate of a classroom by means of categorizing the statements made by the teacher. An observer recorded each statement or question under one of seven categories: learner-supportive; acceptant or clarifying; problem-structuring; not supportive in intent; directive; reproving, disapproving or disparaging; or teacher-supportive. (70, pp. 440-442) The reliability of the instrument was .90 when estimated by a split-half check on 271 statements obtained from one classroom session (70, p. 442). Statements of teachers were categorized as the same group of seventh-graders was observed throughout eighteen class ses-
sions taught by four teachers (70, p. 443). Withall found:

\[\ldots\] differences between the climates created by different teachers were quite appreciable. At the same time, though variations in the climate created by the same teacher from day to day are apparent, there appears to be some consistency in the kind of atmosphere the same teacher creates in her classroom over a period of time. (70, p. 451)

The method developed by Withall was modified by Medley and Mitzel in their development of the Observation Schedule and Record described earlier (38, p. 86).

In each of the investigations reviewed in the remainder of this chapter ratings of teachers by different groups were compared. Two or more of the following raters were employed in each study: principals or other supervisors, pupils, trained observers, colleagues of the teachers, and the participating teachers.

Principals and area homemaking supervisors rated thirty-three homemaking teachers on the behaviors of the teacher as a person, faculty member, guide to youth, and community member (42, pp. 24, 58-62). Four predictive measures were more successful in predicting the ratings by principals than those by supervisors (42, pp. 38-39). Supervisors did not receive the questionnaires until after they had completed their contacts with most of the teachers for that school year.

The following nine investigations compared ratings of teachers by pupils with ratings by others. In four studies
ratings by pupils did not correlate with any other ratings employed; in two they correlated positively with certain of the other ratings; and in three studies the correlation with the other ratings was positive but low.

In validation studies of the Minnesota Teacher Attitude Inventory, ratings of fourth, fifth, and sixth grade teachers by pupils, principals, and the investigator were employed. Leeds found that in studies conducted in 1946 and 1951:

. . . the ratings of the principals and those of the expert agree more closely with each other than either of these agrees with the reactions of the pupils. Such findings suggest possible differences in standards of evaluation by which adults and children judge the behavior of teachers. Support is also given the view that pupil rating is an important and unique contribution to an adequate evaluation of teacher behavior. (31, pp. 404-405)

At Lackland Air Force Base eighty-nine tactical instructors were rated for overall teaching effectiveness by basic trainees whom they were instructing, by fellow instructors, by supervisors, and by themselves. Borg and Hamilton reported that self-ratings and ratings by supervisors and fellow instructors were not significantly correlated with ratings by students (14, p. 115). In another study Borg correlated the ratings of the effectiveness of eighty-nine tactical instructors by their students, peers, and supervisors with scores on fifty-three subtests designed to measure interests and personality characteristics. He discovered that the ratings by the three groups were not closely related and that
each group placed emphasis upon different interests and personality characteristics. (13, p. 708)

Cogan found no consistent relationship between ratings of behaviors of teachers by principals and pupils (16, p. 100). Other findings are given earlier in this chapter since he also employed amount of work performed by pupils as a criterion dimension.

Ratings by students were reported by Webb and Nolan to be significantly correlated with self-ratings of effectiveness of instructors. Ratings by supervisors were the only group of ratings which were uncorrelated with any of the other obtained measures such as level of schooling, teaching experience, or the instructor's desire to teach. The subjects were fifty-one military instructors, and the criterion measure used was a teaching-proficiency rating scale. (69, pp. 44, 46)

Ratings which were employed by Singer were those of the superintendents or principals, the investigator, the participating teachers, five pupils of each teacher, and members of the Wisconsin State Department of Public Instruction. Audio-recordings of a class session were obtained at the time the investigator observed each teacher. Two staff members of the School of Education of the University of Wisconsin listened to the recordings and rated the teacher on teaching competence. Inter-rater reliability on ratings from record-
Correlations were found between ratings by pupils and supervisors and between supervisory ratings and ratings based on audio-recordings. (59, pp. 105-106)

The correlations that Anderson reported between ratings of teachers and measures of pupil gain or achievement are summarized in a preceding section. He found that the Pearson product moment correlations were significant at the 5 per cent level between ratings by principals and personnel from the Wisconsin State Department of Public Instruction, between self-ratings and ratings by principals, between ratings by pupils and colleagues of the teachers, and between ratings by colleagues and members of the State Department of Public Instruction (2, p. 61). Anderson concluded that the objectivity and reliability of rating scales needed to be improved before they could be used as criterion measures (2, p. 69).

In a study of 104 teachers in three secondary schools (46, p. 324) Reed found that the coefficients of reliability between ratings by pupils, administrators, and the participating teachers tended to be positive but insignificant. Teachers tended to be rated highest by pupils and lowest by administrators. Self-ratings were between the other two. (46, p. 325)

Symonds compared ratings of thirty-two teachers by the
principal and rankings of the teachers by seventh-, eighth-, and ninth-grade pupils in regard to seven questions about teachers (61, p. 290). The questions on which pupils ranked their teachers related to such matters as which teacher made the work most interesting and which understood the pupil best and liked him most (61, p. 289). Principals rated teachers on disciplinary control, relationships with pupils, success in terms of pupil achievement, and all-around excellence (61, p. 295). The reported correlations between rankings by pupils and the respective ratings by principals were:

... in the .60's for principal ratings of teacher discipline, in the .70's for teacher relationship with pupils and in the .40's for teacher ability to secure pupil achievement. (61, p. 310)

The last item does not refer to an actual measurement of pupil achievement but rather to a rating by the principal.

The criterion measure used by Johnson (29, 30) employed measures of behaviors of teachers and pupils. His investigations are described in a preceding section of this chapter.
CRITERION SELECTION

Prior to the selection of criteria to be used in any prediction study, the investigator needs to be aware of the function and sources of criteria and to consider a number of factors in judging the desirability of a criterion. In this chapter consideration is given to these aspects of criterion selection as well as to the bases for the selection of the criteria employed in the present investigation.

Function of Criteria in Prediction Research

In prediction research the criterion "... is the behavior the researcher attempts to predict and against which the relevance and usefulness of his predictors may be judged." (52, p. 34) The function of the criterion is to serve as a means of testing the validity of the predictors. Brogden and Taylor stated:

... the objective of criterion construction is subsidiary to that of selecting the most efficient battery of predictors. Prediction instruments are validated for the purpose of picking the best selection battery, assigning appropriate weight to each of its several components, and determining the effectiveness of the battery. The criterion achieves its sole function if it makes these objectives of validation possible. (15, p. 160)

Sources of Criteria

Criteria for determining the effectiveness of teachers originate from judgments of the purposes of education and of
what constitutes effective teaching. That criteria are judgmental in nature was pointed out by Brogden and Taylor:

The criterion . . . can be subjected to no wholly satisfactory empirical test of its adequacy. The criterion must, consequently, be logically justifiable as valid in its own right. (15, p. 160)

Three approaches to the making of judgments concerning criteria have been described by Ryan. He characterized them as arm-chair, rational, and empirical approaches.

The so-called arm-chair approach is highly subject to intentional and unintentional selection, or bias, in that it utilizes unanalyzed retrospective impressions, based upon non-systematic observation and often characterized by free-association, and therefore is likely to result in incomplete and contaminated descriptions of criteria. (52, p. 35)

The rational approach . . . is centered in systematic observation and the logical analysis of the criterion behavior and its products, leading to an inclusion (sic) and exclusive designation of the components of the standard or base to be employed in making comparisons. Rational analysis is systematic and it is comprehensive. It aims to result in a description based on the relevancy of possible criterion components, judged from the standpoint of belongingness and representative sampling. (52, p. 36)

The empirical approach to the criterion is a pragmatic one and consists essentially of 'trying out' hypothesized descriptions of the criterion, or dimensions composing the criterion, and accepting, modifying, or rejecting the criterion framework in light of experience . . . . (52, p. 36)

Arm-chair, rational, or empirical considerations help to form the judgments from which criteria result; however, these considerations may or may not be a part of an organized theory.

The importance of a theoretical framework for research on
teacher effectiveness has been stressed by a number of research workers including the Committee on Criteria of Teacher Effectiveness of the American Educational Research Association (9, p. 657), Guba and Getzels (24), Levin (32, p. 101), and Ryans (52, 57). The formulation of theories can provide guidance for the definition of criteria. Although criteria cannot be validated empirically, they can be based upon theory which has empirical as well as rational support.

General Considerations in the Selection of Criteria

The Committee on Criteria of Teacher Effectiveness suggested seven considerations in selecting criteria:

1. **Ultimacy or validity (relevance to ultimate social values)**
2. **Ease of definition and measurement**
3. **Ease of isolating as effects of teachers**
4. **Length of time required before criterion measures can become available**
5. **Amount of attrition in number of cases**
6. **Comparability (among different teachers, departments, schools)**
7. **Cooperation in getting data from persons involved**

The first consideration, ultimacy or validity, refers to the closeness of a criterion to the ultimate objectives of the teacher. The Criteria Committee stated that criteria might be thought of "... as ranging along a continuum of 'ultimacy-proximacy.'" (8, p. 243) They viewed this continuum as divided into two parts; effects of teachers being viewed as ranging along a continuum of ultimacy, behaviors
and characteristics of teachers, as ranging along a continuum of proximacy (8, p. 244). When the committee listed some characteristics of teachers in order of decreasing ultimacy-proximacy, the first four on the list were the effect of the teacher on:

- pupils' achievement and success in life
- pupils' achievement in subsequent schooling
- pupils' achievement of current educational objectives
- pupils' satisfaction with the teacher (8, p. 243)

Justification for employing any but an ultimate criterion was given by the committee as follows:

Below the most ultimate criterion, any criterion must depend on the degree to which it can be considered related, relevant, or proximate to the ultimate criterion . . . . We may think, therefore, of a kind of regression from the ultimate criterion to lesser and lesser criteria, each depending for its standing on its relationship to criteria closer to the top. (8, p. 244)

Ease of definition and measurement may affect the adequacy of a criterion. Brogden and Taylor stated that the problem of criterion deficiency most often occurs in the process of defining the criterion or determining the dimensions to be measured (15, p. 162). They criticized the practice of permitting the availability of criterion measures to be the first determining factor in defining the criterion (15, p. 162). Criterion deficiency can also result from the use of only one type of criterion measure (15, p. 166).

The third consideration listed by the Criteria Committee, ease of isolating effects of teachers, relates to the problem
of criterion contamination. Influences other than those of the teacher can sometimes be controlled by means of the design of the research. The Committee pointed out that isolating the effects of a single teacher presents difficulties because the measurement of the effect may be:

... (1) contaminated, by carry-over effects of the influences of previous teachers, and (2) incomplete, because some of the present teacher's influence has yet to become observable. (9, p. 653)

The length of time required before criterion measures can become available may affect the feasibility of using a criterion, may be a factor in controlling criterion contamination, and may affect the amount of attrition in the number of cases. This consideration may also be a factor in determining who should administer the criterion measures and the type of measures that can be employed.

The amount of attrition in number of cases is important because of its possible effect on sampling error. The Criteria Committee explained:

Attrition of cases in a study may be a function of the lapse of time before criterion measures are obtainable, or it may be a function of the subjects' cooperativeness in furnishing personal data. (9, p. 650)

Consideration of comparability among teachers, departments, and schools is a factor in preventing criterion contamination. What Brogden and Taylor referred to as opportunity bias may result if the possibilities for exhibiting
the behaviors being studied are not comparable for the different teachers, departments, and schools (15, p. 169). Opportunity bias that is correlated with predictors will affect the tests of validity of the predictors. Brogden and Taylor stated:

While the possibility that opportunity bias may be test-correlated should be thoroughly checked, it is probably generally true that the extent of the correlation will frequently be found to be negligible. Generally . . . opportunity bias will be test free and will attenuate or lower all validity coefficients but will not seriously distort their relative magnitude. (15, p. 170)

The last consideration pointed out by the Committee was cooperation in getting data from the persons involved. Factors which could be expected to influence cooperation include the type of data requested, the professional relationships between the investigator and the research subjects, the kinds and amount of previous experience that the subjects have had with research, and the assurances that the subjects receive regarding the way that data will be used.

Considerations in the Selection of the Criteria Employed in This Study

On the basis of the seven considerations proposed by the Criteria Committee (9, pp. 648, 650), the following four criteria were selected as most suitable for trial in this investigation: growth of pupils in achieving educational objectives, behaviors of pupils in the classroom, attitudes of
pupils toward the teacher or class conducted by the teacher, and classroom behaviors of the teacher. Each of these criteria is discussed from the standpoint of the factors considered in its selection. Problems associated with the use of each criterion are also included.

Growth of pupils in achieving educational objectives

Many research workers agree that the effect of the teacher on achievement of educational objectives by pupils is an ultimate criterion of teacher effectiveness (8, p. 243; 1, p. 274; 65, p. 178; 34, p. 221; 45, p. 216). Because of difficulties involved in measuring the achievement of educational objectives by pupils, relatively few investigations have employed this criterion dimension. The Criteria Committee recommended that efforts be made to overcome the difficulties of measurement and that the use of this ultimate criterion be increased (8, p. 258).

Problems related to the use of the criterion of effect of the teacher on achievement of pupils stem from the need for more specific definitions of measurable objectives, the diversity of educational objectives, and lack of measures for determining achievement of many of the objectives. Much remains to be done in the way of defining educational goals in terms of behaviors that can be measured. Bloom and others have contributed to the clarification and categorization of
objectives in the cognitive domain (12). A comparable taxonomy of affective or motor-skill objectives is not yet available.

If achievement of pupils is to be used as a criterion of teacher effectiveness, achievement of the most important goals should be included. Careful consideration needs to be given to the relative importance of various educational objectives of teachers in different subject matter areas at different grade levels working with various groups of pupils so that the criterion measures will embrace the major types of pupil growth desired.

Two types of educational objectives, cognitive and affective, were selected from the Iowa homemaking curriculum guides to be included as criterion dimensions in the present study. The objective of a cognitive type is ability to apply homemaking generalizations in solving problems. Those of an affective type are attitudes toward children and attitudes toward decision making in families. Motor skills, a third type of objective, were not included because the amount of time requested of teachers and pupils in securing criterion data needed to be limited, and the investigator believes that achievement of motor skills by pupils is less important as a criterion of the effectiveness of homemaking teachers than achievement of the cognitive and affective objectives selected.
Since the effectiveness of teachers in facilitating the achievement of pupils is no longer looked upon as a unitary trait, no single index of pupil achievement can be expected to provide an adequate description of competence in teaching. The Criteria Committee recommended that:

... the different kinds of effects should be kept separate rather than combined into a single complex index. Lumping many effects together obscures differentials in achievement that may be highly significant to the understanding of the teaching-learning process. (9, p. 255)

The importance of the multidimensional approach to the measurement of the effect of the teacher on growth of pupils was expressed by Mitzel and Gross:

Although the degrees of effectiveness among teachers have long been realized, many educators still seem to assume that the teacher who stimulates the greatest pupil growth in one basic skill will stimulate the greatest growth in other specific skills as well as in problem-solving, social adjustment, and all other desirable outcomes. Moreover, they also seem to assume that the effective teacher is equally effective with all children. Until these assumptions are supported by empirical evidence, it is perhaps more reasonable to assume that the effectiveness of teachers may vary from goal to goal and, therefore, that research be conducted on pupils' achievement of a wide variety of different goals. (39, p. 206)

The adequacy of the measurement of pupil achievement is dependent upon the criterion measures used. Two characteristics required of these measures are validity and reliability (52, p. 45). The types of achievement employed as criterion dimensions in the present investigation were of necessity
limited to those types of objectives for which valid and reliable criterion measures were available or could be developed. In this study the validity of the criterion measures is assumed. The reliabilities are reported elsewhere.

The need for isolating the effects of a teacher on the achievement of pupils presents a number of problems. Variables intervening between behaviors of the teacher and achievement of pupils need to be considered in planning the research. According to the Criteria Committee:

Psychological theory no longer permits a disregard of the significance of such variables as the personality structures of pupils, their social adjustment, their intelligence, their home-determined attitudes and values, and the relation of these to similar qualities in the teacher. (9, p. 644)

Various investigators have pointed out such intervening variables as characteristics of schools and groups of pupils (39, p. 211); influences of parents, relatives, friends, self, and books (45, p. 217); and the following:

... (a) the student's abilities and aptitudes, (b) his motivation (general, and also with respect to specific kinds of learning), and (c) the methods and techniques by way of which the learnings are presented or by which the student approaches them. (51, p. 377)

Rabinowitz and Travers outlined a number of problems that result from the complexity of effects of teachers upon pupils. One problem relates to the effect of the situation in which behavior occurs. Another problem deals with the interrela-
tionships between teacher and pupils.

As the Gestalt psychologists have so often reminded us, behavior can be understood only insofar as it is seen in some setting. The 'same' behaviors in different contexts have different meanings. A teacher employing 'identical' techniques in quite different classes is not likely to obtain 'identical' results (pupil responses). The 'same' classroom practices employed by different teachers will probably produce different pupil behavior. The entire matter of context presents a thorny research problem. For the most part we have few methods with which to describe and assess the setting in which events occur. Research has always been oriented toward the study of the figure and not the ground. (45, p. 217)

Ordinarily we think of the pupil behavior as influenced by the teacher. We seldom consider the behavior of the teacher as a function of the behavior of the pupils. Yet such relationships seem likely. In actual classroom practice a kind of reciprocity is encountered which makes it unprofitable to search for simple functional equations. The facts of school life suggest that the interaction of teacher and pupil is complex and reciprocal, not simple and unilateral. (45, p. 217)

Other considerations in isolating the influence of an individual teacher were discussed in the preceding section.

Progress of pupils toward objectives for which the teacher has major responsibility can be assumed to be more nearly an effect of that teacher than would be true for objectives for which many teachers share the responsibility. The objectives employed as criterion dimensions in the present study are those which Iowa homemaking teachers are expected to emphasize in Homemaking I and Homemaking II classes and which are not stressed to the same extent outside homemaking
The present investigation was planned in such a way that the relationships between achievement of educational objectives by pupils during a term of instruction and such factors as the following could be studied: level of intelligence of pupils, size of class, level of homemaking, and the teacher. Growth in achievement during a period of instruction by the homemaking teacher was used rather than merely a measure of the final achievement level. It is assumed that factors other than those included in this study which affect achievement of pupils are randomly distributed among the teachers.

Another factor affecting the measurement of growth of pupils is the length of time required before criterion measures can become available. Rabinowitz and Travers questioned the defensibility of assessment of pupil growth immediately before and after a period of instruction by the teacher except on practical grounds (45, p. 217). In support of the measurement of current achievement of objectives the Criteria Committee stated:

Conceivably, the changes may be more significant as criteria long after formal schooling has ceased than at the time of the teacher's performance. Realistically, it seem necessary to assume that changes at the time the pupil is under the teacher's influence are sufficient to serve at least as a first approximation in evaluating teacher effectiveness. (9, p. 642)

The assumption is made in the present investigation that the
measurement of growth in achievement of homemaking pupils over a period of approximately one school year provides evidence of the effectiveness of the teachers.

Both the length of time required for securing criterion data and the cooperativeness of the homemaking teachers affected the amount of attrition in the number of teachers and pupils from whom data were secured in the present study. Contracts for homemaking teachers cover one school year; however, there was some loss of teachers during the school year as reported in the Method of Procedure. Most high school homemaking classes are full-year courses in Iowa schools. In all of the classes included in the present investigation the number of pupils remaining throughout the year was large enough to justify the use of information about the class as a group. The amount of time required of the teachers and pupils was kept to a minimum in an effort to encourage cooperation. The teachers were also assured that the results would be reported in such a way that the identity of the teachers could not be detected. The measurement of pupil achievement seemed to be accepted by the participating teachers as a justifiable part of educational research. Throughout the study there was no evidence of deliberate lack of cooperation by the teachers. Due to misinterpretation of instructions one teacher and the Homemaking II
classes of another teacher had to be eliminated from the study. With these exceptions teachers were thorough in providing requested information. Very few of the hundreds of response sheets of pupils had to be eliminated because of their failure to follow instructions.

The criterion measures used in the present study are assumed to be equally appropriate for all of the homemaking teachers in the sample. The educational objectives upon which the measures are based were stressed during the undergraduate preparation of the teachers and in curriculum materials used by Iowa homemaking teachers; therefore, it seems reasonable to believe that the objectives selected as criterion dimensions were the objectives of the teachers in the study.

Behaviors of pupils in the classroom

It is assumed that behaviors of pupils in the classroom are in part an effect of the teacher. This criterion approaches ultimacy to the extent that such behaviors affect the achievement of educational objectives by the pupils. On the basis of logic the behaviors included in the present study are believed to be closely related to the growth of pupils.

The methods of assessing behaviors of pupils described later satisfactorily met the conditions implied in the con-
siderations listed by the Criteria Committee (9, pp. 648, 650). The assumption is made that the behaviors defined and assessed were equally applicable to the classes of different teachers. Factors other than the teacher affecting behaviors of pupils are assumed to be randomly distributed among the teachers. Teachers were cooperative in permitting observation of their classes. One problem in the use of this criterion is that the time and money involved in the observation of behaviors in the classroom limits the number of teachers whose classes can be observed and the number of observations of each class.

**Attitudes of pupils toward the teacher or class conducted by the teacher**

The ultimacy of the criterion of attitudes of pupils toward the teacher or toward the class conducted by the teacher depends upon the degree to which this criterion influences the achievement of pupils. Rational support for the belief that such attitudes of pupils have an effect upon learning by the pupils has been provided by a number of research workers. Grim and Hoyt stated:

We think of the psychological state of the learner as a cluster of intervening variables (such as attitudes, feelings, and emotions) between the instructional materials as stimulus and the teacher-approved behavior as response. No learning of a desirable nature will take place without the learner being motivated to wrestle actively with the material and to have made it a meaningful
portion of his own experience. An important task of the teacher is to initiate this state of mild tension in the individual pupils. Such a tension state is an aspect of interpersonal relations we are attempting to evaluate. (20, p. 86)

One aspect of teaching competence too promising to be long ignored is the consideration of the educational development of each child within the frame of reference of his own self; that is, his psychological world as he, uniquely, perceives it as distinguished from the psychological worlds of the other students and the teacher in the classroom. Our approach of 'getting within the individual' in order to see just how he autistically views the world is the antithesis of taking at face value the belief that stimulus situations are much the same for all pupils. (20, p. 87)

Some of the assumptions of a motivational theory described by Haggard are consistent with the belief that attitudes of pupils toward the teacher will affect achievement of pupils.

... although the individual is responsive to environmental stimuli, his behavior (including learning) is determined in large measure by other factors, such as his prior experiences, how he perceives the situation, and his current interests and motivations ... On the perceptual side, it is assumed that the individual learns to view his world in characteristic ways which determine in part what he sees and its meaning to him which in turn influence how he will relate to and deal with what he sees ... Also, these (ways of seeing) change with time, so that any given stimulus does not always stay the same; as the individual comes to see it differently, it ceases to be the same stimulus - even though its physical properties have not changed ... It is important to note in such cases that the child's seeing his teacher differently will influence what and how well he will learn other things in her class. (25, p. 153)

It seems logical that a close relationship exists between attitudes of pupils toward the teacher and the achievement of educational objectives by the pupils.
The availability of an instrument designed to measure attitudes of pupils toward their teacher made the inclusion of this criterion feasible. Evidence to support the belief that the attitudes measured by the instrument are an effect of the individual teacher was reported by Medley and Klein:

It seems reasonable that a 'likeable' teacher will be liked by most of his pupils and that even different random samples of pupils will rate likeable teachers higher than disagreeable teachers on all desirable traits. The high correlations among traits found by Grim, Hoyt, and Peitersen, even after their attempt to exclude the halo effect, would seem to confirm this conclusion. And there is further confirmation in the factor-analysis results, which show that one factor accounts for 81 per cent of the communality among the five traits. (36, p. 316)

The decision to have the investigator administer the criterion measure limited the number of homemaking teachers from whose classes these data were obtained. It is believed that pupils of different homemaking teachers defined the items in the measure similarly. In order to secure the cooperation of the pupils anonymity of responses was maintained.

Behaviors of teachers in the classroom

The Criteria Committee classified behaviors of teachers in the classroom as a proximate criterion (8, p. 244). Such a criterion is acceptable for determining the effectiveness of teachers in so far as its relationship to achievement of educational objectives by pupils can be demonstrated (8, p. 258).
The need for objectivity in recording and assessing behaviors of teachers was pointed out by the Criteria Committee (2, p. 259; 9, p. 651). The methods developed by Medley and Mitzel (38) and in the Teacher Characteristics Study (51) are described in another chapter. Some of the considerations in the assessment of behaviors of teachers by trained observers were expressed by Ryans:

... when the direct measurement of criterion behavior is undertaken the obtained data are more likely to be relevant to the extent: (a) the dimensions of the criterion behavior have been specified and unequivocally defined in operational terms; (b) the observer recognizes the behaviors he is supposed to be looking for and makes assessments on those, and only those, characteristics; (c) the observer focuses his attention on specific actions and carefully avoids contamination of assessment by 'general impressions,' behaviors that stand out prominently or unusual behaviors that obscure typical behavior, inferences about the meaning of behaviors, and inferences about what the behavior might be like in unobserved situations; (d) the observations are conducted with proper attention to time sampling - the observations are not too limited to provide for opportunity for occurrence of the criterion behavior; (e) the observer makes his assessments during or immediately following observation; (f) the observer makes separate assessments of each specified component of the criterion behavior considered independently; (g) the 'naturalness' of the situation in which the criterion behavior occurs is preserved; (h) the observer is capable of recognizing the influence of, and setting aside, personal biases relative to individuals and/or behaviors under observation; (i) the observer remains aware of, and conscientiously seeks to avoid, various rating biases such as the so-called central-tendency error, the leniency error, and others; (j) replication of observation and assessment by independent, though similarly trained observers is provided for. (52, pp. 51-52)

Ryans has also stated that the measurement of behaviors of
teachers involves two basic assumptions; namely, "... that teacher behavior is a function of certain environmental influences and characteristics of the individual teacher," (57, p. 468) and "... that teacher behavior is observable; that its manifestations are of a tangible nature and may be identified objectively ..." (57, p. 471) These assumptions are basic to the method of assessing criterion behaviors that was adapted for use in the present investigation.

A number of other factors influenced the selection of the criterion of behaviors of teachers. It is believed that observers can be trained to identify and assess behaviors of teachers reliably. In making observations the expense in time and money meant that the Homemaking I and Homemaking II classes of only a small sample of teachers were observed two or three times. The behavior dimensions included in the criterion measure are assumed to be equally applicable to all of the teachers. The definition of the behavior dimensions was complicated by the fact that homemaking teachers include a variety of experiences in their classes such as demonstration, laboratories, class discussions, and planning by small groups. The role of the teacher may vary with the type of activity underway in the classroom. The teachers were cooperative in permitting observation of their classes. They were informed that the observer was interested in recording what happened during the class session.
Because the purpose of the present study was to explore the use of criteria for determining the effectiveness of homemaking teachers, the trial of a variety of criteria took precedence over planning for precision of design. Procedures that were used in obtaining the sample, selecting the criteria, selecting and preparing means of gathering data, and collecting and analyzing data are discussed in this section.

Obtainment of Sample

The Home Economics Education Department of the Iowa State College is interested in securing criteria for determining the effectiveness of its graduates who enter teaching. Although the population for which such criteria are needed consists of all persons who are graduated from the Iowa State College with a bachelor of science degree and a major in home economics education and who teach homemaking in secondary schools, further limitations were set upon the population from which a sample was drawn for this study. Only those were included who were graduated during June, July, and August, 1957; who, according to records of the Teacher Placement Office, had accepted positions by July 9, 1957, to teach homemaking in Iowa secondary schools; and who had no previous teaching experience. There is no reason to believe that
persons graduating during this time and teaching in Iowa are
different from those graduating over a different time span
or teaching in other states. It is assumed that a criterion
of teacher effectiveness which discriminates among teachers
of this group will function in a comparable manner when used
for the larger population.

A list of graduates meeting the qualifications was com­
piled from records of the Teacher Placement Office. Then a
random sample of fifty per cent of the forty-three teachers
was drawn. In addition all of the teachers employed in
schools within a radius of about fifty miles of Ames were
included so that observers, who lived in Ames, could observe
classes of a maximum number of teachers within the time
available. Later two of the forty-three teachers were added
because they were teaching in the same school system with a
teacher who had been drawn in the sample. The entire sample
was composed of thirty teachers including twenty-two drawn
at random, six additional teachers in schools near Ames, and
two from the same school system as another teacher in the
sample.

A question may arise as to why a non-random sample was
used in this study. Since the purpose was to try out cri­
teria rather than to make inferences concerning the charac­
teristics of the population, a random sample was not essen­
tial.
Before the teachers were contacted, the head of the Department of Home Economics Education, Iowa State College, wrote to the superintendents of the schools for permission to ask their homemaking teachers to participate in the study. A copy of the letter and postal card that was enclosed are shown in Appendix A. All either granted permission for the teachers to be contacted or referred the request to another person who gave consent.

After permission had been granted, the head of the Department wrote to each of the teachers briefly describing the research plans and asking for cooperation. Letters were mailed two or three weeks prior to the opening dates of the school terms. Appendix A includes a copy of the letter and enclosed postal card. Affirmative replies were received from all but one of the teachers; however, it was necessary to contact two of them by telephone on the opening date of school since their responses had not been received at that time.

Prior to the end of the 1957-58 school year the sample had decreased to twenty-six teachers due to the elimination of four of the randomly selected teachers. Investigation revealed that the teacher who did not reply to the August letter did not teach even though she had accepted a teaching position earlier in the summer. Two teachers resigned several months
before the end of the school year, and another had to be withdrawn from the study because she mistakenly gave Homemaking I pretests to her Homemaking II classes.

Selection and Preparation of Means of Gathering Data

Criterion data regarding growth of pupils in achieving educational objectives, attitudes of pupils toward the teacher or class conducted by the teacher, and behaviors of pupils and teachers in the classroom were needed. In order to collect the desired data it was necessary to select and, in some instances, to adapt criterion measures.

Measures of growth of pupils in achieving educational objectives

Since two types of educational objectives were selected as criterion dimensions, tests designed to measure achievement of each type of objective were chosen. The tests of ability to apply generalizations were prepared for the present investigation although most of the test items were revisions of items developed by others. The attitude tests were used in the form in which they had been prepared by their authors.

Tests measuring ability to apply generalizations in solving homemaking problems Test items came from two sources, evaluation materials developed for use by Iowa teachers and items prepared especially for this study. A
random sample of the former was drawn from each of the seven sets of items related to child development, family relationships, housing, and clothing listed in Appendix B. Since the teachers had access to these, each selected item was disguised by revising the wording and changing the illustrative materials. The fact that test items in foods were not then available necessitated the development of items in this area. Two curriculum experts approved these items from the standpoint of consistency with Iowa curriculum proposals; three experts in food and nutrition at the Iowa State College approved the key.

The tests, the description of illustrative materials that were displayed on bulletin boards when the tests were given, and answer sheets containing keys for scoring are shown in Appendix C. Scores were determined by summing the number of correct responses. The Homemaking I test is comprised of sub-tests I-A and I-B; the Homemaking II test includes sub-tests II-C and II-E.

The length of the tests was planned so that pupils could complete them and respond to an attitude test in two fifty-five-minute class periods. All but one teacher had reported class periods of at least fifty-five minutes. The experience of Tennison (62, p. 22) aided in estimating the number of items which pupils would be able to complete in the allotted time. An examination of the tests taken in September revealed
that only about six per cent of the Homemaking I pupils and
two per cent of the Homemaking II pupils did not complete the
tests. Because such low percentages of the pupils failed to
finish, the entire tests were scored and used in the investi-
gation.

The coefficient of internal consistency of each test was
computed by the split-half method and corrected for attenua-
tion by means of the Spearman-Brown formula. Based on re-
sponses of 131 pupils which were scored for odd and for even
items, the coefficient of reliability of the Homemaking I
test was .78. A coefficient of reliability of .77 was se-
cured for the Homemaking II test using the scores for odd and
for even items of 105 pupils. Since the possible scores on
odd and even items were not equal for either of the two
tests, the respective coefficients of reliability may under-
estimate the reliability. These reliabilities are satisfac-
tory for group testing.

Attitude tests A search for attitude tests related
to objectives for Homemaking I and Homemaking II classes re-
vealed a dearth of such tests; however, two were selected for
trial in this investigation. Form B of Bringing Up Children,
an Inventory of Attitudes (47) was chosen for Homemaking I;
the high school form of Scale II of Scales for Measuring
Attitudes toward Participation in Decisions about Uses of
Family Income (3, pp. 202-204), for Homemaking II.
In this investigation *Bringing Up Children* (47) was accepted as a test of attitudes. Stedman reported that the instrument was designed to measure "... knowledge and attitudes which parents and others possess toward child behavior in certain everyday life situations." (60, p. 12)

A coefficient of internal consistency of .88 was reported for the trial instrument from which this attitude inventory was developed (60, p. 24). The reliability between the two forty-five-item forms of the inventory was given as .87 (60, p. 47), but the coefficient of internal consistency of the forty-five-item form used in the present study was not reported by Remmers and Stedman (48).

There was a question as to whether this test would be sensitive enough to show changes in attitudes of pupils during enrollment in Homemaking I. Stedman found no significant difference between the scores of high school seniors who had taken at least one course in homemaking or who had been a member of a child study group and those who had not (60, p. 33). In a study of 1,600 high school pupils, however, there were significant differences among the scores of pupils of different grade levels (48, p. 7). This indicated that the test might detect changes in attitude during a span of one school year, approximately the span of time covered by this study. The test was believed to be valid for use with pupils of graduates of the Iowa State College since the key is not
in contradiction with generalizations taught in undergraduate child development courses at this college.

To assist Homemaking I pupils in comprehending the meaning of some of the words used in *Bringing Up Children* (47) the glossary shown in Appendix C was prepared. The words defined in the glossary are those which Thorndike and Lorge (63) do not include in the vocabulary that eighth-grade pupils should have learned.

A copy of the attitude scale, Test II-D, which was chosen for Homemaking II classes and the response sheet containing the key are shown in Appendix C. At the time that this scale was used in the present investigation, final editing had not been completed; therefore, Test II-D is slightly different from the final form of Scale II, *Who Should Make Decisions Concerning the Purchase of Durable Goods?* (3, pp. 202-204) Babcock developed four scales for high school pupils, but Scale II was chosen because it was believed that this area of decision making would be more directly related to the objectives for Homemaking II classes. Other scales concern family decision making in regard to the use of funds for living expenditures, investments and savings, and ways of handling money (3, pp. 191-213).

The reliability of Test II-D was estimated because it is somewhat different from the final form of the scale by
Babcock (3, pp. 202-204). Responses of 113 Homemaking II pupils were scored for odd and for even items. A coefficient of internal consistency of .84 was secured after correction for attenuation by means of the Spearman-Brown formula. This reliability is satisfactory for group testing.

Inventory of attitudes of pupils toward the teacher

A criterion measure was needed to describe quantitatively the attitudes of pupils toward the teacher. The Pupil Reaction Inventory (43) is a paper-and-pencil instrument designed to achieve this purpose. Permission* was secured to adapt the Pupil Reaction Inventory (43) for use in the present investigation.

Due to the fact that pupils need about one hour to respond to the 215 items in Form D of the Pupil Reaction Inventory (43) and a maximum of twenty minutes was available for pupils to give their responses, only part of the instrument was used. A factor analysis of intercorrelations** of scores of 237 seventh graders on the seven scales of the Pupil Reaction Inventory was performed.

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* Cyril J. Hoyt, University of Minnesota, Minneapolis, Minnesota. Permission to use or modify pupil reaction inventory. Private communication. 1957.

** Cyril J. Hoyt, University of Minnesota, Minneapolis, Minnesota. Intercorrelations of pupil reaction inventory scales. Private communication. 1958.
Reaction Inventory (43) revealed one common factor among the scales; therefore, Scale Six, which had the highest correlations with the other scales, was chosen. This Scale includes twenty-six items and is designed to measure provision for psychological needs of pupils. In describing the scale Grim and Hoyt stated:

An appraisal is here attempted of the sensitivity of the teacher to the psychological needs of the students. A teacher who extends emotional assurance to pupils in challenging learning situations, who recognizes and provides for children's needs for acceptance, for success, for sharing and participation - their needs for freedom from pervading fears - would obtain a high score in this area. (20, p. 88)

The reliability of Scale Six is estimated to be at least .82 on the basis of computations which were a part of the factor analysis.

The form of Scale Six of the Pupil Reaction Inventory and the response sheet that were employed in this investigation are shown in Appendix D. The score on Scale Six is the total number of items with which the pupil agrees.

Measures of behaviors of pupils and teachers in the classroom

One criterion measure was prepared for securing data related to two of the criteria, behaviors of pupils and teachers in the classroom. Permission was secured to adapt the Classroom Observation Record (51, p. 385) and Glossary (50) that
were employed in the Teacher Characteristics Study* and that are described in an earlier chapter. The adaptation of the measure of behaviors of pupils and teachers involved the inclusion of behaviors that were consistent with the beliefs of the staff of the Home Economics Education Department of the Iowa State College regarding the effectiveness of homemaking teachers, the deletion of any behaviors which would not be expected to occur in homemaking classes, the utilization of terminology that would be meaningful to the observers, and the minimization of overlapping of the behavior dimensions. In making the revisions conferences were held with staff members of the Home Economics Education Department; literature related to the effectiveness of homemaking teachers was reviewed; and revised forms of the measure were tried out in homemaking classes not included in the investigation. The resultant criterion measure is the Observation Record for Homemaking Classes and the accompanying Glossary for the Observation Record shown in Appendix E.

Revisions that were made in the criterion measure were of three types, changing the name of a behavior dimension, adding or deleting a dimension, and revising the definitions of the dimensions. Each behavior dimension is designated by

*David G. Ryans, University of California, Los Angeles, California. Permission to use observation record and glossary. Private communication. 1957.
two words representing the opposite extremes of that category of behaviors. The name of one behavior dimension was changed from dull-stimulating to dull-interesting because of changes in the definition of the dimension. The unreceptive-receptive dimension was added in order to include a group of behaviors of teachers believed to be related to the effectiveness of homemaking teachers but not included in the original Classroom Observation Record (51, p. 385). This dimension refers to receptiveness on the part of the teacher to suggestions given in Iowa curriculum guides and evaluation materials. The stereotyped-original dimension was deleted for two reasons. Firstly, preliminary observations indicated that observers would have difficulty in assessing the originality of methods of instruction used by beginning homemaking teachers since most methods being used were suggested in the Iowa curriculum guides. Secondly, most of the behaviors originally included in this dimension were shifted to other dimensions to which they related. Most of the behavior descriptions of the dimensions were revised so as to make them more clearly applicable to homemaking pupils and teachers.

Preparation for gathering data concerning the behaviors of pupils and teachers in the classroom also entailed the training of two observers to use the Observation Record for Homemaking Classes. Since the observers were experienced in
the teaching of homemaking and in the supervision of homemaking teachers, the emphasis in the training for assessment of observed behaviors was on comprehension of the meaning of behavior descriptions in the Glossary for the Observation Record and ability to categorize behaviors observed. Prior to any attempts to assess behaviors the definitions of the dimensions were discussed in conferences of the two observers.

During the period from November 11, 1957, through January 28, 1958, observations were made by the observers for training purposes in classes of seven teachers not included in the sample of twenty-six teachers participating in the study. The observers went together to ten homemaking classes, made individual assessments of the behavior dimensions included in the Observation Record, and then discussed differences between the two sets of assessments in an effort to improve the reliability of their assessments. The classes of two teachers were observed at different times by the observers followed by conferences between the observers to discuss their assessments.

To locate those behavior dimensions which were being interpreted differently, a record was made of the number of times that the two observers differed two or more points in assessing dimensions on the seven-point scale. Those dimensions on which there was lack of agreement were thoroughly discussed. Conferences between the observers were continued.
throughout the span of time in which classes of teachers in the sample were being observed in an attempt to increase reliability of assessments.

During the training period the inter-observer product moment correlation coefficients of the assessments of behaviors of pupils and teachers in ten classes that were observed at the same time by the observers ranged from .03 to .82 with a mean correlation of .53. The observation that resulted in the low correlation proved to be profitable in helping to clarify some misunderstandings regarding definitions of behavior dimensions. The correlations between the assessments made by the observers of two classes that were visited at different times were .54 and .60. Although it was recognized that further training to increase the reliability of the assessment of behaviors would have been desirable, it was believed that the inter-observer reliability was sufficiently high to begin the observations to be included in the present investigation.

Collection of Data

Data were secured from each of the criterion measures that were employed. Supplementary information about the classes was secured by mail from the teachers and included a list of the pupils in each Homemaking I and Homemaking II class, the grade level of each pupil, the number of years of
homemaking that each pupil had taken in high school prior to 1957-58, and information concerning the intelligence quotient of each pupil according to records available in the respective schools.

Administration of tests of attitudes and ability to apply generalizations

In order to measure the growth of pupils in ability to apply generalizations and in attitudes toward children or toward decision making in the family, pretests were administered to the Homemaking I and Homemaking II pupils by the teachers during the first two weeks of the 1957-58 school year, and post-tests were given near the end of the year.

There were two reasons for asking the homemaking teachers to administer the tests. Firstly, pupils would consider the tests a part of the class activity. Secondly, such a plan was more feasible than attempting to arrange for some other person to give the tests. It is assumed that the teachers followed instructions in administering the tests.

Two or three days prior to the opening date of the school term a letter, a copy of Procedures to be Used in Giving the Tests, and a supply of test materials were sent to the homemaking teachers. Each of these items is shown in Appendix C.

All copies of the tests and response sheets of pupils were returned by the teachers to the Home Economics Education
Department, Iowa State College. Most of the teachers returned the materials promptly; however, some follow-up letters and telephone calls were required before the materials were received from every teacher. It was important that tests be returned since they were to be used as post-tests.

In using the same tests that were administered near the beginning of the school year as post-tests near the end of the school term, the assumption was made that the span of time between the two administrations of the tests was sufficient to prevent pupils from recalling their earlier responses. Because the teachers did not know that the same tests were to be repeated, it was assumed that they made no special effort to see that pupils would be able to do well on the tests. Neither the teachers nor the pupils were informed of the correct responses; however, the key to Bringing up Children (47) was available to them if, in contradiction to instructions, they separated the sheets of the test that were glued together at the edges.

On May 1, 1958, a letter shown in Appendix C was sent to the teachers to provide them with information regarding the administration of the post-tests. On the following day a copy of Instructions for Giving Final Tests shown in Appendix C and a supply of the test materials were mailed to each of them.
With one exception all of the teachers gave the tests on two consecutive days during the period from May 5 to May 16. One teacher did not administer the tests until June 2 and 3 due to the involvement of pupils in preparations for a ninth-grade party, an all-school banquet and prom, and a style show. Because the teacher indicated that these experiences were not planned to be a means of helping girls gain in ability to apply generalizations or to change attitudes toward children, it is assumed that the extra time span that elapsed before the post-tests were taken did not favor these classes.

Response sheets of the pupils were returned promptly by the teachers. The last set was received the first week of June.

Administration of Scale Six of Pupil Reaction Inventory

Scale Six of the Pupil Reaction Inventory was administered by the investigator to the homemaking classes of twelve teachers between March 20 and April 29, 1958. The teacher left the classroom for the last twenty minutes of each class period while the pupils responded to the criterion measure. In addition to discussing briefly the instructions that are on the mimeographed copies of the measure with each class, the investigator explained:
This year we are trying to learn more about homemaking classes in Iowa. You have been selected to help. We hope to learn how Iowa girls feel about homemaking classes. We need to know the kinds of things you would say about this homemaking class if you were telling someone exactly how you feel. Miss ______ has left the room so that you will be completely free to answer the way you feel. This is not a test. Your name will not be on the paper; therefore, no one needs to know how you answered. Your opinion is needed. Please read each statement carefully before marking the response sheet. There are no right answers that everyone should give. There is a right answer for you. That is the way you feel, but only you know what that answer is.

As the response sheets were collected, the investigator quickly checked to see that no pupil had omitted responding to any item. Most pupils completed their responses in about twelve minutes. Out of all the pupils of the twelve teachers only two or three required twenty minutes to respond to Scale Six.

Assessment of behaviors of pupils and teachers in the classroom

The behaviors of pupils and teachers during homemaking class sessions were assessed by two observers during January through April, 1958. One observer made two visits to the classes of twelve teachers but the second observation was reduced in time to allow for administration of Scale Six. The other observer visited nine of them once. On each visit to a class the observer made assessments of the behavior dimensions included in the Observation Record for Homemaking
Classes.

Because of the limited number of days which the observers could devote to observations of classes, the teachers were notified of approximate dates when an observer might be present and asked to report if the classes were not to be in session. The teachers were informed of the exact date for the second observation so that plans could be made for setting aside time during each class period for the administration of Scale Six.

The observers were present for entire class periods except when Scale Six was administered or when they had observed the class that met during the preceding period. In the latter case they usually had to miss the first few minutes of the class period in order to record the assessments of behaviors of the first class.

The observers took no notes and did not have the Observation Record for Homemaking Classes or Glossary visible while observing a class. At the end of the class period the observers inconspicuously recorded assessments of the observed behaviors of the pupils and the teacher. Teachers were told that the observer was attempting to describe accurately what happened in the class.

A seven-point scale similar to the one reported by Ryans (54, p. 128) was used by the observers in assessing behaviors. An assessment of one or seven indicates that the description
of one pole of the dimension is definitely descriptive of the observed behaviors. An assessment of four means that the observed behaviors represent a neutral point midway between the two poles of the behavior dimension. An assessment of two or six indicates that observed behaviors closely approximate behaviors described by one of the two poles. An assessment of three or five shows that the observed behaviors approach a neutral point midway between the two poles but tend to be more nearly like one pole than the other. The letter, N, is used to indicate that there is no opportunity to observe a particular dimension of behaviors.

Analysis of Data

Data secured from the criterion measures employed in the present investigation were designed to provide information by classes about the effectiveness of the teachers in relation to four criteria. The class measurements are in the form of (1) mean gains of classes on tests of ability to apply generalizations and on attitude tests for the criterion of growth of pupils in achieving educational objectives, (2) mean scores of classes on Scale Six of the Pupil Reaction Inventory for the criterion of attitudes of pupils toward the teacher, (3) sum of mean assessments of pupil-behavior dimensions by classes for the criterion of behaviors of pupils in the
classroom, and (4) mean assessments of teacher-behavior dimensions by classes for the criterion of behaviors of teachers in the classroom. There is only one exception to the analysis of data by classes. One analysis of the growth of pupils in ability to apply generalizations was based upon the mean gains of pupils of each teacher by levels of homemaking rather than by classes.

The process of analyzing data by classes involved the computation of product moment correlation coefficients in the case of three of the criteria. The correlation between mean gain of classes and mean intelligence quotient was estimated for the criterion dimension of growth of pupils in ability to apply generalizations as a basis for choosing the method of testing for differences among teachers on this criterion. Inter-observer and inter-visit correlations on assessment of behavior dimensions were estimated as a means of selecting the pupil- and teacher-behavior dimensions to be included in the tests of differences among teachers.

After data related to each criterion were analyzed by classes, analysis of variance was the method used to test for differences among teachers. Detailed information regarding the analysis of data is presented in Findings and Discussion.
FINDINGS AND DISCUSSION

The purpose of the analysis of data was to determine the extent to which each of the criterion measures employed in the present investigation discriminated among the homemaking teachers. Findings related to each criterion are presented from the standpoint of this purpose.

The plan of the investigation also included a study of the interrelationships among criteria. Since there were significant differences among teachers on only two of the four criteria, the relationships between them were not investigated, but the recommendation is made that further research include this aspect of the problem. In order to study relationships among criteria it will be necessary to increase the size of the sample. In the present investigation the criterion measures of achievement of educational objectives by pupils were administered by twenty-six teachers; however, criterion data for only twelve teachers were secured regarding attitudes of pupils toward the teacher and behaviors of pupils and teachers in the classroom.

Growth of Pupils in Achieving Educational Objectives

Data from the tests of attitudes and ability to apply generalizations were analyzed to determine the mean gain for each homemaking class. The means were obtained after the raw
gain of each pupil was computed by subtracting the pretest score from the post-test score for each of the two types of tests. The mean gain of each class was used as a measurement of growth of pupils in the achievement of educational objectives and, hence, as an indication of the effectiveness of the teacher.

Analysis of variance was the method employed in determining whether the teachers differed in regard to amounts of gain exhibited by their pupils. In all of the analyses random selection of pupils for class membership is assumed. Class means were used in the analysis of variance rather than the gains of the individual pupils for two related reasons. Firstly, the gains exhibited by the pupils in a class are replications of the measurement of the effectiveness of the teacher in that class; therefore, the mean of the measurements was used. Secondly, the investigator is unwilling to assume that the gains of individual pupils within a class are independent measures of the effectiveness of the teacher; interactions among pupils in these classroom situations make such an assumption untenable.

In the analysis of variance used in this study error variance is assumed to be homogeneous from class to class. This assumption can not be explicitly tested because there is only one mean for each class for each criterion measure, but
the reliability of the criterion measures may lend credibility to the assumption. As reported in the Method of Procedure, the coefficients of internal consistency of the Homemaking I and Homemaking II tests of ability to apply generalizations and the Homemaking II attitude scale are .75, .77, and .84, respectively. The reliability of the attitude inventory, Bringing Up Children (47), used in Homemaking I was not reported, but the coefficient of reliability between the two forms of the instrument was given as .873 (60, p. 47). The investigator believes that these reliabilities are sufficiently high to justify the use of class-mean gains resulting from the administration of these tests in an analysis of variance and the assumption of homogeneity of error variance.

The decision to use mean raw gain of pupils was dependent not only upon the assumption of homogeneity of error variance but also upon the finding reported later that the mean intelligence quotient of a class was uncorrelated with mean pupil gain in this study, the belief that no ceiling effect is present in the criterion measures, and the assumption that all units of measurement within the tests are equivalent. If the variance of error is homogeneous from class to class, estimates of true gains of pupils are not necessary for the testing of hypotheses concerning differences among teachers. No ceiling effect is believed to be present because few pupils
approached the maximum scores on the post-tests. The highest scores on the post-tests of ability to apply generalizations were 69 out of 90 possible points on the Homemaking I test and 87 out of 104 possible points on the Homemaking II test. These high scores were made by only one of the 673 Homemaking I pupils and two of the 431 Homemaking II pupils. For most pupils the post-test scores were considerably lower. On the attitude tests one Homemaking I pupil out of 650 made 44 out of 45 points, and one Homemaking II pupil out of 417 made 163 out of 170 possible points. Most scores were much lower, however. A gain of a certain number of points is believed to be comparable throughout the test since an examination of pretest and post-test scores of the pupils did not reveal any pattern in regard to the amount of gain exhibited by pupils who scored low or high on the pretests.

The computational procedures for analysis of variance with two or more variables of classification had to be adjusted to take into account the fact that means of classes of the different sizes and levels were not available for each teacher. Other statistical considerations that possibly influence the results are: (1) differences in class size result in heterogeneity in variances for the error terms used; (2) school differences are confounded with teacher differences, size differences, and class differences; and (3) within
class variability, and as a result, between class variability is probably related to schools to some extent. In the present investigation there were only two instances in which two teachers were teaching in the same school system, and even in these cases they were teaching in different schools. The fact that many Iowa high schools employ only one homemaking teacher presents a problem in regard to studying the effects of schools upon the learning of homemaking pupils.

With the above limitations in mind a question may be asked concerning why the investigator refused to accept the assumption of independence of individuals since other assumptions, seemingly of equal importance, may not be met. There are two reasons: (1) with about 1,100 degrees of freedom for an error term all null hypotheses probably would be rejected; and (2) since school differences enter into apparent differences between teachers, classes, and sizes, it was believed that only large absolute differences should be considered as evidence for the rejection of the null hypothesis.

**Tests of ability to apply generalizations**

The mean gain of pupils in each class in measured ability to apply homemaking generalizations is shown in Table 1. Classes are categorized according to the size of the class and the level of homemaking. The division line for size of class was set between fifteen and sixteen pupils
Table 1. Mean gains of classes by size and level on tests of ability to apply generalizations

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking I</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small class&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Large class&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>A</td>
<td>7.9</td>
<td>12.5</td>
</tr>
<tr>
<td>B</td>
<td>4.6</td>
<td>11.0</td>
</tr>
<tr>
<td>C</td>
<td>10.9, 7.1</td>
<td>13.2</td>
</tr>
<tr>
<td>D</td>
<td>7.8</td>
<td>5.0</td>
</tr>
<tr>
<td>E</td>
<td>7.3, 3.9</td>
<td>8.5, 7.7</td>
</tr>
<tr>
<td>F</td>
<td>12.5</td>
<td>14.8</td>
</tr>
<tr>
<td>G</td>
<td>10.5, 12.0</td>
<td>12.9, 8.7, 15.9</td>
</tr>
<tr>
<td>H</td>
<td>9.8, 6.8</td>
<td>12.7, 17.4</td>
</tr>
<tr>
<td>I</td>
<td>9.2</td>
<td>10.4</td>
</tr>
<tr>
<td>J</td>
<td>6.1, 3.8</td>
<td>10.1, 7.4</td>
</tr>
<tr>
<td>K</td>
<td>7.3, 3.9</td>
<td>10.1, 7.4</td>
</tr>
<tr>
<td>L</td>
<td>17.8</td>
<td>6.0, 4.5, 9.0, 8.9</td>
</tr>
<tr>
<td>M</td>
<td>10.9, 7.2</td>
<td>9.3, 7.2, 11.3</td>
</tr>
<tr>
<td>N</td>
<td>-3.4, 9.6</td>
<td>9.3, 9.9</td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Class included fifteen or fewer pupils.

<sup>b</sup>Class included sixteen or more pupils.

<sup>c</sup>Although complete data were secured for only fifteen pupils of this class, evidence indicated the regular class size was sixteen or more.
because this provided for a logical division of the classes of every teacher. With this division the smallest difference in the sizes of a small and large class taught by the same teacher is three pupils. In Table 1 if a teacher had two or more classes of the same size and level, the respective class means are shown under the same heading. For example, teacher F had two small Homemaking I classes with means of 10.9 and 7.1. Teacher X had five large Homemaking II classes. The number of pupils for whom both pretest and post-test scores were secured and, therefore, for whom gains were computed is shown in Appendix F. The range of the class means for Homemaking I is from -3.4 to 17.8 and for Homemaking II is from -2.4 to 20.4.

In the Method of Procedure it was mentioned that one teacher administered the post-tests about two weeks later than the other teachers. An inspection of the mean gains of the classes of teacher Y shown in Table 1 tends to support the assumption that this time factor did not favor these classes, because they cluster around the overall mean of 9.3.

One pupil characteristic that can logically be expected to influence achievement of pupils is intelligence; however, the findings of the present investigation indicate that intelligence was not a factor in the amount of gain exhibited by the classes. For the seventy homemaking classes for which
mean gains are shown in Table 1 the Pearson product moment correlation between mean pupil gain and mean intelligence quotient is .11. On the basis of a t test the hypothesis that the correlation in the population is zero is not rejected. The mean intelligence quotient of the pupils in each class is presented in Appendix F.

Since the intelligence quotients of the pupils of different teachers are not all based on the same intelligence tests, the investigator realizes that the information regarding the intelligence of pupils of different teachers is only roughly comparable. The same test had been taken by the pupils of fifteen of the twenty-six teachers, however. A scatter plot of the mean pupil gain and mean intelligence quotient of each of the forty classes of these fifteen teachers showed clearly that the correlation between mean gain and mean intelligence quotient based upon the same test was not essentially different from zero.

The possibility of using analysis of covariance with intelligence as one of the predictor variables had been anticipated when the investigation was planned. Because there seemed to be no relationship between the mean intelligence quotient of a class and the mean pupil gain, the method of analysis of variance was used rather than analysis of covariance.
The first exploratory analysis of variance was based upon the mean gains of pupils by levels of homemaking. For the seventeen teachers who taught at least one class at each level of homemaking the mean gain of the pupils was computed ignoring class groupings. These data are presented in Table 2. The mean gains range from 3.4 to 17.8 for Homemaking I and from -2.4 to 17.9 for Homemaking II.

Results of the analysis of variance are presented in Table 3. With an $F$ value of 3.58 the null hypothesis of no difference among teachers is rejected at the 99 per cent con-

### Table 2. Mean gains by level on tests of ability to apply generalizations

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking I</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12.5</td>
<td>10.5</td>
</tr>
<tr>
<td>D</td>
<td>11.0</td>
<td>16.1</td>
</tr>
<tr>
<td>E</td>
<td>6.1</td>
<td>13.2</td>
</tr>
<tr>
<td>F</td>
<td>9.0</td>
<td>4.7</td>
</tr>
<tr>
<td>G</td>
<td>6.8</td>
<td>4.3</td>
</tr>
<tr>
<td>J</td>
<td>6.4</td>
<td>9.7</td>
</tr>
<tr>
<td>K</td>
<td>14.8</td>
<td>17.2</td>
</tr>
<tr>
<td>L</td>
<td>4.7</td>
<td>13.1</td>
</tr>
<tr>
<td>M</td>
<td>11.2</td>
<td>17.2</td>
</tr>
<tr>
<td>P</td>
<td>9.5</td>
<td>13.0</td>
</tr>
<tr>
<td>R</td>
<td>8.9</td>
<td>4.3</td>
</tr>
<tr>
<td>S</td>
<td>8.7</td>
<td>8.3</td>
</tr>
<tr>
<td>T</td>
<td>10.4</td>
<td>9.5</td>
</tr>
<tr>
<td>U</td>
<td>17.8</td>
<td>16.9</td>
</tr>
<tr>
<td>V</td>
<td>9.1</td>
<td>9.6</td>
</tr>
<tr>
<td>W</td>
<td>3.4</td>
<td>-2.4</td>
</tr>
<tr>
<td>Z</td>
<td>9.9</td>
<td>8.6</td>
</tr>
</tbody>
</table>
Table 4. Analysis of variance of mean gains of classes on the tests of ability to apply generalizations

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sources of variation</td>
<td>47</td>
<td>17.9402</td>
<td>1.67</td>
<td>2.13</td>
</tr>
<tr>
<td>Size of class controlling for level</td>
<td>2.53</td>
<td>2.53</td>
<td>.94</td>
<td>2.85</td>
</tr>
<tr>
<td>Level controlling for size of class</td>
<td>8.0328</td>
<td>.75</td>
<td>2.33</td>
<td></td>
</tr>
<tr>
<td>Within groups of classes of same size and level taught by same teacher</td>
<td>16</td>
<td>10.7427</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

and is

\[
\sum \left( x_{1ij} - x_{2ij} \right)^2 / 2n
\]

in which \( x_{1ij} \) and \( x_{2ij} \) are the mean gains of two classes of the same size and level taught by a teacher, and \( n \) is the number of teachers for whom pairs of such class means were used. There are sixteen teachers in Table 1 who had two or more classes of the same size and level. For four of the teachers who had more than two classes of the same size and level special treatment was necessary. Since the independent observations are teachers, the expected value of

\[
(x_{1ij} - x_{2ij})^2 = \frac{\sum (x_{1ij} - \bar{x}_{ij})^2}{c - 1}
\]

in which \( c \) is the number of classes of the same size and level
Table 3. Analysis of variance of mean gains by level on tests of ability to apply generalizations

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>688.5991</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>533.8276</td>
<td>16</td>
<td>33.3649</td>
<td>3.58</td>
<td>3.37</td>
</tr>
<tr>
<td>Levels</td>
<td>5.6990</td>
<td>1</td>
<td>5.6990</td>
<td>.61</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>149.0725</td>
<td>16</td>
<td>9.3170</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Confidence level. Because the mean-pupil gains for teachers were computed by levels rather than by classes, the teacher as a source of variation is confounded with class. These results may be interpreted to mean that significant differences among groups of pupils may be attributed either to teachers or to classes or to a combination of them. The null hypothesis of no difference between levels is not rejected.

When the results of the preceding analysis of variance indicated that the teachers may differ significantly on the criterion measure of growth in ability of pupils to apply generalizations, an analysis of variance that permitted a test of the significance of differences attributable to size of class and level of homemaking was carried out. This analysis of variance of mean gains of classes is summarized in Table 4.

The error term is the mean square within groups of classes of the same size and level taught by the same teacher.
taught by a teacher. One teacher had two small classes of Homemaking I and two small classes of Homemaking II. In this case

\[(X_{1ij} - X_{2ij})^2\]

was estimated by

\[\frac{\sum (X_{1ij} - X_{2ij})^2}{2}\]

The degrees of freedom for within groups of classes are \(n\) because no restricting mean is used in computing this mean square.

The sum of squares for the overall F test is

\[\sum \sum \bar{X}_{ij}^2 - \frac{\sum \sum \bar{X}_{ij}}{N}\]

in which \(\bar{X}_{ij}\) is the mean of the mean-class gains of one or more classes of the same size and level taught by a teacher and \(N\) is the number of such means that are used in the computation. The degrees of freedom for the overall F test are \(N - 1\).

The mean square for size of class controlling for level is

\[\frac{\sum (\bar{X}_{il} - \bar{X}_{12})^2}{2n}\]

The mean square for level controlling for size of class is computed in the same way as that for size of class except that the differences that are used are between pairs of classes of different levels but of the same size and taught by the
same teacher. In both cases the degrees of freedom are n
since no restricting mean is employed.

On the basis of the F tests shown in Table 4 the null
hypotheses of no differences among all sources of variation,
class size, and level are not rejected. The results of the
overall F test, all sources of variation, were unexpected
since the earlier analysis of variance revealed significant
differences on the basis of a confounding of teacher and class.
When the overall test was not significant, there was no need
for testing the significance of class size or level except
for exploratory purposes to see if the results provided any
basis for possible explanations for the differences in the
results of the two analyses of variance shown in Tables 3 and
4. The results seem to indicate that the variance between a
small class and a large class of the same level taught by a
teacher could be expected to be smaller than the variance be-
tween two classes of the same size and level taught by a
teacher. Further research may provide evidence as to whether
this is a chance occurrence or whether there is a logical
explanation for this phenomenon.

The length of the class period could affect pupil gain.
All but ten of the seventy homemaking classes in this study
met daily for fifty to sixty minutes; the ten classes met for
eighty to one hundred minutes. The latter classes included
the Homemaking I class of teacher A, the small Homemaking I
class of teacher C, the Homemaking II class of teacher F, and the classes of teachers K, M, and T shown in Table 1. An analysis of variance of mean gains of classes omitting classes which met for the longer periods provided results similar to those in the second analysis reported.

Other variables that could affect growth of pupils in achievement of educational objectives are the grade levels of the pupils and the number of previous years that pupils have been enrolled in high school homemaking classes. An inspection of the data of the present investigation did not indicate that either factor influenced the magnitude of the class-mean gains. Homemaking II classes tended to be somewhat more heterogeneous as to grade level and prior enrollment in homemaking classes than the Homemaking I classes. It is recommended that in further research an effort be made to control these variables since it seems reasonable that they could affect pupil gain.

It is concluded that teachers may differ in the amount of gain in ability to apply generalizations exhibited by pupils on the criterion measures used. Differences do not seem to be attributable to size of class, level of homemaking, or level of intelligence of the pupils. Although the criterion measure of growth of pupils in ability to apply generalizations did not adequately differentiate among the teachers in
respect to mean gains of pupils, it is recommended that further efforts be made to improve this measure. An item analysis would reveal which items discriminated between those scoring high and those scoring low on the pretests or post-tests. Items which failed to discriminate between the two groups could be eliminated or replaced. If the reliability of the tests could be maintained at a satisfactory level, consideration should be given to reducing the length of the tests so that essentially all pupils could complete the pre-tests in the allotted time.

Since the test items in the criterion measure relate to the different phases of homemaking that Iowa curriculum guides suggest be included in Homemaking I and Homemaking II, the scores on the tests could be in the form of sub-scores on ability to apply generalizations in each aspect of homemaking. Information could be secured from the teachers as to which phases of homemaking were actually included during the period of instruction under consideration. The gain of pupils in ability to apply generalizations in areas that were not taught could not be attributed to the teacher. Sub-scores would permit a study of the extent to which teachers differed in ability to help pupils learn to apply generalizations in different aspects of homemaking. One problem in using sub-scores would be the reliability of the sub-tests.
In further research the recommendation is made that the class sessions of the participating teachers be of approximately the same length. Since most of the teachers in the present study had class periods of fifty to sixty minutes in length, it would probably be possible to include only teachers with class sessions of approximately that length.

**Attitude tests**

For sixteen teachers who taught at least one class at each level of homemaking the mean gain of the pupils on attitude tests was computed and is shown in Table 5. Class

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking I</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.6</td>
<td>9.2</td>
</tr>
<tr>
<td>D</td>
<td>3.7</td>
<td>6.4</td>
</tr>
<tr>
<td>E</td>
<td>1.0</td>
<td>7.6</td>
</tr>
<tr>
<td>F</td>
<td>4.1</td>
<td>2.4</td>
</tr>
<tr>
<td>G</td>
<td>1.4</td>
<td>4.1</td>
</tr>
<tr>
<td>J</td>
<td>2.5</td>
<td>9.4</td>
</tr>
<tr>
<td>K</td>
<td>1.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>L</td>
<td>2.6</td>
<td>8.3</td>
</tr>
<tr>
<td>M</td>
<td>2.0</td>
<td>3.8</td>
</tr>
<tr>
<td>P</td>
<td>0.8</td>
<td>3.5</td>
</tr>
<tr>
<td>R</td>
<td>2.6</td>
<td>4.2</td>
</tr>
<tr>
<td>S</td>
<td>5.2</td>
<td>0.7</td>
</tr>
<tr>
<td>T</td>
<td>4.6</td>
<td>-4.4</td>
</tr>
<tr>
<td>U</td>
<td>0.8</td>
<td>6.8</td>
</tr>
<tr>
<td>V</td>
<td>3.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Z</td>
<td>3.5</td>
<td>2.6</td>
</tr>
</tbody>
</table>
groupings were ignored. The mean gains for Homemaking I range from 0.8 to 5.9 and for Homemaking II from -4.4 to 9.4.

Results of the analysis of variance are presented in Table 6. The null hypotheses of no differences between teachers or levels are not rejected.

Table 6. Analysis of variance of mean gains by level on attitude tests

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>250.7485</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>91.0097</td>
<td>15</td>
<td>6.0873</td>
<td>.64</td>
<td>2.43</td>
</tr>
<tr>
<td>Level</td>
<td>18.3921</td>
<td>1</td>
<td>18.3921</td>
<td>1.95</td>
<td>4.54</td>
</tr>
<tr>
<td>Residual</td>
<td>141.3467</td>
<td>15</td>
<td>9.4231</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In spite of the results of the preceding analysis the data were analyzed further. The mean-class gains on the attitude tests are shown in Table 7. The means of sixty-eight classes taught by twenty-six teachers are included. Two of the seventy classes that took the attitude tests were eliminated because there was some evidence that pupils referred to the key of Bringing Up Children (47) when they took the post-test. The test is designed so that the back and front sheets may be separated to expose the key.
Table 7. Mean gains of classes by level on attitude tests

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking I</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.6</td>
<td>8.2</td>
</tr>
<tr>
<td>B</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>4.0, 2.5</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>3.7</td>
<td>6.4</td>
</tr>
<tr>
<td>E</td>
<td>1.0</td>
<td>7.8</td>
</tr>
<tr>
<td>F</td>
<td>4.3, 3.7</td>
<td>2.4</td>
</tr>
<tr>
<td>G</td>
<td>1.0, 1.9</td>
<td>4.1</td>
</tr>
<tr>
<td>H</td>
<td>0.2, 1.8</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1.6, 6.9</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>2.5</td>
<td>9.4</td>
</tr>
<tr>
<td>K</td>
<td>1.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>L</td>
<td>2.7, 2.9</td>
<td>8.3</td>
</tr>
<tr>
<td>M</td>
<td>0.7, 3.5</td>
<td>3.8</td>
</tr>
<tr>
<td>N</td>
<td>5.2, 0.7, 8.6</td>
<td>1.5, -0.5</td>
</tr>
<tr>
<td>O</td>
<td>0.1, 1.8, 0.2</td>
<td>3.5</td>
</tr>
<tr>
<td>P</td>
<td>0.1, 1.8, 0.2</td>
<td>3.5</td>
</tr>
<tr>
<td>Q</td>
<td></td>
<td>5.0, 5.1</td>
</tr>
<tr>
<td>R</td>
<td>2.6</td>
<td>4.2</td>
</tr>
<tr>
<td>S</td>
<td>6.6, 3.9</td>
<td>0.7</td>
</tr>
<tr>
<td>T</td>
<td>4.6</td>
<td>-4.4</td>
</tr>
<tr>
<td>U</td>
<td>0.2</td>
<td>2.3, 10.9</td>
</tr>
<tr>
<td>V</td>
<td>2.0, 4.2, 2.9</td>
<td>-0.4, 7.5</td>
</tr>
<tr>
<td>W</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>8.1, 8.3, -1.0,</td>
<td>3.2, 5.9</td>
</tr>
<tr>
<td>Y</td>
<td>1.8, 6.5, 6.5</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>3.4, 3.7</td>
<td>9.6, 2.6</td>
</tr>
</tbody>
</table>

Since an inspection of the data indicated that class size was not related to mean gain, the class means are grouped according to the level of homemaking and not according to class size. The class means range from 0.1 to 6.9
for Homemaking I and from -4.4 to 10.9 for Homemaking II. The number of pupils for whom both pretest and post-test scores were secured and for whom gains were computed is shown in Appendix F.

An analysis of variance of mean gains of classes on the attitude tests is summarized in Table 8. The computational procedures in the overall F test, all sources of variance, are the same as those described for the analysis of variance shown in Table 4. Because the overall F test was not significant, there was no need to test the significance of additional F ratios.

Table 8. Analysis of variance of mean gains of classes on attitude tests

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sources of variation</td>
<td>41</td>
<td>6.9278</td>
<td>1.09</td>
<td>2.11</td>
</tr>
<tr>
<td>Within groups of classes of same level taught by same teacher</td>
<td>17</td>
<td>6.3440</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The criterion measures to determine achievement of pupils in regard to attitudes toward children and toward decision making in the family did not successfully differentiate among the teachers. There may be a number of reasons for this failure. The teachers may not have had as their
objectives the development of the attitudes measured by the tests employed although such objectives are consistent with proposals in Iowa curriculum guides for homemaking education. These curriculum guides offer teachers less help in the affective than in the cognitive area due in part to the fact that research on the learning of attitudes is limited and offers little help in choosing effective methods of changing attitudes. Because teachers received less help with the teaching of attitudes, differences among teachers may have been chance differences. It is generally accepted that educational objectives in the affective domain are not achieved in short instructional periods. Smaller gains of pupils during a period of instruction may make it more difficult to determine differences among teachers in their effectiveness in developing attitudes particularly if the instruments are not sensitive.

In order for progress to be made in the development of criterion measures of achievement of attitudinal objectives by pupils, objectives of homemaking education in the affective domain need to be stated in terms of behaviors that can be measured, and sensitive tests of the achievement of these objectives need to be developed.

Reasons for large variations among classes taught by the same teacher may be related to group characteristics that develop as a result of the interactions among pupils
composing the group. In further research a study of the relationships between characteristics of groups and the achievement of educational objectives is recommended.

No test should be used that makes it possible for any of the pupils or the teachers to see the key. It is believed that most teachers and pupils will cooperate in following instructions in regard to the administration of the tests, but there is need for providing no opportunity for deception and the confusion of results.

Attitudes of Pupils Toward the Teacher

The mean scores of pupils in each class on Scale Six of the Pupil Reaction Inventory shown in Appendix D are presented in Table 9. The means of the twenty-eight classes of twelve teachers range from 10.3 to 19.8 for Homemaking I and 12.9 to 20.9 for Homemaking II. The highest possible score on the measure is 26.

The analysis of variance of class-mean scores is summarized in Table 10. The computational procedures are like those used in the analysis of variance reported in Table 4. Since the overall F test was not significant, there was no need to test the significance of other sources of variation.

Scale Six of the Pupil Reaction Inventory failed to differentiate among the homemaking teachers. The reason for this failure does not appear to be lack of reliability of the
Table 9. Mean scores of classes by size and level on Scale Six of the Pupil Reaction Inventory

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking I</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small class</td>
<td>Large class</td>
</tr>
<tr>
<td>A</td>
<td>16.3</td>
<td>17.1</td>
</tr>
<tr>
<td>B</td>
<td>16.1, 11.4</td>
<td>12.8</td>
</tr>
<tr>
<td>C</td>
<td>16.2</td>
<td>17.2</td>
</tr>
<tr>
<td>D</td>
<td>14.9</td>
<td>18.1</td>
</tr>
<tr>
<td>E</td>
<td>10.3</td>
<td>13.4</td>
</tr>
<tr>
<td>F</td>
<td>15.8, 14.8</td>
<td>16.9</td>
</tr>
<tr>
<td>G</td>
<td>13.7</td>
<td>13.4</td>
</tr>
<tr>
<td>H</td>
<td>19.8, 19.4</td>
<td>17.4, 12.1</td>
</tr>
<tr>
<td>I</td>
<td>17.4, 12.1</td>
<td>20.9</td>
</tr>
<tr>
<td>J</td>
<td>17.9</td>
<td>19.9</td>
</tr>
<tr>
<td>K</td>
<td>14.6</td>
<td>17.9</td>
</tr>
<tr>
<td>L</td>
<td>16.3, 13.9</td>
<td>17.9</td>
</tr>
</tbody>
</table>

aClass included fifteen or fewer pupils.
bClass included sixteen or more pupils.

Table 10. Analysis of variance of mean scores of classes on Scale Six of the Pupil Reaction Inventory

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sources of variation</td>
<td>22</td>
<td>6.5960</td>
<td>1.16</td>
<td>4.56</td>
</tr>
<tr>
<td>Within groups of classes of same size and level taught by the same teacher</td>
<td>5</td>
<td>5.6676</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
measure because the reliability of the scale is estimated to be at least .82. In an effort to throw some light on possible reasons for the failure of the measure, information was examined concerning the classes used in determining the error term which was utilized in the overall F test. Some supplementary information had been secured at the time the classes were observed and Scale Six was administered. This information suggests that attitudes toward the teacher may have been influenced by the spread of socio-economic levels represented within the class or by feelings of the pupils about their most recent class experiences. For example, the difference between the mean scores of two classes of the same size and level taught by one teacher is 4.7, whereas the difference between the lowest and highest mean scores for Homemaking I is only 9.5. One pupil in the class with the lower mean score was, according to the teacher, not accepted by most of the class members or their parents because of social behaviors not acceptable to many persons in the community. The two classes of another teacher differed by 5.3 points in their mean scores. The girls in the class with the lower mean had only a limited number of days in which to complete their clothing projects on which they were working. They could have resented having to give the time to respond to Scale Six. In contrast there was no evidence that the other class was pushed for time in their
activities. Another factor that may have contributed to the differences between the classes was that the class with the higher mean was highly praised by the teacher at the beginning of the period.

It is recommended that Scale Six of the Pupil Reaction Inventory be explored further as a criterion measure of the effectiveness of the homemaking teachers. If at all possible the sample of teachers should include more teachers who have two or more classes of the same size and level so that variations between classes of the same teacher can be studied further. Some means of securing information in regard to the socio-economic level of the families of the pupils composing each class needs to be used so that the analysis of data can take into account wide differences in socio-economic level. Classes of the same size and level of the same teacher should have similar learning experiences on the day that the criterion measure is administered so that reactions to allowing time for responding to the measure can be expected to be comparable between the classes.

Behaviors of Pupils in the Classroom

The behaviors of the pupils of nine teachers were observed by two observers. The correlations between the two observers in their assessments of pupil behaviors on the observation record shown in Appendix E are presented in
Table 11. These product moment correlation coefficients are computed between the mean assessments of the Homemaking I classes of each of the nine teachers by one observer on two different visits and by the other observer on one visit to each class. Inspection reveals that the coefficients are not essentially different from zero.

Table 11. Inter-observer and inter-visit correlations between assessments of behaviors of pupils

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Inter-observer</th>
<th>Inter-visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apathetic-alert</td>
<td>-.14</td>
<td>.60</td>
</tr>
<tr>
<td>Obstructive-responsible</td>
<td>.11</td>
<td>.21</td>
</tr>
<tr>
<td>Uncertain-confident</td>
<td>-.12</td>
<td>.28</td>
</tr>
<tr>
<td>Dependent-initiating</td>
<td>-.23</td>
<td>.70</td>
</tr>
</tbody>
</table>

The correlations between the two observers are a function of the consistency of the behaviors of the pupils from day to day and the ability of the two observers to recognize and assess the same behaviors similarly. In order to secure information related to the consistency of pupil behaviors the product moment correlation coefficients between the assessments of one observer on two different visits were computed. Data used in determining these correlations, which are shown in Table 11, are the mean assessments of the
Homemaking I classes of each of twelve teachers by one observer on each of two visits to the classes. The twelve teachers include three in addition to the nine visited by both observers. Three of the inter-visit correlations are of a magnitude to indicate that the low correlations between observers may not be due to inconsistencies in the behaviors of pupils. There is a need for improvement of the ability of observers to assess behaviors.

The inter-visit correlations on three of the pupil behavior dimensions seemed high enough to justify further analysis of the assessments of these behaviors by the one observer as a basis for making recommendations concerning possible ways of improving the measurement of behaviors of pupils as a criterion of teacher effectiveness. The means of the assessments of the first, second, and fourth pupil behavior dimensions by one observer on two different visits were computed for each class. The sum of the mean assessments of the three dimensions for each class is shown in Table 12. For Homemaking I classes the assessments of pupil behaviors range from 7.0 to 20.5 and for Homemaking II the range is from 13.5 to 19.5. The highest possible sum is 21.0 since the maximum assessment for each of the three dimensions is 7.0.

The analysis of variance of the sum of mean assessments
Table 12. Sum of mean assessments by one observer of three pupil-behavior dimensions by classes

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking I</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small class</td>
<td>Large class</td>
</tr>
<tr>
<td>A</td>
<td>19.0</td>
<td>13.5</td>
</tr>
<tr>
<td>B</td>
<td>15.0, 15.0</td>
<td>13.5</td>
</tr>
<tr>
<td>C</td>
<td>7.0</td>
<td>7.5</td>
</tr>
<tr>
<td>D</td>
<td>17.0</td>
<td>19.0</td>
</tr>
<tr>
<td>E</td>
<td>10.5</td>
<td>14.5</td>
</tr>
<tr>
<td>F</td>
<td>20.5, 20.5</td>
<td>19.0</td>
</tr>
<tr>
<td>G</td>
<td>17.0</td>
<td>15.0</td>
</tr>
<tr>
<td>H</td>
<td>15.0, 13.5</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>16.5, 15.5</td>
<td>19.5</td>
</tr>
<tr>
<td>J</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>17.0</td>
<td>13.5</td>
</tr>
<tr>
<td>L</td>
<td>10.5, 11.0d</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Homemaking II</th>
<th>Homemaking II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small class</td>
<td>Large class</td>
</tr>
<tr>
<td>A</td>
<td>19.0</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>20.5</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>15.0</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>16.5</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>10.5, 11.0d</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)Class included fifteen or fewer pupils.

\(^b\)Class included sixteen or more pupils.

\(^c\)The means of three observations of this class are used.

\(^d\)This class was observed only once; the assessments of the one observation are used.

by one observer of three pupil-behavior dimensions for each class is summarized in Table 13. Except in the case of the mean square for teachers the computational procedures that were used are those described for the analysis of variance reported in Table 4. The mean square for teachers is

\[
\frac{\sum (\bar{X}_{II} - \bar{X}_I)^2 + \sum (\bar{X}_{III} - \bar{X}_{II})^2}{n_I + n_{II} - 2}
\]
Table 13. Analysis of variance of the sum of mean assessments by one observer of three pupil-behavior dimensions by classes

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.99</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sources of variation</td>
<td>18</td>
<td>11.9894</td>
<td>54.25</td>
<td>9.68</td>
</tr>
<tr>
<td>Teachers</td>
<td>7</td>
<td>5.0697</td>
<td>14.48</td>
<td>10.45</td>
</tr>
<tr>
<td>Levels controlling for size of class</td>
<td>3</td>
<td>4.3164</td>
<td>12.33</td>
<td>10.27</td>
</tr>
<tr>
<td>Size of class controlling for level</td>
<td>2</td>
<td>0.1250</td>
<td>0.38</td>
<td>13.27</td>
</tr>
<tr>
<td>Within groups of classes of same size and level taught by a teacher</td>
<td>5</td>
<td>0.3500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

in which $\bar{X}_{1I}$ and $\bar{X}_{1II}$ are the means for a teacher of the $X_{ij}$ for Homemaking I and for Homemaking II, respectively. $\bar{X}_1$ and $\bar{X}_{II}$ are the means of all of the $X_{ij}$ for the two levels. The number of teacher means used in the computation are designated by $n_I$ and $n_{II}$ for the respective levels. The error term which was used for the overall F test and for testing the significance of differences among teachers, levels, and sizes of classes is the mean square for variation between classes of the same size and level taught by a teacher. The null hypotheses of no differences among all sources of variation, teachers and levels are rejected at the 99 per cent confidence level. The hypothesis of no
differences between the two sizes of classes is not rejected.

On the basis of the results of this analysis of the assessments of pupil behaviors by one observer it is tentatively concluded that a criterion of behaviors of pupils in the classroom can successfully differentiate among homemaking teachers and that behaviors of pupils are sufficiently consistent in the classroom of a teacher for an assessment of a sample of these behaviors to serve as a criterion of the effectiveness of the teacher. These conclusions are tempered by the recognition that in the present study the two observers did not agree in their measurement of pupil behaviors; however, it is believed that observers can be trained to assess behaviors of pupils reliably.

Four recommendations are made regarding the criterion of behaviors of pupils. Firstly, further research should be conducted in an effort to improve the criterion measure tried in this investigation. Considerations in carrying out such research comprise the additional recommendations. Secondly, some revisions should be made in the pupil-behavior dimensions defined in the Glossary shown in Appendix E. A few of the descriptive characteristics included in the definitions were inappropriate for describing behaviors of high school girls in homemaking classes. The behavior dimensions also need to be examined to see if any commonly observed behaviors that
are related to the dimensions need to be added to the definitions. Thirdly, an effort needs to be made to increase the precision of the assessments. The problem of assessing behaviors of pupils is complicated by the fact that there are a number of pupils exhibiting various behaviors throughout a class period. The observer is faced with the question of the proportion of the pupils who are exhibiting the behaviors of a given dimension and what proportion of the class time the behaviors are evident. Further suggestions need to be developed to aid the observer in determining which point on the seven point scale most accurately describes the observed behaviors. Fourthly, the training period for observers needs to be extended to include sufficient experiences in observing and assessing behaviors of pupils to secure satisfactory reliability among observers. Some training of observers will probably need to be continued throughout the period of time in which observations are being made for research purposes in order to maintain satisfactory reliabilities between observations and observers.

Behaviors of Teachers in the Classroom

The correlations between two observers in the assessment of the behaviors of nine teachers are shown in Table 14. Data used in computing these product moment correlation coefficients are the means of the assessments made by each
Table 14. Inter-observer and inter-visit correlations between assessments of behaviors of teachers

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Inter-observer</th>
<th>Inter-visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial-fair</td>
<td>.00</td>
<td>.55</td>
</tr>
<tr>
<td>Autocratic-democratic</td>
<td>.09</td>
<td>.62</td>
</tr>
<tr>
<td>Aloof-responsive</td>
<td>.60</td>
<td>.37</td>
</tr>
<tr>
<td>Restricted-understanding</td>
<td>.73</td>
<td>.58</td>
</tr>
<tr>
<td>Harsh-kindly</td>
<td>.65</td>
<td>.69</td>
</tr>
<tr>
<td>Dull-interesting</td>
<td>.50</td>
<td>.69</td>
</tr>
<tr>
<td>Apathetic-alert</td>
<td>.82</td>
<td>.19</td>
</tr>
<tr>
<td>Unimpressive-attractive</td>
<td>.81</td>
<td>.35</td>
</tr>
<tr>
<td>Evading-responsible</td>
<td>.34</td>
<td>.38</td>
</tr>
<tr>
<td>Erratic-steady</td>
<td>.39</td>
<td>.63</td>
</tr>
<tr>
<td>Excitable-poised</td>
<td>.52</td>
<td>.76</td>
</tr>
<tr>
<td>Uncertain-confident</td>
<td>.41</td>
<td>.41</td>
</tr>
<tr>
<td>Disorganized-systematic</td>
<td>.52</td>
<td>.77</td>
</tr>
<tr>
<td>Inflexible-adaptable</td>
<td>.22</td>
<td>.40</td>
</tr>
<tr>
<td>Pessimistic-optimistic</td>
<td>.28</td>
<td>.32</td>
</tr>
<tr>
<td>Immature-integrated</td>
<td>.64</td>
<td>.10</td>
</tr>
<tr>
<td>Narrow-broad</td>
<td>.57</td>
<td>.43</td>
</tr>
<tr>
<td>Unreceptive-receptive</td>
<td>.53</td>
<td>.43</td>
</tr>
</tbody>
</table>

observer of the behaviors of the teachers during Homemaking I class sessions. The assessments were made on two different visits to each class by one observer and one visit by the other observer. The inter-observer correlations range from .00 to .81 with ten of the correlations being .50 or above. On the basis of a sign test it was believed that a correlation of .50 or above would be satisfactory for exploring the possibilities of the dimensions of a criterion of behaviors of teachers.
The correlations between the assessments of behaviors of teachers by the same observer at two different times also affect the reliability of the criterion measure. The inter-visit correlations for one observer are presented in the second column of Table 14. Data used in computing the correlation coefficients are the mean assessments of the Home-making I classes of each of twelve teachers by one observer on each of two visits to the classes. The twelve teachers include the nine who were observed by both observers. The range of correlations is from .10 to .77 with eight of them being .50 or above and one being .48.

Since the magnitude of the correlations is a function of both the reliability of the observer and the consistency of the behaviors of the teachers, both factors probably contributed to the variations in the inter-visit and inter-observer correlations. Evidences of inconsistencies of teachers in regard to several of the behavior dimensions were secured. For example, one teacher was rated highly on the unimpressive-attractive dimension on the first visit by the observer but was not neatly and attractively dressed at the time of the second visit. Some teachers varied on the unreceptive-receptive dimension as they taught different phases of homemaking. For example, at the time of the first visit one teacher was using suggestions in the Iowa curriculum guides in the teaching of a child development unit. On the
day of the second visit neither a test, the results of which were discussed by the class, nor the introduction of a clothing unit provided any evidence that the teacher was utilizing suggestions from the Iowa curriculum guides or evaluation materials. There were evidences that some teachers varied considerably from visit to visit on such other dimensions as apathetic-alert and immature-integrated. It is possible that some teachers are less consistent on some behavior dimensions than on others; therefore, larger samples of their behaviors may be needed in order to secure reliable measurements of some of the behavior dimensions.

The revision of the definitions of some of the behavior dimensions as well as additional training of observers may help to increase the reliability of observers. On the partial-fair dimension, for example, most teachers were consistently given high assessments in all of their classes. Perhaps the dimension can be redefined so that there will be more of a spread of the assessments. In the case of the autocratic-democratic dimension additional specificity in the definition may aid observers in recognizing and categorizing observed behaviors. The definitions of other dimensions may be improved in a similar manner.

In the present investigation both the inter-observer and inter-visit correlation coefficients were approximately .50 or above for five of the teacher behavior dimensions.
Data related to these five dimensions were analyzed further to determine whether there were differences among teachers in their assessed behaviors and whether there were differences among the behavior dimensions. Only the assessments made by the observer who visited each class twice were used in this analysis because data for twelve teachers rather than nine could be included, and evidences of agreement between the two observers on the five dimensions had been obtained. The mean assessments of the five teacher-behavior dimensions in each class on two visits by an observer are presented in Table 15. Two or three mean assessments of each behavior dimension are available for each teacher because each taught that number of Homemaking I or Homemaking II classes.

The analysis of variance of mean assessments of five teacher-behavior dimensions in each class is summarized in Table 16. A method for computing approximate sums of squares for an analysis of variance with unequal frequencies in the subclasses was used. In this analysis each mean assessment is assumed to be an independent measure of behavior of a teacher, variance within subclasses is assumed to be homogeneous, and the assessments are assumed to be measurements of a random sample of a normal population of the behaviors of teachers. Since the distribution of the behavior assessments deviates extremely from normal, the assumption of
Table 15. Mean assessments by one observer of five teacher-behavior dimensions by classes

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Restricted-understanding</th>
<th>Dull-kindly</th>
<th>Harsh-interesting</th>
<th>Disorganized-systematic</th>
<th>Narrow-broad</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6.0, 6.0</td>
<td>5.5, 6.0</td>
<td>6.5, 5.5</td>
<td>7.0, 4.5</td>
<td>7.0, 3.5</td>
</tr>
<tr>
<td>B</td>
<td>6.5, 6.0</td>
<td>6.0, 6.0</td>
<td>5.5, 5.0</td>
<td>7.0, 6.0</td>
<td>6.0, 6.0</td>
</tr>
<tr>
<td>C</td>
<td>6.5, 7.0</td>
<td>7.0, 7.0</td>
<td>4.0, 5.0</td>
<td>7.0, 3.0</td>
<td>4.0, 4.0</td>
</tr>
<tr>
<td>D</td>
<td>7.0, 5.0</td>
<td>7.0, 6.0</td>
<td>6.0, 5.5</td>
<td>7.0, 4.5</td>
<td>6.0, 6.0</td>
</tr>
<tr>
<td>E</td>
<td>7.0, 5.0</td>
<td>6.0, 3.5</td>
<td>6.0, 5.0</td>
<td>3.5, 4.5</td>
<td>3.5, 4.0</td>
</tr>
<tr>
<td>F</td>
<td>7.0, 6.5</td>
<td>7.0, 7.0</td>
<td>4.0, 5.0</td>
<td>4.0, 5.0</td>
<td>4.0, 5.0</td>
</tr>
<tr>
<td>G</td>
<td>6.5, 6.0</td>
<td>6.0, 7.0</td>
<td>6.0, 5.5</td>
<td>7.0, 4.5</td>
<td>4.0, 4.0</td>
</tr>
<tr>
<td>H</td>
<td>6.0, 6.0</td>
<td>7.0, 7.0</td>
<td>4.0, 5.0</td>
<td>5.0, 4.0</td>
<td>4.0, 4.0</td>
</tr>
<tr>
<td>I</td>
<td>5.5, 5.5</td>
<td>6.0, 5.5</td>
<td>6.0, 4.0</td>
<td>5.5, 5.5</td>
<td>3.0, 3.5</td>
</tr>
<tr>
<td>J</td>
<td>6.5, 6.5</td>
<td>6.0, 6.0</td>
<td>6.5, 7.0</td>
<td>6.5, 7.0</td>
<td>6.5, 7.0</td>
</tr>
<tr>
<td>K</td>
<td>5.0, 6.0</td>
<td>5.5, 5.0</td>
<td>6.0, 4.0</td>
<td>6.0, 4.0</td>
<td>6.0, 4.0</td>
</tr>
<tr>
<td>L</td>
<td>6.0, 6.0</td>
<td>6.0, 6.0</td>
<td>3.5, 5.0</td>
<td>2.5, 3.0</td>
<td>4.0, 5.0</td>
</tr>
</tbody>
</table>

This is the mean of the assessments made on three visits to this class.

Only one assessment was available for this class.

normality of the distribution is not met and results are interpreted with caution.

Because interaction between teachers and behavior dimensions was significant at the 99 per cent confidence level, the mean square for interaction was used as the error term in testing the significance of differences among teachers and among behavior dimensions. The null hypotheses of no
Table 16. Analysis of variance of mean assessments by one observer of five teacher-behavior dimensions by classes

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>d.f.</th>
<th>Mean square</th>
<th>F</th>
<th>F.99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>71.1173</td>
<td>139</td>
<td></td>
<td>2.68</td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>44.8565</td>
<td>11</td>
<td>4.0779</td>
<td>9.95</td>
<td>2.68</td>
</tr>
<tr>
<td>Behavior dimensions</td>
<td>8.2350</td>
<td>4</td>
<td>2.0588</td>
<td>5.03</td>
<td>3.78</td>
</tr>
<tr>
<td>Interaction</td>
<td>18.0258</td>
<td>44</td>
<td>.4097</td>
<td>1.96</td>
<td>1.84</td>
</tr>
<tr>
<td>Error</td>
<td>80</td>
<td></td>
<td>.2085</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

differences among teachers and among behavior dimensions are rejected with 99 per cent confidence. On the basis of these results it is tentatively concluded that the teachers differ in the classroom behaviors that were measured. There is evidence that there are differences among the five behavior dimensions. The significance of the interaction indicates that the teachers are ordered differently on different behavior dimensions.

Behaviors of teachers in the classroom seem to have merit as a criterion of teacher effectiveness although only tentative conclusions can be drawn. It is recommended that further research be conducted in an effort to improve the Observation Record as a criterion measure. After inter-
observer reliability has been established by means of extensive training, each of two or more observers should observe each teacher during several class sessions on two or more different days. An even larger sample of the behaviors of the teacher may be preferable.

Three recommendations are made in regard to planning for the observation of behaviors of teachers and pupils in the classroom. The observers should have no responsibility in so far as the teachers being observed are concerned other than the observation of the classroom behaviors. If such a plan were acceptable to the participating teachers and if arrangements could be made so that an observer would not travel to a school at a time when classes could not be observed, it would be desirable for the homemaking teachers not to know when the observers plan to be present in the classes. The third recommendation is that teachers be requested to provide the observers with a plan of when different units of homemaking are to be taught so that observations can be scheduled so as to provide a sample of the behaviors of the teacher in teaching different aspects of homemaking. It would be desirable to be able to observe each teacher as she uses a number of methods of teaching. Since it would probably be impossible to make such detailed arrangements, observation of the teaching of different units may provide opportunity to observe several different methods of teaching.
SUMMARY

The purposes that were achieved in the present investigation include the selection and adaptation of criterion measures for determining the effectiveness of homemaking teachers and the determination of the extent to which each of these measures discriminated among the teachers. The objective to study the interrelationships among the criteria was not accomplished because only two of the criteria differentiated among the teachers.

The sample was limited to twenty-six homemaking teachers who were graduated from the Iowa State College with a bachelor of science degree and a major in home economics education during June, July, and August, 1957; who, according to records of the Teacher Placement Office, had accepted a position by July 9, 1957, to teach homemaking in Iowa secondary schools; and who had no previous teaching experience. Only the Homemaking I and Homemaking II classes taught by these teachers during the 1957-58 school year were used.

The criteria that were employed are growth of pupils in achieving educational objectives, attitudes of pupils toward the teacher, behaviors of pupils in the classroom, and behaviors of the teacher in the classroom. Measures were selected or adapted for these criteria. The dimensions of the first criterion are ability to apply generalizations and
attitudes toward children and toward decision making in the family. Tests measuring ability to apply generalizations in solving homemaking problems were prepared for Homemaking I and Homemaking II classes by revising test items that had been developed for use by Iowa homemaking teachers and by preparing some additional test items. A test of attitudes toward children (47) and a scale measuring attitudes toward family decision making (3, pp. 202-204) were selected for use with Homemaking I and Homemaking II classes, respectively. To determine the attitudes of pupils toward the teacher, Scale Six of the Pupil Reaction Inventory (43) was selected. Measures of the last two criteria, behaviors of pupils and teachers in the classroom, were adapted from the Classroom Observation Record (51, p. 385) and Glossary (50).

Criterion data were collected during the 1957-58 school year. The homemaking teachers administered the tests of attitudes and ability to apply generalizations to their Homemaking I and Homemaking II classes near the beginning and again near the end of the school year. The investigator administered Scale Six to the classes of twelve of the teachers between March 20 and April 29. The behaviors of pupils and teachers during homemaking class sessions were assessed by two observers during January through April. One observer made two visits to the classes of twelve teachers; the other observer visited nine of them once.
Data secured from the criterion measures were analyzed by classes and by class levels. Analysis of variance was the method used to test for differences among teachers on each criterion. The plan to make an analysis of covariance was discarded when no correlation was found between the mean-class gains on the tests of ability to apply generalizations and the mean intelligence quotients of the classes.

The mean gains of classes on the tests of ability to apply generalizations range from -3.4 to 17.8 for Homemaking I and from -2.4 to 20.4 for Homemaking II. The range of mean gains on the attitude tests is from 0.1 to 6.9 for Homemaking I and from -4.4 to 10.9 for Homemaking II. On the basis of mean gains of classes neither the criterion measure of growth of pupils in ability to apply generalizations nor the measure of growth in attitudes significantly differentiated among the teachers. The former measure did differentiate among teachers on the basis of mean gains of pupils by levels of homemaking, however.

The criterion measure of attitudes of pupils toward the teacher failed to discriminate among the teachers. The means of the twenty-eight classes of the twelve teachers range from 10.3 to 19.8 for Homemaking I and 12.9 to 20.9 for Homemaking II.

The criterion of behaviors of pupils in the classroom functioned with some success. The inter-visit correlations
of the assessments of four pupil-behavior dimensions by one observer range from .28 to .81 with three of the correlations being .60 or above. The inter-observer correlations on the same behavior dimensions range from -.23 to .11, however. Because the inter-observer correlations were low, only the assessments by the one observer of the three pupil-behavior dimensions on which the inter-visit correlations were high were utilized in further analyses. Significant differences were found among teachers on the sum of mean assessments by one observer of three pupil-behavior dimensions by classes.

Some dimensions of the measure of behaviors of teachers in the classroom successfully differentiated among teachers. Both the inter-observer and inter-visit correlations are .48 or above on five of the behavior dimensions. An analysis of variance of mean assessments by one observer of these five teacher-behavior dimensions revealed significant differences among teachers and among the dimensions. These results need to be interpreted with caution, however, because the assumption of normality of the distribution of the assessments was not met.

On the basis of the results of this investigation it is believed that each of the criteria and, with the exception of the attitude tests, the criterion measures employed in this investigation have sufficient potential for use in determining the effectiveness of homemaking teachers so that further
research should be conducted in an effort to improve them. Recommendations that relate to all of the criteria are that the size of the sample of teachers be increased; that the sample include more teachers who teach two or more classes of the same size and level; that all of the criterion measures being studied be employed with the entire sample; that all classes have periods of approximately the same length; that pupil information regarding intelligence, grade level, previous years of homemaking instruction, and socio-economic level of family be secured; and that interrelationships among criteria be investigated.

It is recommended further that the tests of ability to apply generalizations be improved by removing or replacing test items that did not discriminate between groups of pupils whose scores were high or low on the tests and by reducing the length of the tests if this can be done without reducing the coefficient of internal consistency. The reliability of sub-tests related to each phase of homemaking should be investigated since sub-scores might be used to determine whether teachers differ in the effectiveness of their teaching in different aspects of homemaking.

In order to prepare for further employment of a criterion of growth of pupils in achieving attitudes, the recommendations are made that objectives of the affective domain in homemaking education be stated in terms of behaviors that can
be measured and that sensitive tests to measure achievement of these objectives be developed.

The need for inter-observer and inter-visit reliability in the assessment of behaviors of pupils and teachers in the classroom is obvious. In order to secure satisfactory reliability it is recommended that the definitions of behavior dimensions on the criterion measure be improved, that precision of assessment be increased, that the training of observers be more extensive, that the sample of behaviors of pupils and teachers be increased by having two or more observers assess the behaviors in classes of each teacher at two or more different times, and that the observers have no responsibilities in relation to the teachers other than the observation of the classes. Arrangements should be made so that the sample of observations includes the teaching of different units of homemaking and preferably the use of different methods of teaching. It would be desirable for the teachers to be unaware of the dates of observations in advance.
LITERATURE CITED


43. Pupil reaction inventory. Form D. (Minneapolis), Minnesota, University of Minnesota, Bureau of Educational Research. (n. d.)


54. _______. Patterns of teacher classroom behavior and their assessment. Los Angeles, California, Author. Dittoed. (n. d.)


ACKNOWLEDGMENTS

Appreciation is expressed to the American Home Economics Association for receipt of the Ellen H. Richards fellowship for 1957-58.

Acknowledgment is given to Gladys Winifred Bebcock, Cyril J. Hoyt, and David G. Ryens for granting permission for the use or adaptation of measures that they had developed. Appreciation is expressed to the teachers who administered the pretests and post-tests, provided requested information about their pupils, and permitted the observation of their homemaking classes.

Gratitude is expressed to Florence Fellgatter for her suggestions and assistance in securing the cooperation of the school administrators and teachers. Leroy Wolins is sincerely thanked for his guidance in the statistical analysis of the data. The investigator is grateful to Hester Chadderdon for her thought-provoking and encouraging guidance throughout the investigation.
Letter to Administrators

IOWA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
AMES, IOWA

Department of Home Economics Education

July 11, 1957

Mr. __________
Superintendent of Schools
__________, Iowa

Dear Mr. __________:

I am writing to you because you will be having one of our this year Home Economics Education graduates from Iowa State College the coming school year.

In our department we make a constant effort to improve the curriculum so as to prepare better teachers. Miss Marguerite Scruggs, a graduate student who is working toward a Ph.D. in home economics education, is assisting us with our long-time program of curriculum improvement by means of a research project to be carried out during 1957-58. Through this research we hope to gain a better understanding of the beginning teacher's successes and problems and some of the pupil changes resulting from homemaking teaching. The findings will be helpful in strengthening the pre-service education program for homemaking teachers.

May we have your permission to include your homemaking teacher in this research project if she is willing to participate? A random sample of our beginning homemaking teachers has been drawn, and Miss __________'s name appears in the sample. We are eager for every teacher in the sample to take part in this particular research problem. Thus, your cooperation will be most appreciated.

I shall not write to your homemaking teacher until after I hear from you. Here is what would be involved if she is included in the project.
1. The homemaking teacher will be asked to administer to all pupils enrolled in Homemaking I and II a pre-test (maximum time required - two 55 minute class periods) near the beginning of the school year and a test (same length) near the end of the year. The tests will be returned to Iowa State College for scoring.

While your homemaking teacher may be asked to do only the above, she might be included in a sub-sample of teachers who will be asked to cooperate in the following additional activities.

2. The teachers in this group will have an observer, probably during the second semester. She will want to visit the Homemaking I and II classes one or more times.

3. All Homemaking I and II pupils in these schools will be requested to fill out an inventory of their reactions to their homemaking classes (maximum time required - one class period).

While it may be necessary to make some changes in the above plans, there will be no major changes in the amount of time asked of the teacher and pupils. The research is being planned so as to use as little teacher-pupil time as possible because we, too, are concerned with the welfare of your program.

All information will be treated as confidential.

Will you please return the enclosed card to me at the earliest possible date? While the research project does not ask you to take any time from your already busy schedule, we did not want to contact your teacher without knowing of your willingness for her to participate. If you want to ask any questions before making your decision, I shall be glad to answer them. Thank you for your assistance.

Very sincerely yours,

Florence Fallgatter
Head of Department

FF: enf

Encl.
Postal Card Enclosed in Letter to Administrators

Dear Miss Fallgatter:

(Check)  
 Yes  No  
 I shall be glad for you to contact our homemaking teacher concerning participation in the research project you described.

Opening date of our 1957-58 school term is ____________

__________________________

Signature

__________________________

School

Letter Requesting Cooperation of Teachers

IOWA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
AMES, IOWA

Department of Home Economics Education

August 13, 1957

Miss ____________  
Homemaking Teacher
__________ High School
__________, Iowa

Dear Miss ____________:

Your first year of teaching is about to begin. We can anticipate that this year will provide many new, interesting, and challenging experiences. I hope that your teaching will be most enjoyable and rewarding.

Already at this early date in your teaching career we need your professional assistance. Miss Marguerite Scruggs, graduate student working toward a Ph.D. in home economics education, is helping us with our long-time program of curriculum improvement by means of a research project to be carried out during 1957-58. Through this research we hope
to learn more about the kinds and amounts of change we can expect adolescents to make during one year of homemaking and the successes and problems experienced by beginning teachers. As a recent graduate and beginning teacher you are in a unique position to provide the kind of help we need.

Your name has been drawn in a random sample of Iowa State College graduates of the past year who are beginning homemaking teachers this fall. Your superintendent has approved including your homemaking program in the project if you are willing to participate. We felt that before we contacted you, we should know that it would be satisfactory with him for the research to be conducted in your school.

Before making your decision you undoubtedly would like to know more about what would be involved. Briefly, you would be asked to do the following:

1. Administer a pre-test to all of your Homemaking I and II pupils during the first few days of school. Maximum time required for the test would be two 55-minute class periods. Part I could be given one day; part II, the second day. The tests and simple instructions for administering them would be sent to you. Postage would be provided for you to return the tests to Miss Scruggs for scoring.

2. Administer an end-of-the-year test of the same length as the pre-test to all Homemaking I and II pupils. Again, these tests would be provided by and returned to Miss Scruggs for scoring.

This may be all that you would be asked to do. However, if your name were drawn in a sub-sample of the larger sample of teachers, you would also be asked to assist in the following ways:

1. An observer would visit your Homemaking I and II classes one or more times, probably during the second semester. The purpose of the visit would be to see the pupils in action.

2. You would also be asked to administer a pupil reaction inventory to all of your Homemaking I and II pupils during the second semester. The inventory will be an attempt to measure the reactions of adolescents to a homemaking class and would require one hour or less. Copies would be provided along with postage for returning the inventories to Miss Scruggs.
While it may be necessary to make some changes in the above plans, there will be no major changes in the amount of time which would be asked of you and your pupils. Homemaking teachers who have previously assisted with research projects have said that their pupils were proud of the fact that they were asked to be a part of important research. Every effort is being made to make this research project one in which you and your pupils would find satisfaction in sharing.

All information will be treated as confidential. Schools, teachers, or pupils will not be identified in reports of the study. If you are interested, we could send you a summary of your classes' responses on the tests and inventory.

One factor which will influence the quality of the results of this research project is the degree to which all teachers who were drawn in the random sample participate. May we depend on you to assist?

Will you please return the enclosed postal card to me by return mail if at all possible. Your cooperation will be most appreciated.

Sincerely yours,

Florence Fallgatter
Head of department

Encl.

Postal Card Enclosed in Letter to Teachers

Dear Miss Fallgatter:

(Check) ___Yes ___No I will assist with the research project you described.

Classes I plan to teach -
Homemaking I
   no. of classes
   total no. pupils, estimate
Homemaking II
   no. of classes
   total no. pupils, estimate

Length of homemaking class period - ______ minutes

________________________Signature
________________________School
APPENDIX B. SOURCES OF ITEMS TO TEST ABILITY TO APPLY GENERALIZATIONS


APPENDIX C. CRITERION MEASURES OF ACHIEVEMENT OF EDUCATIONAL OBJECTIVES BY PUPILS AND SUPPLEMENTARY MATERIALS
Homemaking I Test of Ability to Apply Generalizations
Test I-A
Homemaking I

Instructions

It is sometimes hard to know what to do in different situations. In homemaking classes we hope to learn what we need to know to answer questions that come up in our daily living. Some situations are described on the following pages. Read each one carefully. Record your answers on the answer sheet as you are directed for each question.

This sample problem shows one of the ways that you will be asked to mark your answers on the answer sheet.

Sample Problem

I. When Mrs. Smith became ill, the children needed to do extra work at home. The family decided on jobs for Jane, 11, and Joe, 14, but they did not decide on any job for Bessie, age 4. Should Bessie have a job?

Check (x) on the answer sheet whether Bessie should have a job.

A. Yes
B. No

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. It would help keep her out of mischief.
2. She is too small to do anything that would really help.
3. She would be doing her part even if it is small.

Now look at item number I. on the answer sheet. An (x) has been placed on the line before A., since Bessie should be given a job. An (x) has been placed on the line before 3. to show that reason number 3. is the correct reason for giving Bessie a job.

Now begin the test. Read each problem carefully and record your answers as directed. Do not write on this test. Mark your answers on the answer sheet.
II. Kathy, age 5, was playing with Lisa, an eight-year-old neighbor girl. Kathy's mother overheard Lisa telling Kathy that the moon was a light that God used to look down upon her to see if she were good or bad. Probably for what reason was Kathy's mother disturbed about what Lisa was telling Kathy?

Check (x) on the answer sheet the best probable reason(s) why Kathy's mother was disturbed.

1. She had neglected to teach Kathy about God.
2. She was afraid Kathy would tell these stories to someone else.
3. Kathy would get confused because she had been taught something else about the moon.
4. This might influence Kathy's attitudes in later life.
5. Kathy might think that God only watches you at night.

III. One of Barbara's big problems is her complexion. She is fourteen years old and often has pimples and blackheads. Barbara would like to know what to do to help clear up her complexion.

Check (x) on the answer sheet the three suggestions below that would be best for Barbara to try first.

1. Two or three times a day wash her face with soap.
2. Squeeze blackheads and pimples when they are ready to be removed.
3. Do not use cosmetics.
4. Drink lots of water.
5. Do not eat candy.
6. Cleanse her face daily with a good face cream.
7. Do not eat greasy or fat foods.
8. Keep hands away from face.
9. Eat a balanced diet.
10. Do not eat starchy foods.
11. Do nothing; her complexion will improve when she is older.
12. After she has cleaned her face, use alcohol to close the pores.

IV. Sandra and Donna found that they were slower than the others in class when they prepared foods. They thought that they should be allowed extra time since they were slow. Which reason(s) given below best explains why Sandra and Donna should be expected to finish preparing food in the same length of time allowed the others.

Check (x) on the answer sheet the reason(s) that best explains why all should be expected to finish in the amount of time allowed.

1. Slow girls have to get used to doing less than other people.
2. It would not be fair to the girls that get through in time to allow slow girls to take longer.
3. By using good management practices slow girls can learn to get their work done as soon as others.
4. Girls who are naturally fast would make fun of the slow girls.
Mary, age 5, is the only child of Mr. and Mrs. Dowen. Her parents feel that children should learn to obey their parents. Sometimes it takes shouting or a spanking to get her to do what she is told to do, but Mary eventually obeys. Mr. and Mrs. Dowen are worried about the way Mary has been acting with other children recently. She yells at them, bosses them, and gets angry if they do not do what she tells them to do. Why does Mary act this way?

Check (x) on the answer sheet the reason(s) that best explains why Mary acts as she does.

1. Mary thinks she is acting like a grown-up by being bossy.
2. The other children may not be nice to her.
3. She may be spoiled.
4. She may be a leader by nature.
5. If her parents treat her that way, she feels she has a right to take revenge on someone else.
6. Since her parents treat her this way, she believes this is the way to act.
7. All small children go through a stage of being bossy.

After Martha had purchased a skirt pattern, she found that it was two inches too short for her. What should she do to the pattern so that the skirt will be long enough for her?

Check (x) on the answer sheet the statement which best describes what Martha should do to the pattern.

1. Plan to have a smaller hem.
2. Make the pattern longer at the waistline.
3. Cut the top part of the skirt; then move the pattern down and cut the rest of the skirt.
4. Put a 1 inch pleat in the fabric before laying the pattern on.
5. With a tape measure and chalk, measure down 2 inches from the bottom of the pattern at several points; then connect these points with a line to make the new bottom edge.
6. Cut the pattern into two pieces, and add a 2-inch piece of paper between
7. Put a 2-inch piece of paper on the bottom of the pattern.
8. When cutting out the skirt add 1 inch at the top and 1 inch at the bottom.
VII. Mary's family has recently moved into a different house. Since this is the first time that Mary has had a bedroom of her own, she is especially eager to plan an attractive color scheme for her room. One window in the room faces south; the other faces west. Mary likes both of the groups of colors listed below. Which group of colors would be better for her bedroom?

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue</td>
<td>red</td>
</tr>
<tr>
<td>green</td>
<td>yellow</td>
</tr>
<tr>
<td>off-white</td>
<td>gray</td>
</tr>
<tr>
<td>gray</td>
<td>various shades and</td>
</tr>
<tr>
<td>various shades</td>
<td>brightnesses of these colors</td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>brightnesses of</td>
<td></td>
</tr>
<tr>
<td>these colors</td>
<td></td>
</tr>
</tbody>
</table>

Check (x) on the answer sheet the group of colors that would be better for her bedroom.

A. Group A  
B. Group B

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Since the room has a south and west window, it needs cool colors.
2. Colors that have blue in them tend to be cool.
3. Reds and yellows are better together than blues and greens.
4. Blues and greens go together better than reds and yellows.
5. Because of the light from the two windows, the room needs some gay colors.
6. This group of colors is more restful.
7. These colors will help the room feel warmer.
8. These colors are better for a girl's bedroom.
9. Too many colors should not be used in a bedroom, and this group has fewer colors.
10. These colors would help the room look brighter.
VIII. Sara and her mother have decided on the color of paint that they want to use for the living room walls. Since the ceiling of the room is quite low, they would like to use a shade of paint that would make it appear higher. Should they paint the ceiling with a lighter or darker shade of the wall color?

Check (x) on the answer sheet the shade that they should use to make the ceiling appear higher.

A. Lighter shade
B. Darker shade

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Light colors will look better with other colors than dark colors would.
2. Too many light colors would not look right because the room gets much light from several windows.
3. Since light colors tend to appear farther away, light colors will make the ceiling look higher.
4. Since dark colors make things look larger, a darker ceiling will look higher.

IX. Jane is going to plan, prepare, and serve Sunday morning breakfast to her family. Which of the following breakfasts would have the most pleasing combination of colors?

<table>
<thead>
<tr>
<th>Breakfast A</th>
<th>Breakfast B</th>
<th>Breakfast C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewed Prunes</td>
<td>Sliced Bananas</td>
<td>Tomato Juice</td>
</tr>
<tr>
<td>Waffles</td>
<td>Buttered Toast</td>
<td>Poached Egg on Oatmeal</td>
</tr>
<tr>
<td>Cocoa</td>
<td>Milk</td>
<td>Whole Wheat Toast</td>
</tr>
</tbody>
</table>

Check (x) on the answer sheet the breakfast that would be most pleasing in color.

A. Breakfast A
B. Breakfast B
C. Breakfast C

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Several colors that go well together help to make a meal attractive.
2. The golden brown toast contrasts with the yellow bananas.
3. The more different colors used, the more attractive is the meal.
4. The dark color of the prunes contrasts well with the shades of brown of the toast and cocoa.
5. The yellow of the bananas goes well with the color of oatmeal.
X. One evening Elsie asked her father to take her to visit her friend Nedra, who lived in another part of town. Her father asked, "Why don't you go to see Yvonne who lives across the street?" Elsie replied, "But, Father, I wouldn't talk to Yvonne about dates and things like that. She is lots of fun to play tennis with, but Nedra is the only one that I can talk to about the boys." What might make Elsie want to talk with Nedra?

Check (x) on the answer sheet the best probable reason(s) why Elsie wanted to talk with Nedra.

1. Elsie likes Nedra better than she does Yvonne.
2. Nedra is friendlier than Yvonne.
3. Teen-agers enjoy being with different friends for different reasons.
4. Nedra is more mature than Yvonne.
5. Some girls are better than others about not telling what you say.

XI. For a number of years Ruth has spent a lot of time reading. She enjoys reading and has few other hobbies. Now that Ruth is 14 years old, her mother thinks that she should have more interests. Her mother has persuaded Ruth to enroll in a dancing class and is encouraging her to join a hobby club at school. Why does Ruth's mother want her to learn to enjoy a number of activities?

Check (x) on the answer sheet the best probable reason(s) why Ruth's mother wants her to learn to enjoy more than one activity.

1. It is not good for Ruth to read too much.
2. Doing one thing all the time can become boring.
3. Ruth could fill her spare time with many things.
4. Ruth will have a chance to make more friends.
5. She can talk more intelligently to other people.
6. Ruth will know how to do more things when she gets older.
7. A hobby could lead to a successful career.
XII. When Jack was five years old, he went to visit his grandparents on the farm. He had visited them many times with his parents, but this was the first time that he had gone without them. When he returned home, he ran to his mother, held on to her tightly and said, "I don't ever want to go away again."

When he was nine years old, Jack visited his grandparents for several days. When he returned home, he ran into the backyard to call his dog. Then he yelled to his pal who lived next door. When he went into the house, he said, "I had a good time, but I'm glad to get home." Why did Jack act differently when he returned home from these two visits?

Check (x) on the answer sheet the reason(s) that best explains why Jack acted differently.

1. Jack's dogs and friends meant more to him as he became older.
2. As he became older, Jack became more adventurous.
3. Jack became interested in more things and had a better time.
4. He was less attached to his mother as he became older.
5. He had learned to adjust to his grandparents and to being on the farm.
6. As he became older, he expressed his feelings more like older children.
7. He may have been frightened by something on the farm when he was younger.

XIII. The Carlin family sometimes plays dominoes. One evening Mr. Carlin and John, 12, were playing partners against Mrs. Carlin and Shirley, age 9. Mr. Carlin became quite upset when he noticed John looking at Shirley's dominoes. He said they would quit playing if John cheated anymore. What was probably the reason that Mr. Carlin was disturbed when John looked at Shirley's dominoes?

Check (x) on the answer sheet the best probable reason(s) why Mr. Carlin was disturbed.

1. Mr. Carlin was afraid John might cheat when playing with other children, and they would not want to play with him.
2. Mr. Carlin thought that since Shirley was younger, she might follow John's example in cheating.
3. Mr. Carlin dislikes people who cheat.
4. Mr. Carlin was expecting John to act like an adult.
5. Since Mr. Carlin was tired, he became irritated when John looked at Shirley's dominoes.
6. Mr. Carlin wanted to win the game fair and square.
XIV. Doris and Amy made ham sandwiches for the class picnic. Both girls worked rapidly. Each arranged needed supplies near her. Their sandwiches were just alike, but they used different methods of putting them together. Doris made one sandwich at a time. As soon as she completed one, she started another. Amy laid out bread for about ten sandwiches. She carried out the same step for all ten sandwiches before she went on to the next step. For example, she spread melted butter on all of the bread, put on the ten slices of ham, and so on until the ten sandwiches were complete. Then she started making another ten. If both girls worked the same length of time, which one probably made more sandwiches?

Check (x) on the answer sheet who probably made more sandwiches.

A. Doris  
B. Amy  
C. Both probably made the same number of sandwiches.

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. It is more efficient to complete each sandwich before starting another one.  
2. Each girl tried to work rapidly.  
3. Rapid workers can produce the same number of sandwiches by either method.  
4. Repeating the same motion for a number of sandwiches makes a rhythm that saves time.  
5. Doris would not have to move around so much as Amy.  
6. Amy is probably just a naturally faster worker than Doris.

XV. Each weekend Mr. Brown has assigned certain tasks about the house and yard to each of his three sons. They are Jack, age 11; Harold, 8; and Mike, 6. Recently he asked them to decide how to divide the tasks among themselves. Who should decide how to divide the tasks?

Check (x) on the answer sheet the best answer(s).

A. The three children  
B. Jack  
C. The father

Check (x) on the answer sheet the reason(s) that best explains your answer(s).

1. The jobs are more apt to be well distributed.  
2. They will be more willing to do their tasks.  
3. They can each do the tasks they like best.  
4. Harold and Mike are too young to make such decisions.
XVI. Mary, who is in the ninth grade, is trying to decide how to arrange the furniture in her bedroom. She is going to choose one of the two arrangements pictured below. Study the pictures and decide which is better.

Check (x) on the answer sheet which is the better arrangement.

A. Arrangement A
B. Arrangement B

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Furniture is grouped according to use.
2. The way furniture is placed repeats the lines of the room.
3. All corners of the room are filled.
4. Arrangement makes room seem larger.
5. Furniture is more evenly spread around the room.
XVII. Myra and her mother have gone to town to look for new rugs for Myra's bedroom. Should the color of the rugs that they select be a lighter or darker shade than the ceiling and walls?

Check (x) on the answer sheet the choice that is better.

A. The rugs need to be lighter than ceiling and walls.
B. The rugs need to be darker than ceiling and walls.

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The floor will seem larger with the darker rugs.
2. The lighter rugs will attract less attention.
3. Darker rugs will tone down the rest of the room.
4. Darker rugs will give the room a feeling of being held in place.
5. The shade of the rugs should contrast with the walls and ceiling.

XVIII. Mary, who has been chosen as a school cheerleader, wants to have more pep and energy. She can get twenty minutes more sleep each morning by skipping breakfast. If Mary wants more pep, should she get this additional sleep and skip breakfast?

Check (x) on the answer sheet whether Mary should get this additional sleep and skip breakfast?

A. Yes
B. No

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. Extra sleep always gives a person more energy.
2. Mary can eat bigger servings of the food served at the other two meals to make up for not eating breakfast.
3. A good breakfast helps a person to keep from being tired.
4. What Mary eats will greatly affect the amount of pep she has.
5. The kinds of foods you usually eat for breakfast are better for you than the kinds you have at other meals.
XIX. Lois is making her first dress. She wants to choose a fabric that is easy to sew. Samples of four cotton fabrics are shown on the bulletin board. Which one of these fabrics would be easiest to sew?

Check (x) on the answer sheet which fabric would be easiest to sew.

A. Fabric A
B. Fabric B
C. Fabric C
D. Fabric D

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. This fabric will ravel less than the others.
2. Mistakes will not show so much on a darker color.
3. If she has to remove any stitching, a light color will be less apt to show needle holes.
4. A light-weight fabric is easier to handle than a heavy-weight fabric.
5. A heavier fabric stretches less than a lighter weight fabric.
6. A fabric that is not stiff is easier to handle than a stiff fabric.

XX. After the movie, Mildred invited several friends home for snacks. They had lots of fun raiding the ice box. The next morning Mildred's mother found things in a mess. When Mildred got up, her mother said, "You will have to stop inviting your friends in for snacks unless you clean up the kitchen afterward." Did her mother make a reasonable request?

Check (x) your answer on the answer sheet.

A. Yes
B. No

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. Mildred should have more respect for her mother.
2. Mildred should be more thoughtful of others.
3. Her mother should not expect her to clean up the kitchen each time she uses it.
4. Mildred needs to learn that you have to work for almost anything that you want.
5. Since Mildred is younger, she is more able to clean up the kitchen than her mother is.
6. Mildred should be permitted to have a good time while she can because she is only young once.
7. If Mildred leaves "messes" for her mother to clean up, her friends will think less of her.
Instructions
Read each problem carefully. Mark your answers on the answer sheet as you are directed for each question. Now begin the test.

I. Flora needs to decide what pattern size to get for the dress she is going to make in class, and Darlene has offered to take Flora's measurements.

A. Check (x) on the answer sheet the statement that best describes how Darlene should hold the tape measure.

1. Snug, but not tight
2. So that it feels comfortable
3. Tight, then add an inch to it
4. As tightly as the garment should fit
5. Loose enough to allow her to grow
6. Loose enough to allow for shrinkage

B. Check (x) on the answer sheet the statement that best describes how Darlene should take the hip measurement.

1. Six inches below the waist
2. At the fullest part of the hips
3. Seven inches below the waist
4. Lower in back than in front
5. In the middle of the hips
6. Parallel to the floor

II. Three main groups of fibers are used in making fabrics for our clothes. The qualities of fibers depend upon their origin. Groups of fibers are listed below at the right; qualities are at the left.

Place in each of the 8 blanks on the answer sheet the letter(s), A, B, or C, to show the group(s) of fibers high in the quality described.

<table>
<thead>
<tr>
<th>Qualities</th>
<th>Groups of Fibers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dry quickly</td>
<td>A. Plant fibers</td>
</tr>
<tr>
<td>2. Resist moths</td>
<td>B. Man-made synthetic</td>
</tr>
<tr>
<td>3. Easily wrinkle</td>
<td>C. Animal fibers and vicara</td>
</tr>
<tr>
<td>4. Absorb moisture easily</td>
<td></td>
</tr>
<tr>
<td>5. Resilient (returns to original shape after some time)</td>
<td></td>
</tr>
<tr>
<td>6. Melt when ironed at a high temperature</td>
<td></td>
</tr>
<tr>
<td>7. Elastic (returns to original shape immediately)</td>
<td></td>
</tr>
<tr>
<td>8. Can be washed in the machine</td>
<td></td>
</tr>
</tbody>
</table>
XXI. A person can appear to be larger or smaller if she wears certain colors and designs. What would be the effect of each of the 7 items given below? Use the following key to show the effect of the colors and designs listed.

**Key**  
A. Will tend to make a person look larger.  
B. Will tend to make a person look smaller.  
C. Will have little or no effect on the appearance as far as size is concerned.

Show what the effect would be by putting one of the letters, A, B, or C, on the answer sheet in each blank before the numbers representing the colors and designs below. (You will have a letter in each of the seven blanks when you are through with this part of the question.)

**Colors and Designs**

1. Fabrics with no design  
2. Bright colored garments  
3. Fabrics with large designs  
4. Light colored garments  
5. Garments of dull or grayed colors  
6. Dark colored garments  
7. Fabrics with small designs

Check (x) on the answer sheet the reasons that best explain these effects.

a. Only design makes a person look larger or smaller; colors have no effect on size.  
b. All designs make a figure seem larger.  
c. Dark colors make a person seem smaller because they do not attract attention.  
d. Often large designs call attention to size.  
e. Dull colors are not so noticeable; they stay in the background.  
f. Dull colors make the faults of a larger person more noticeable.
III. Georgia, age 14, is the youngest child in her family. When her parents introduce her to strangers and refer to her as their "baby," she becomes upset. Often she leaves a poor impression with people by saying, "Why don't you stop calling me a baby?" or "Do I look like a baby?" What should Georgia do?

Check (x) on the answer sheet what she should do.

A. Talk it over with her parents.
B. Pay no attention to the remarks.
C. Pretend that she is glad to be called the baby.
D. Behave as if she is growing up.
E. When her parents say such things, make a joke of it.

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. This would create a better understanding between Georgia and her parents.
2. A family squabble would be prevented.
3. Her parents are embarrassed by her remarks.
4. Probably this is one way her parents show their love for her.
5. If her friends find out she is called a baby, they may tease her.
6. She is too old to be called a baby in public.
7. She needs to prove to her parents that she is no longer a baby.

IV. At a reception honoring the golden wedding anniversary of her grandparents, Betty, 14, met Gloria, age 16. Gloria suggested that they go to a movie. When Betty asked her parents for permission to go, they refused. Then Betty stormed away from them saying, "I always have to tag along with you." Her father said, "I know you are disappointed, but do you have to act this way in front of everyone?" What was probably the reason for Betty's father being concerned about the way she showed her feelings?

Check (x) on the answer sheet the best probable reason(s) why Betty's father was concerned.

1. He realized that Betty had not learned that you should not show your feelings anywhere and anytime.
2. He knew that if Betty continued to act that way, she would not have many friends.
3. He was embarrassed by the way Betty acted in front of his relatives.
4. He was afraid people would think she was spoiled.
5. Betty was too old to act the way she did.
6. Betty would leave a bad impression with people who did not know her.
7. Betty's actions reflected on the family and the way she had been brought up.
V. Vera is 14 years old and Pamela is 7. One evening their mother asked Vera to see that Pamela went to bed while the parents drove the neighbors to meet a train. Vera went into the bedroom and started getting ready for bed. She called to Pamela several times, telling her to hurry. Pamela, who was playing with a doll, said, "I want to finish dressing my doll." When the parents returned a half hour later, Pamela still had not gone to bed. Why did Pamela act this way?

Check (x) on the answer sheet the statement(s) that best describes why Pamela did not go to bed.

1. Because they do not like to go to bed, most children Pamela's age will think of any excuse to stay up.
2. Children Pamela's age are very interested in dolls.
3. She did not want to obey her older sister.
4. Pamela wanted to see her parents.
5. She wanted to act grown-up.
6. She was spoiled.
7. Pamela was not sleepy.

VI. Four-year-old Jimmy plays with his sister, age 3, but has seldom played with any other children. During the few times Jimmy has been with a group of children, he either just watched the others or he played entirely by himself. Recently Raymond, age 4, and his parents have moved into the neighborhood. Jimmy has refused to play with Raymond. If you were Jimmy's older sister, how could you help him develop socially?

Check (x) on the answer sheet the best answer(s).

A. Offer Jimmy a reward to encourage him to play with other children.
B. Make him play with other children.
C. Leave him alone.
D. Explain to him why he should play with other children.
E. Give him more opportunities to play with other children.

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. If given time Jimmy will learn to play with others.
2. He needs to understand why it is important to play with other children.
3. Jimmy needs the experience of playing with children.
4. He should be stimulated to play with other children.
5. He needs help to act like a four-year-old.
VII. Beverley and her sister are selecting curtains for the windows in their bedroom. The windows are short and wide. What kind of curtain would look best? Choose from the window treatments shown below.

A. Curtain A  B. Curtain B  C. Curtain C  D. Curtain D

Check (x) on the answer sheet the kind of curtain that would be best.

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Diagonal lines make things seem higher.
2. It looks more like a bedroom window.
3. Covering part of the window makes it look smaller.
4. Covering entire bottom part of window makes window look longer.
5. It looks more like a girl's bedroom.
6. It does not make the window look so bare.
7. More light can get in.
8. Up and down lines make the window look as if it had more height.
VIII. Lou, Jennie, and Myra, who are good friends, live near each other. After school in the afternoon they usually stop at one of their homes for a snack consisting of fresh fruit, fruit juice, or fruit and milk. All of the girls want to have attractive figures. They don't want to get fat. They do not overeat at meals and often have meals that do not contain many fruits and vegetables. The girls are wondering if they should stop eating snacks after school. All agree that the snacks are fun. Should they continue to eat these snacks?

Check (x) on the answer sheet whether they should continue to eat these snacks.

A. Yes  
B. No

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. A wise distribution of foods among meals and snacks promotes good nutrition.
2. Eating between meals reduces a person's appetite at mealtime.
3. Eating these snacks will cause them to gain weight even though they include kinds of foods not eaten in generous amounts at mealtime.
4. Snacks help promote good health if they provide kinds of food not generously supplied by the three meals of the day.
5. Eating snacks is a bad habit.
6. Eating these snacks will keep them from overloading their stomachs at mealtime.

IX. Janet has found the same dress design in the Butterick and McCall's pattern books. If she were to get the same size in the same pattern type from the two companies, she might find that they fitted her differently. Why might they not fit alike?

Check (x) on the answer sheet the reason(s) that best explains why they might not fit alike.

1. The companies may allow a different amount of ease.
2. The measurements of one company may be more accurate than those of the other company.
3. The companies use different seam allowances.
4. The companies may use different sets of measurements as a basis for their patterns.
A group of Homemaking I girls invited their mothers to lunch at 12:10 p.m. They chose foods that could be prepared during their homemaking class from 10:00 to 11:00 a.m. One of Gloria's duties was to prepare the mixed green vegetable salad. By 10:15 she had cut up all of the vegetables for the salad. Salad dressing was to be served at the table. Which of the two plans described below should she use in completing the salad?

Check (x) on the answer sheet the better plan for her to use.

A. In order to save time for last-minute jobs, put the salad into the serving bowl and set it on the dining table ready to be served.
B. Put the salad into the refrigerator. Shortly before serving time set the bowl of salad on the dining table.

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Chopped raw vegetables hold their food value well when kept at room temperature.
2. It is efficient to complete one job before starting another.
3. If kept at room temperature, sliced or chopped vegetables may lose vitamins rapidly.
4. The flavors of the vegetables will blend together better if the salad is kept cold.

The games for the ninth-grade class picnic had been carefully planned by Mary, fifteen-year-old recreation chairman for the picnic. She had selected a variety of games that she thought the boys and girls would enjoy playing. When she called the group together to start the first game, Dan yelled, "Oh, who wants to play any of those girl games! Come on fellows, let's play baseball. There's a good spot right over there." Why did Dan act that way?

Check (x) on the answer sheet the reason(s) that best explains Dan's actions.

1. Dan did not know how to act; his manners were poor.
2. He had always had his way and was spoiled.
3. Dan wanted to attract attention.
4. He thought such games were for children.
5. For meanness boys like to break up a party.
6. Most boys are not as mature as girls at this age.
7. He was afraid he would not play the new games well, but he knew that he was a good baseball player.
8. Boys enjoy very active games that do not include girls.
Judy wants to make her room more attractive. She often invites her girl friends to go home with her and has talked with them about how she could improve the appearance of her room. Judy is on the girls' basketball team, plays softball, and enjoys many active sports. In fact, she likes sports better than many other kinds of activities. Judy thinks it will be fun to redecorate her room. Her furniture includes a Hollywood bed made by cutting down the head and foot boards from an old bed, a dressing table made from boxes, a chest of drawers, a straight chair, and a rocking chair. Which of the fabrics shown on the bulletin board should she choose for a bedspread and skirt for her dressing table?

Check (x) on the answer sheet the fabric(s) that would be best.

A. Taffeta
B. Dotted Swiss
C. Organdy
D. Plaid Gingham
E. Denim

On the answer sheet show why you chose the fabric(s) by putting the numbers of the reasons in the blank before the letter representing the fabric(s) you chose.

Reasons

1. It will dress up the room.
2. It will draw attention away from the furniture.
3. It seems more like her type of furniture.
4. It fits her personality.
5. It is pretty and frilly.
XIII. Helen's brother, Bob, has a number of framed pictures of horses that he wants to hang in his bedroom. He has asked Helen to help him decide how to arrange them on the walls. Four different arrangements are shown below. Which one(s) would be best?

A. Arrangement A  C. Arrangement C
B. Arrangement B  D. Arrangement D

On the answer sheet explain your choice by putting the numbers of the reasons listed below in the blank before the letter(s) representing your choice of arrangement(s).

Reasons
1. It repeats the lines of the bed.
2. It gives a well-balanced arrangement.
3. The arrangement is more unusual
4. Pictures fit the space well.
5. It makes the room look larger.
6. One's eyes follow the pictures easily.
7. It makes the ceiling seem higher.
8. Bed and pictures hold together as a unit.
XIV. While her mother did some shopping, Sue, age 14, stayed at home with her sister, Julie, age 8. While Julie was playing house, she dropped a cup and broke it. A little later when she was painting, she accidentally spilled all of her red paint on a picture she had almost finished. When this happened, Julie ran into the bedroom crying, "Everything happens to me." What should Sue do?

Check (x) on the answer sheet what Sue should do.

A. Sue should teach Julie to be careful and to try not to break or spill things.
B. Sue should explain to Julie that she should not get upset by such things because many things she will not like will happen all through life.
C. Sue should see if she could mend the broken cup and make the picture look all right.
D. Sue should interest Julie in joining her in a game that Julie likes and can play well.

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. Julie should be taught to be more careful with things.
2. Julie needs to have confidence in herself.
3. Children will feel much better and stop crying if you help them when they have problems.
4. Since Julie is going to have to face much harder problems later, she needs to learn that she cannot run into the bedroom crying every time something goes wrong.
5. Play helps children to forget their problems.
6. Julie is too young to work things out by herself.
XV. Betty, a high school freshman, is to prepare lunch for her younger sister and herself on Saturday. Betty's mother plans to serve the family the following foods for breakfast and dinner that day.

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange juice</td>
<td>Meat Patty</td>
</tr>
<tr>
<td>Oatmeal</td>
<td>Creamed Potatoes</td>
</tr>
<tr>
<td>Whole Wheat Toast</td>
<td>Buttered Green Beans</td>
</tr>
<tr>
<td>Milk</td>
<td>Bread</td>
</tr>
<tr>
<td></td>
<td>Butter Chocolate Pudding</td>
</tr>
<tr>
<td></td>
<td>Milk</td>
</tr>
</tbody>
</table>

Which of the lunches shown below would be best for Betty and her sister?

<table>
<thead>
<tr>
<th>Lunch A</th>
<th>Lunch B</th>
<th>Lunch C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese Sandwich</td>
<td>Peanut Butter Sandwich</td>
<td>Cream of Pea Soup</td>
</tr>
<tr>
<td>Sliced Tomatoes</td>
<td>Potato Salad</td>
<td>Crackers</td>
</tr>
<tr>
<td>Raw Carrot Sticks</td>
<td>Pickles</td>
<td>Butter</td>
</tr>
<tr>
<td>Banana Cookie</td>
<td>Butterscotch Pudding</td>
<td>Baked Apple</td>
</tr>
<tr>
<td>Milk</td>
<td>Lemonade</td>
<td>Milk</td>
</tr>
</tbody>
</table>

Check (x) on the answer sheet the lunch that would be best for them.

A. Lunch A  
B. Lunch B  
C. Lunch C  

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. A serving of peanut butter is equal in protein to a serving of meat.
2. Milk for lunch helps them get the quart of milk they need each day.
3. They need the tomatoes in order to have at least one serving of vitamin C-rich fruits or vegetables that day.
4. A dark-green or deep-yellow vegetable, important for vitamin A, should be eaten at least every other day.
5. Hot soup provides needed heat and energy.
6. Potatoes are classified as a vitamin C-rich vegetable.
7. A serving of cheese is equal in protein to a serving of meat.
Homemaking II Test of Ability to Apply Generalizations
Test II-C
Homemaking II

Instructions

It is sometimes hard to know what to do in different situations. In homemaking classes we hope to learn what we need to know to answer questions that come up in our daily living. Some situations are described on the following pages. Read each one carefully. Record your answers on the answer sheet as you are directed for each question.

This sample problem shows one of the ways that you will be asked to mark your answers on the answer sheet.

Sample Problem

I. Evelyn is selecting a skirt pattern, and her hips measure 34 inches. The pattern that she has selected is available only in sizes 33 and 35. Which size should she buy?

Check (x) on the answer sheet the size that would be better for her to buy.

A. Size 33
B. Size 35

Check (x) on the answer sheet the reason(s) for your choice.

1. It is easier to reduce a pattern piece than to enlarge it.
2. It is easier to enlarge a pattern piece than to reduce it.
3. Evelyn might still be growing, and she would need the extra inch.

Now look at item number I. on the answer sheet. An (x) has been placed on the line before B. since size 35 would be the better choice. An (x) has been placed on the line before 1. to show that reason number 1. is the correct reason for choosing size 35.

Now begin the test. Read each problem carefully and record your answers as directed. Do not write on this test. Mark your answers on the answer sheet.
II. Darlene is laying the pattern pieces on the cotton fabric she is using to make a sleeveless blouse. She has discovered that she does not have enough fabric to lay the pattern on exactly as the pattern guide suggests. She would have enough material if she placed the pattern front off-grain. What would be the effect on the finished blouse if the front were off-grain?

Check (x) on the answer sheet the statement(s) that describes what would happen if she placed the pattern front off-grain?

1. The blouse pieces may stretch out of shape.
2. The blouse will not iron as well.
3. The garment may not fit properly.
4. The blouse will not hang in the way the designer intended.
5. The fabric will ravel more easily.
6. The blouse pieces will not fit together.

III. The Barkers are planning to paint the outside of their house. Mr. Barker has asked all of the family to stay at home Monday evening so that they can decide on what color of paint to use. John, 17, and Deborah, 15, said that they had planned to be away from home that evening. Their father urged them to change their plans and to be with the family for this discussion. What might have made Mr. Barker want John and Deborah to help make the decision?

Check (x) on the answer sheet the best probable reason(s) for Mr. Barker wanting John and Deborah to help make the decision.

1. The two teen-agers will feel that they have some responsibility.
2. If each helps to make the decision, everyone will probably be better satisfied.
3. This experience will teach them how to make decisions.
4. It is good for the family to be together occasionally.
5. This experience will help the family feel closer together.
6. Getting everyone's ideas is an unselfish way to make decisions.
7. The two teen-agers would learn to cooperate.
IV. Shown below is the label which is attached to a cotton dress that Mary may buy. What can Mary expect of this dress according to this label?

![Label Image]

GUARANTEED WASHABLE
Color Fast
Shrinkage Controlled
Crease Resistant
Fade Proof

Check (x) on the answer sheet the statements which describe what Mary can expect.

1. After it is washed, no ironing is necessary.
2. Perspiration will not cause it to fade.
3. It will not shrink.
4. It can be washed in a washing machine.
5. Light will not cause color to fade.
6. It will resist wrinkles during wear.
7. When it is washed, color will not bleed.
8. It will shrink less than 2 per cent.

V. One Saturday when Janet was using the upright vacuum cleaner, she noticed that the cleaner was not cleaning the rug as well as it should. Her mother suggested that the cleaner would work better if the bag, which was not a disposable one, were emptied. Janet found that the bag was about 3/4 full of dirt. Janet emptied the bag, but she told her mother that the amount of dirt in the bag would not affect how well the cleaner would work. Was Janet or her mother right about whether emptying the bag would affect the cleaning power of the cleaner?

Check (x) on the answer sheet who was right.

A. Janet
B. Janet's mother

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. The bag will not become clogged with dirt if emptied frequently.
2. The cleaner works just as well when the bag is nearly full of dirt as when it is empty.
3. If the bag is emptied before it is nearly full, the cleaner will pick up more dirt.
4. Time will be saved by emptying the bag only when it is nearly full.
VI. Mary is going to prepare deviled eggs for a picnic lunch. She plans to hard-cook the eggs before lunch and to devil them right after lunch. Which of the following procedures should she use?

Check (x) on the answer sheet all of the procedures she should use.

A. Put the eggs into boiling water and boil five minutes.
B. Put the eggs into boiling water and simmer for fifteen minutes.
C. When the cooking time is up, set the pan off the heat; let the eggs stand in the water to cool until she is ready to use them.
D. When the cooking time is up, chill eggs quickly in cold running water and let stand in cold water until she is ready to use them.

Check (x) on the answer sheet the reasons that best explain your choice.

1. Quick cooling will prevent the eggs from having a green color around the yolk.
2. To preserve food value, eggs should be cooked quickly at boiling temperature.
3. Egg protein will be more tender if cooked at a low temperature.
4. Gradual cooling keeps the shells from cracking.
5. Eggs can be shelled more easily if they have been cooked slowly.
6. Quick chilling makes the eggs hold their shape better after peeling.

VII. Elizabeth had invited some of her friends over for supper. She wanted to serve them the very best hamburgers that could be made. The butcher offered to remove excess fat from whatever cut of meat she chose. Sirloin steak was 95¢ per pound; chuck steak was 55¢ per pound. She chose sirloin steak to be ground for hamburger meat. Did she make a wise choice?

Check (x) on the answer sheet whether she made a wise choice.

A. Yes
B. No

Check (x) on the answer sheet the reason(s) that best explains your answer.

1. Ground sirloin has a better flavor than ground chuck.
2. Ground chuck makes just as good hamburgers as ground sirloin.
3. The price of meat is a fairly good indication of its quality and usefulness.
4. Sirloin steak is tenderer than chuck.
5. Food money can be saved by buying a quality good enough but not better than is needed for the hamburgers.
6. The food value of ground chuck is superior to the food value of ground sirloin.
VIII. On the day before her class meeting Karen, age 15, suddenly remembered that she had been appointed chairman of a committee to suggest places where the class could have its annual picnic. She had not called a committee meeting. Since she felt it would not make much difference to the others on the committee, she selected the places that she thought were best and made the report to the class. Was Karen correct in thinking that it would not make much difference to the others?

Check (x) on the answer sheet the better answer.

A. Yes
B. No

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The chairman of a committee is expected to give most of the suggestions anyway.
2. Others will think that Karen wants to do everything herself.
3. Others will not want to be on a committee with her in the future.
4. Taking things into her own hands will cause Karen to lose friends.
5. Karen probably knew which picnic places the class would like.
6. Others may have ideas that are different from hers.

IX. Hilda and her father want to get her mother a lamp for her birthday. The lamp is to go on a table by a chair in which her mother sits to read. They are considering the two lamps shown at the right. Both have a three-way switch and use the same size light bulb. Lamp A costs $10.50; lamp B costs $14.95. Which should they buy?

Check (x) on the answer sheet the lamp that they should buy.

A. Lamp A
B. Lamp B

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The taller lamp will spread light farther.
2. Lower lamps are more attractive for use on tables.
3. More expensive lamps usually last longer than cheaper ones.
4. The proportion between the shade and base is better.
X. Pamela planned the rearrangement of furniture in their living room. She tried to use the principles of room arrangement that she had studied in homemaking class. She planned the arrangement shown below for one end of the room. Is the arrangement good or poor?

Check (x) on the answer sheet whether this is good or poor.

A. Good
B. Poor

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Having a table and lamp at each end of the sofa makes this arrangement well balanced.
2. The arrangement creates a restful effect.
3. The furnishings are in good proportion to each other.
4. The table and accessories on the left seem too light to balance those on the right.
5. Tables used at each end of a sofa should be the same size.
6. The table and lamp on the left are too small to harmonize with the ones at the other end.
XI. Sue and her sister, May, are discussing plans for redecorating their bedroom. The room has two large windows on the south. Sue wants to paint the walls a soft yellow, her favorite color. May thinks that grayed-blue would be better. Which color would be better? (Samples of the two colors are shown on the bulletin board.)

Check (x) on the answer sheet the color that would be better.

A. Grayed-blue  
B. Soft yellow

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Grayed-blue is a better color for a bedroom.  
2. If grayed-blue is used, the room will seem cool.  
3. The room will have a more cheerful atmosphere.  
4. If yellow is used, the room will seem lighter.

XII. Sarah is going to buy a new party dress. Downtown she has found two dresses that she likes. One is yellow, and the other is rose colored. Sarah knows that she has a sallow complexion (contains yellow), and she wants to choose the color which would be better for her. Which of the two colors shown on the bulletin board would be the better choice for her?

Check (x) on the answer sheet the color that would be better for Sarah.

A. Rose  
B. Yellow

Check (x) on the answer sheet the reason(s) below that explains your choice.

1. The pink in her skin will be emphasized by the rose.  
2. People with sallow complexions look better in darker colors.  
3. Darker colors will bring out the color of her complexion.  
4. A person with a sallow complexion looks better in lighter colors.  
5. Yellow will avoid stressing the rose in her complexion.  
6. Her complexion will be brightened by the yellow.
XIII. Karen's hair always looks dull and coarse and is very hard to manage although she keeps it clean and brushes it often. She has heard that soft and lustrous hair is one characteristic of good nutrition. She has decided to inspect her meals to see whether they conform to standards of good nutrition. Which of the day's meals shown below should she eat in order to have more attractive hair in so far as it can be influenced through her nutrition?

Plan A. (Meals for a day)

Breakfast:
- Stewed Prunes
- Cream of Wheat
- Nut Muffins
- Butter
- Cocoa

Lunch:
- Green String Beans
- Mashed Potatoes
- Whole Wheat Bread
- Butter
- Chocolate Cake
- Milk

Dinner:
- Macaroni and Cheese
- Buttered Peas
- Apple-Celery Salad
- Enriched White Bread
- Butter
- Cream Pie
- Cocoa

Plan B. (Meals for a day)

Breakfast:
- Orange Juice
- Scrambled Egg
- Whole Wheat Toast
- Butter
- Milk

Lunch:
- Cream of Pea Soup
- Crackers
- Butter
- Baked Apple Cookie
- Milk

Dinner:
- Broiled Hamburger Patties
- Baked Potato
- Head Lettuce Salad
- Whole Wheat Bread
- Butter
- Canned Peaches
- Milk

Check (x) on the answer sheet the better day's meals for Karen.

A. Plan A.
B. Plan B.

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. These meals provide more vitamin C than the other set of meals.
2. Foods which provide heat and energy promote the growth of attractive hair.
3. An adequate supply of proteins aids in having soft, lustrous hair.
4. Prunes are especially rich in iron.
5. Foods supplying adequate amounts of minerals are needed for attractive hair.
6. A generous supply of carbohydrates is essential for attractive, lustrous hair.
7. These meals provide more solid foods for stimulating healthy growth of hair.
XIV. Jane's mother is planning a luncheon for several guests. She is considering the three menus shown below. Jane has suggested that her mother choose the menu with the best combinations of colors, textures, and flavors.

<table>
<thead>
<tr>
<th>Menu A</th>
<th>Menu B</th>
<th>Menu C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat Loaf</td>
<td>Tuna and Noodle</td>
<td>Pork Chops</td>
</tr>
<tr>
<td>Baked Potato</td>
<td>Casserole with Peas</td>
<td>French Fried Potatoes</td>
</tr>
<tr>
<td>Creamed Corn</td>
<td>Lettuce-Tomato Salad</td>
<td>Buttered Cabbage</td>
</tr>
<tr>
<td>Cottage Cheese and Peach salad</td>
<td>Biscuits Butter Lime Gelatin-Pear Salad</td>
<td>Fresh Fruit Cup Muffins Butter</td>
</tr>
<tr>
<td>Cloverleaf Rolls</td>
<td>Butter</td>
<td>Fresh Fruit Cup Muffins Butter</td>
</tr>
<tr>
<td>Butter</td>
<td>Cookies</td>
<td>Apple Crisp</td>
</tr>
<tr>
<td>Yellow Cake with Lemon Custard Sauce</td>
<td>Milk</td>
<td>Milk</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Check (x) on the answer sheet the menu which has the best combinations of colors, textures, and flavors.

A. Menu A  
B. Menu B  
C. Menu C

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The meal has some soft and some crisp foods.
2. Using foods that are alike in texture helps to make the meal enjoyable.
3. The green gelatin salad provides color contrast with the pork chops and potatoes.
4. A variety of colors that go well together makes the meal attractive.
5. The flavors of the foods blend well together.
6. The color, yellow, is emphasized throughout the meal.
XV. Virginia, age 15, was invited by Mildred, age 18, to go with her and her friends to a movie in a nearby town. Mildred's group usually stayed out very late. When Virginia asked her mother about going, her mother felt that she should make her own decision. After thinking it over, Virginia decided to visit one of her own friends instead of going with Mildred. What probably best explains why Virginia did not accept Mildred's invitation?

Check (x) on the answer sheet the reason(s) that probably best explains why Virginia turned down Mildred's invitation.

1. Virginia realized that her ideas of how to act might be influenced by this group.
2. Her mother's faith in her encouraged her to keep her own friends.
3. Virginia knew that what she and her own friends would do would be more fun.
4. She realized that she might lose her friends.
5. Virginia did not want people to talk about her.
6. Since Mildred's friends were older, Virginia knew she would feel out of place.

XVI. Helen and Nan are in the tenth grade. Nan is very timid and feels that she cannot do things as well as other girls. Her grades on tests and individual projects are above average. She hardly ever takes an active part in school parties or other social affairs. Both girls belong to Future Homemakers of America, but Nan seldom offers to assist with chapter activities. Helen feels that Nan acts more like an eighth grader than like a sophomore in high school. Can Nan become more active and friendly like the other girls her own age?

Check (x) on the answer sheet the best answer.

1. No, it is too late for her disposition to be changed.
2. Yes, if she works toward being more friendly with others.
3. Yes, if other people make her take more part in activities.
4. No, she is naturally timid.
5. Yes, if she gains more self-confidence.
XVII. Janis, who is a school cheer leader, wants to have plenty of pep and energy. She tries to eat a good diet each day. Recently she saw an advertisement for a kind of vitamin pill which, according to the advertisement, gives a person extra pep and energy. Should Janis start taking vitamin pills in order to have extra energy?

Check (x) your answer on the answer sheet.

A. Yes
B. No

Check (x) on the answer sheet the reason(s) which best explains your answer.

1. Taking vitamin pills will provide additional pep and energy even if Janis is eating an adequate diet.
2. Extra amounts of vitamins above those needed for the use and store of the body will provide special benefits in the form of extra pep and energy.
3. Vitamin pills will only help the person who has a real deficiency.
4. Although vitamins are essential, they have little effect on the amount of energy a person has.
5. Taking more vitamins than the amount needed for body use and stores will probably provide no additional vigor.

XVIII. Edna, age 15, has noticed that her parents do not seem to approve of her friend, Margaret, 16. Although the two friends spend much time together, Edna's parents have not said anything about their being together. Edna has decided to talk with her parents, to explain why she likes Margaret, and to ask them how they really feel about Margaret and why. Has Edna made a wise decision?

Check (x) the better answer on the answer sheet.

A. No
B. Yes

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Edna has a right to know why her parents feel the way they do.
2. This will give Edna a chance to prove to her parents that Margaret is all right.
3. If she learns why her parents disapprove, Edna may be able to help Margaret.
4. Edna is old enough to choose her own friends.
5. Parents should let teen-agers choose their own friends.
6. If each family member knows how the other feels, often disagreements can be worked out.
XIX. Janice has selected this pattern that is shown at the right. Now she needs to choose between two fabrics shown on the bulletin board. Both are about the same price. Which one of the two would be most suitable for her pattern?

Check (x) on the answer sheet the more suitable fabric for her pattern.

A. Wool jersey
B. Corduroy

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The texture of the fabric does not compete with the lines made by the tucks.
2. Corduroy is a more durable fabric.
3. Since bulky fabrics stand away from the body, they are best for full skirts.
4. The vertical lines of the tucks emphasize the vertical lines of the corduroy.
5. Fabric B will hold its shape better than fabric A.

XX. In homemaking class Alice is to demonstrate how to use the iron correctly when ironing and pressing. She is going to explain when it is better to iron (a gliding motion of the iron) and when it is better to press (up-and-down motion of the iron). Ironing and pressing are used when making garments as well as when ironing or pressing clothes. Would Alice tell the class to iron or to press to get each of the results listed below?

On the answer sheet write a P in every blank where the result is produced by pressing. Write an I in every blank where the result is produced by ironing. Both pressing and ironing may produce some of the results. (DO NOT mark your answer with an X.)

1. Smooth the fabric.
2. Keep original texture of fabric.
3. Shrink out the fullness.
4. Shape points of a dart.
5. Keep the fabric grain lines.
6. Square up grain lines.
7. Develop luster.
XXI. When Ruth visited her older sister who has a job in another town, they rearranged the furniture in her sister's apartment. The apartment has a living room, kitchen, and bath. The apartment is shown below. Which arrangement of furniture was better?

A. Before

B. After

Check (x) on the answer sheet which is the better arrangement.

A. Before
B. After

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The living area is separated from the dining area.
2. Pieces of furniture are placed near where they will be used.
3. Paths from door to door are clear of furniture.
4. Placing furniture parallel to walls gives a more orderly appearance.
5. The furniture is arranged better for conversation.
6. Having no furniture in the center of the room makes the room seem larger.
7. The room seems less crowded.
8. The room seems cozier with some of the furniture at an angle.
Instructions

Read each problem carefully. Mark your answers on the answer sheet as you are directed for each question. Now begin the test.

I. Lucy, Donna, Kay, and Rita have allowed fifteen minutes of the class period to clean up after they eat the meal that they prepare. They have made the following plan for dividing the clean-up duties. Preparation dishes were washed, dried, and put away before they ate the meal.

**Duties for Clean-up Period (15 minutes)**

<table>
<thead>
<tr>
<th>Lucy</th>
<th>Donna</th>
<th>Kay</th>
<th>Rita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take glasses and silver to sink</td>
<td>Get dishwasher ready</td>
<td>Take plates and serving dishes to sink</td>
<td>Put away napkins and placemats</td>
</tr>
<tr>
<td>Wipe off all work surfaces</td>
<td>Wash dishes</td>
<td>Put dishes away</td>
<td>Dry dishes</td>
</tr>
</tbody>
</table>

If they are trying to be good managers of time and energy, is their plan good or poor?

Check (x) on the answer sheet whether their plan is good or poor.

A. Good
B. Poor

Check (x) on the answer sheet the statements below that best explain your answer.

1. Duties that need to be carried out at the same time are divided among all four girls.
2. Duties are divided so that each girl has one early and one late clean-up duty.
3. Some girls are just naturally slow and will not be able to do as much as others.
4. Duties are equally divided by giving early clean-up duties to some of the girls and late clean-up duties to the others.
5. Not more than one girl is responsible for any one clean-up duty.
6. Time can be saved by having several girls help with the same duty such as wiping off work surfaces, washing dishes, or putting dishes away.
7. The order in which some of the duties are listed is opposite to the order in which the duties would need to be carried out.
II. Several Homemaking II girls were preparing a bulletin board that would show the kinds of dresses which would be attractive or unattractive for girls with different figure types. They chose the illustrations shown at the right for the short, plump figure type. They knew that one would be unattractive for a girl with this figure type. Which dress should be labeled "more attractive for a short, plump girl"?

Check (x) on the answer sheet the better choice for this figure type.

A. Figure A  
B. Figure B

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The straight skirt is more slenderizing than a skirt with a big pleat.  
2. Dress B will conceal her stomach better than dress A.  
3. She would get a longer look with a dropped waistline.  
4. The figure is slenderized by the pleat which tapers toward the waistline.  
5. Vertical lines are slenderizing to the figure.  
6. Less attention is called to her waistline by a small belt than by a fitted waistline.

III. When Nora cooked some fresh greens for lunch, she added a pinch of baking soda to the small amount of water in which they were cooked. She cooked the greens in a covered pan for a short time. What results could be expected?

Check (x) on the answer sheet the results that Nora could expect.

1. The greens will turn brown as they cook.  
2. The greens will keep their green color.  
3. A maximum amount of vitamin C will be preserved during cooking.  
4. Some vitamin C will be lost during the cooking.  
5. The greens may become somewhat mushy in texture.
IV. Marjorie and Lynda live near each other in the country. Both families have about the same income. Marjorie's family lives in a very attractive house. They recently repainted all of the walls and got a television set. They do not have running water in their house. Lynda's family lives in a comfortable house although it is not beautiful. They have recently had running water installed. Which family is using its money more wisely?

Check (x) on the answer sheet the best answer.

A. Both families
B. Lynda's family
C. Marjorie's family

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Families need to consider what other people will think about what they have in their houses.
2. Every family needs to have pleasure.
3. Families differ in the things that they want.
4. It is more important for a family to have running water than to have television.
5. Life is more interesting if one lives in attractive surroundings.

V. Marjorie and her mother are planning to make new draperies for their living room. The room is small with walls painted a soft, medium blue-green. The rug is grey. They have found two drapery fabrics which they like. One is blue-green; the other is rose-red. Both colors are attractive with the furnishings in the room. Which of the two colors shown on the bulletin board would make the room seem larger?

Check (x) on the answer sheet the color that would make the room seem larger

A. Rose-red
B. Blue-green

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Contrasting color will make the room more interesting.
2. The room would look brighter.
3. Since it will blend in with walls and rug, the room will look larger.
4. The room will seem larger because of the brighter color.
5. A room will seem more spacious with a close-harmony color scheme.
6. A room is more attractive if draperies are the same color as walls.
VI. Lucy, Donna, Kay, and Rita are going to use twenty-five minutes of a class period to prepare the following menu.

<table>
<thead>
<tr>
<th>Minute Steak</th>
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<tbody>
<tr>
<td>Pan Fried Potatoes</td>
</tr>
<tr>
<td>Green Lima Beans</td>
</tr>
<tr>
<td>Lettuce Salad</td>
</tr>
<tr>
<td>Nutbread</td>
</tr>
<tr>
<td>Butter</td>
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<tr>
<td>Cherry Cobbler</td>
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<tr>
<td>Milk</td>
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</tbody>
</table>

They have worked out the following plan for dividing the food preparation duties.

**Preparation Period (25 minutes)**

<table>
<thead>
<tr>
<th>Lucy</th>
<th>Donna</th>
<th>Kay</th>
<th>Rita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes</td>
<td>Nutbread (Use mix)</td>
<td>Prepare salad</td>
<td>Cherry Cobbler</td>
</tr>
<tr>
<td>Peel</td>
<td>Mix</td>
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<tr>
<td>Fry</td>
<td>Bake</td>
<td>Cook steak</td>
<td>Bake</td>
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<tr>
<td>Wash preparation dishes</td>
<td>Dry preparation dishes</td>
<td>Put preparation dishes</td>
<td>Set the table</td>
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Check (x) on the answer sheet the following statements which best explain why their plan is good.

1. Time and energy are saved if soiled dishes are washed immediately after using.
2. Minute steak needs to cook about twenty-five minutes.
3. If more than one girl helps prepare a food, time can be saved.
4. Foods that do not require constant watching leave time for other preparation.
5. Each girl's duties require about the same amount of time.
6. It takes longer to cook the frozen beans than to peel and fry the potatoes.
7. Not more than one girl is responsible for preparing any one food.
8. A salad is always prepared before the meat.
9. Jobs have been combined in logical order so that each girl will be busy but not rushed.
VII. There is enough money in the homemaking department budget for the Homemaking II class to make one improvement in the living area. They are trying to decide how to improve the color combination. The colors in the living area now are:

- Wall - light gray
- Rug - light green
- Sofa - light gray
- Two arm chairs - dull green print
- One arm chair - bright red
- Pillows on sofa - several bright colors

Only one improvement can be made this year. The girls have made the following suggestions. Which one is best?

Check (x) on the answer sheet the one improvement that would be best.

A. Cover the red chair in dusty rose.
B. Cover the two arm chairs in bright red.
C. Paint the walls light green.
D. Cover the sofa in a light, rose-colored fabric.
E. Cover the dull green chairs in bright green.

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. There is too much gray in the room.
2. The room will seem lighter if the walls are painted light green.
3. Bright colors need to be used in small amounts.
4. More bright colors are needed in the room for accents.
5. Equal amounts of bright and dull colors should be used.
6. The same color should be used on all of the chairs.

VIII. Johnnie, age 5, needs another pair of summer shorts. Dora went shopping and found two fabrics. She and her mother had discussed two points to remember. The fabric should be durable because his playclothes need to wear well. The fabric should not show soil easily. Which of the two fabrics shown on the bulletin board would be better for the shorts?

Check (x) on the answer sheet the fabric that would be better.

A. Fabric A
B. Fabric B

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Since plain woven fabrics can have more yarns per square inch, they will be stronger than twill woven fabrics.
2. Twill woven fabrics are stronger than plain woven fabrics because they can have more yarns per square inch.
3. Fabrics of solid color do not show soil as easily as figured fabrics.
4. The figured fabric A will show soil less.
5. Since B is heavier and sturdier, it is more durable than A.
IX. Fern, age 16, has several favorite programs which are on television during the early evening hours. Her brother, Ralph, 12, and the twins, Bob and Betty, age 9, always want to watch programs that do not interest Fern at all. Their mother has suggested that the children work out a plan so that each child gets to watch his favorite programs on certain evenings. Fern agrees that taking turns would be fair. She feels that since she is the oldest, she should work out the plan. Who should make the plan?

Check (x) on the answer sheet who should work out the plan.

A. Fern
B. The parents and the four children
C. The four children
D. The parents

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. A fairer plan would probably be worked out.
2. Since the parents bought the TV set, they are responsible.
3. Interests become more important as a person gets older.
4. In a family younger children are just as important as older ones.
5. A teen-ager needs to learn that she cannot have her own way all of the time.
6. Ralph and the twins are capable of helping to make the plan.
7. The children will follow the plan better.
8. Fern has had more experience in planning.
9. The plan will be more satisfactory to the children.

X. A plain seam may be finished in the six ways shown here.

1. Raw edge
2. Each raw edge turned under and stitched
3. Pinked ¼ inch from seamline
4. Raw edges overcast
5. Selvage
6. Raw edges stitched together

Which of these six seam finishes would be best for each kind of fabric listed below?

On the answer sheet place the number of the seam finish in the blank before the letter representing each kind of seam. A seam finish may be used more than once. (All of the blanks before the letters should have a number in them when you are through with this question.)

**Description of Seams**

A. Straight side seams of gathered skirt of firm dress-weight fabric.
B. Seams for fabrics that do not ravel or will not be washed often or hard.
C. Light-weight fabric that ravel and will not press-mark.
D. Closely woven wash fabrics or fabrics to be dry cleaned only.
E. Seams of skirt made of thick fabric that ravel easily.
F. Seams at armhole and waistline when firm fabric is used.
XI. Ruth and her mother are selecting new curtains for their living room. The room is furnished in a comfortable, informal, cozy manner. The furniture includes several antique Early American pieces such as the slat-back rush bottom chair sketched at the right. Which of the three kinds of curtains shown below would be best?

Check (x) on the answer sheet the window treatment that would be best.

A. Window treatment A
B. Window treatment B
C. Window treatment C

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. The room will look more modern with this style.
2. This style looks more like a living room curtain.
3. Curtains with simple lines will not compete with the furniture for attention.
4. Because it is plain, it will match the chair.
5. Since this style is informal, it fits in with the feeling of the room.
XII. Anne, age 16, felt that she was old enough to make her own decisions. She talked with her parents about this question. Several nights later Anne was going to the movie with some friends. Her parents agreed that she could decide when she should get home. Anne stayed out extremely late. The next day her parents said that for awhile she would not be permitted to make her own decision about when to get home at night. How should Anne feel about her parents' not permitting her to make her own decision for awhile?

Check (x) on the answer sheet the statement(s) that best explains how Anne should feel.

A. Her parents acted too hastily.
B. Her parents were wise in removing the decision-making privilege for awhile.
C. Her parents could be expected to take away this decision-making privilege for awhile.
D. Her parents were wrong in doing what they did.
E. Anne was glad that her parents cared what she did.
F. Anne was ashamed of herself for not making a better decision.

Check (x) on the answer sheet the reason(s) that best explains your choice.

1. Anne showed that she was not mature enough to make this decision.
2. A feeling of responsibility has to be learned.
3. Anne is not old enough to know what is best for her.
4. She took undue advantage of the chance to make her own choice.
5. When a girl is sixteen, she is old enough to make her own decisions.
Illustrative Materials Used with Tests of Ability to Apply Generalizations

Test I-A. - For item XIX samples of four fabrics include:
  fabric A, denim of a dark value with no design;
  fabric B, poplin of a dark value with no design;
  fabric C, poplin of a light value with no design;
  and fabric D, polished cotton.

Test I-B. - For item XII the fabrics illustrated are A. taffeta,
  B. dotted swiss, C. organdy, D. plaid gingham, and
  E. denim.

Test II-C. - For item XI the two colors illustrated are
  A. grayed-blue and B. soft yellow. For item XII
  the samples of colors are A. rose and B. yellow.
  For item XIX the samples of fabrics are A. wool
  jersey and B. corduroy. Both fabrics are of the
  same color with no design.

Test II-E. - For item V the two colors illustrated are A.
  rose-red and B. blue-green. For item VIII the
two samples of fabrics are A. cotton twill fabric
of a striped design and B. Indianhead of a dark
value with no design.
Answer Sheets for Tests of Ability to Apply Generalizations Containing Keys for Scoring
Be sure to mark your answers in the spaces that correspond to the answers and reasons you selected. Mark with an (x) except where you are told to use some other symbol.

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<th>X. Reasons</th>
<th>XV. Answer</th>
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**I. Answer**

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**II. Fiber Group**

(Place A, B, or C in each blank)

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**IV. Reasons**

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**V. Answer**

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**VI. Answer**

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**VII. Curtain**

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**X. Answer**

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**XI. Reasons**

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**XIV. Answer**

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**XVI. Lunch**

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**XX. Curtain**

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Be sure to mark your answers in the spaces that correspond to the answers and reasons you selected. Mark with an (x) except where you are told to use another symbol.

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Be sure to mark your answers in the spaces that correspond to the answers and reasons you selected. Mark with an (x) except where you are told to use another symbol.

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<td>x B.</td>
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<td>x B.</td>
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<tr>
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<th>X. Seam finish</th>
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<tbody>
<tr>
<td>x 1.</td>
<td>x A.</td>
<td>1 or 3 or 5 A.</td>
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<tr>
<td>x 2.</td>
<td>x B.</td>
<td>1/2 B.</td>
</tr>
<tr>
<td>x 3.</td>
<td>x C.</td>
<td>1 or 3 D.</td>
</tr>
<tr>
<td>x 4.</td>
<td>x D.</td>
<td>4 or 6 E.</td>
</tr>
<tr>
<td>x 5.</td>
<td>x E.</td>
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</tbody>
</table>

X. Seam finish (Put correct number in each blank)
<table>
<thead>
<tr>
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<th>Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Effectively</td>
<td>in a way that gets desired results</td>
</tr>
<tr>
<td>11</td>
<td>Calmness</td>
<td>condition of being calm or of not being disturbed</td>
</tr>
<tr>
<td>11</td>
<td>Tantrums</td>
<td>displays of anger and bad temper that are not controlled</td>
</tr>
<tr>
<td>12</td>
<td>Masturbating</td>
<td>handling or rubbing the sex organs</td>
</tr>
<tr>
<td>15</td>
<td>Undue</td>
<td>excessive</td>
</tr>
<tr>
<td>29</td>
<td>Sexual</td>
<td>related to sex</td>
</tr>
<tr>
<td>30</td>
<td>Feeling of</td>
<td>inferiority-belief that one falls short of one's fellows in some physical or mental traits and feeling humiliated because of this</td>
</tr>
<tr>
<td></td>
<td>Unstable</td>
<td>not able to be uniform, irregular</td>
</tr>
<tr>
<td>32</td>
<td>Finicky</td>
<td>too particular</td>
</tr>
<tr>
<td>33</td>
<td>Inhibited</td>
<td>held back, hindered, restrained</td>
</tr>
<tr>
<td>35</td>
<td>Maladjusted</td>
<td>falls short of being able to do what others or he expects of him</td>
</tr>
<tr>
<td>36</td>
<td>Rivalry</td>
<td>competition</td>
</tr>
<tr>
<td>44</td>
<td>Shyness</td>
<td>condition of being timid or shy</td>
</tr>
</tbody>
</table>
WHAT MEMBERS OF THE FAMILY SHOULD MAKE DECISIONS CONCERNING MONEY?

Most people have some very definite ideas about whom they think should make decisions in the family concerning money. Here is an opportunity for you to state your opinions.

On the following pages are questions concerning decisions which many families must make. "Family" here consists of mother, father, teenagers and young children. Following each question is a list of individual members or groups of members in the family who may make these decisions. You are asked to indicate how you feel toward each of them. You are to do this by reading each question over carefully and considering each individual or group listed. Then you are to underline one of the following code symbols for each individual or group listed:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>SA (Strongly agree)</td>
<td>- - if you are heartily in favor of that family member or group making the decision</td>
</tr>
<tr>
<td>A (Agree)</td>
<td>- - - - - if you are in favor of that family member or group making the decision but do not feel strongly about it</td>
</tr>
<tr>
<td>U (Undecided)</td>
<td>- - - if you are not sure whether you think that family member or group should make the decision</td>
</tr>
<tr>
<td>D (Disagree)</td>
<td>- - - - if you are not in favor of that family member or group making the decision but do not feel strongly about it</td>
</tr>
<tr>
<td>SD (Strongly disagree)</td>
<td>- if you are absolutely against that family member or group making the decision</td>
</tr>
</tbody>
</table>

Sample Question

A. Who should make decisions about whether to buy at one store or another? (For example: supermarket or small neighborhood grocery)

1. Grandmother and children
2. Grandmother only

Now look at item A on the response sheet. If you were heartily in favor of grandmother and children making the decision, you would underline SA after number 1 as has been done on the response sheet. If you were not in favor of grandmother only making the decision but did not feel strongly about it, you would underline D as has been done on the response sheet for number 2. Be sure to underline a code symbol to show how you feel about each of the numbered items.

Remember there are no right or wrong answers. You have a right to any opinions you hold, so please answer just as you feel.
Who Should Make Decisions Concerning the Purchase of Durable Goods?

By "durable goods" is meant those which last for several years such as motor cars, furniture, and large appliances.

On the response sheet show how you feel by underlining a code symbol for each of the numbered items.

B. Who should make decisions regarding whether to buy one durable good or another (for example: refrigerator or TV)?

1. Mother after consulting father
2. Father and mother after consulting each member of the family
3. Father, mother and teen-agers
4. Father and mother after consulting members who help make decisions according to their maturity
5. Mother alone
6. Father who makes the decision according to what he thinks the rest of the family would want
7. Father, mother and members who help make decisions according to their maturity
8. Father after consulting mother

C. Who should make the decision about what model, brand or size of durable good to buy?

1. Father, mother and teen-agers
2. Mother who makes her decision according to what she thinks father would want
3. Mother who makes her decision according to what she thinks the rest of the family would want
4. Father who makes his decision according to what he thinks mother would want
5. Mother alone
6. Father and mother after consulting each member of the family
7. Father alone
8. Father and mother after consulting members who help make decisions according to their maturity
9. Father, mother and members who help make decisions according to their maturity

Continued on next page
D. Who should make the decisions concerning when to buy durable goods; that is, immediately, later this year, next year, or later?

1. Father and mother after consulting each member of the family
2. Father after consulting members who help make decisions according to their maturity
3. Mother who makes her decision according to what she thinks father would want
4. Father and mother after consulting members who help make decisions according to their maturity
5. Mother alone
6. Father, mother and teen-agers
7. Father alone
8. Father, mother and members who help make decisions according to their maturity

E. Who should make the decisions concerning how to pay for durable goods; that is, whether to buy by cash or credit?

1. Mother who makes her decision according to what she thinks the rest of the family would want
2. Mother alone
3. Father after consulting members who help make decisions according to their maturity
4. Father and mother after consulting members who help make decisions according to their maturity
5. Mother after consulting members who help make decisions according to their maturity
6. Father, mother and teen-agers
7. Father, mother and members who help make decisions according to their maturity
8. Father who makes his decision according to what he thinks mother would want
9. Father alone
10. Father and mother

Note: Be sure that you have underlined one code symbol following each of the numbers on the response sheet.

When you have finished, hand in the test and response sheet to your teacher.
Response Sheet and Key for Attitude Scale for Homemaking II

(Items marked with an asterisk are scored SA-5, A-4, U-3, D-2, SD-1. All other items are scored SA-1, A-2, U-3, D-4, SD-5. Item E-10 was not scored.)
Letter Regarding Administration of Pretests

Home Economics Education Department
Iowa State College
Ames, Iowa
August 26, 1957

To: Homemaking Teachers Assisting with Research Project
From: Marguerite Scruggs

Thank you for expressing to Miss Fallgatter your willingness to cooperate in the research project about which she wrote to you. By working together we can hope to add to our understanding of some of the changes which Homemaking I and II pupils make as a result of their year in a homemaking class and of some of the teaching experiences of beginning homemaking teachers. Without your assistance this kind of information could not be secured.

The first step in this research consists of giving a series of tests to all of your Homemaking I and Homemaking II pupils. Enclosed with this letter are stamps that you will need for returning materials to me. The other materials that you will need are being mailed to you in a separate package today. They include a copy of Procedures to Be Used in Giving the Tests; Glossary of Terms in Bringing Up Children; a blank entitled Comments on the Tests; Homemaking I tests including Test I-A, Test I-B, and Bringing Up Children; Homemaking II tests including Test II-C, Test II-D, and Test II-E; answer sheets for five of the tests; bulletin board materials for use with some of the tests; envelope for returning materials which will need to be sent first class, and a mailing label.

In conducting research of this type, it is important that all teachers use the same procedures in giving the tests. A copy of the procedures to be used is included in the package of tests. If each of us were using these tests as a part of our teaching, it would be quite natural for us to use them differently. This fact points up a big difference between procedures used in research and those used in our day-to-day teaching. In this part of our research project, we need to be as alike as "two peas in a pod". May I thank you in advance for using the procedures described.

Please be sure to keep the tests in a place where they will not be seen by any of the pupils before they are administered.

If the directions are not clear or you need additional copies of the tests, call me collect. My home telephone number in Ames is Cedar 2-5864. If you cannot reach me at that number, please leave word with Miss Fallgatter's secretary (Cedar 2-3400, Extension 420) for me to call you. It may be somewhat more difficult to reach me by telephone after September 6. If you have questions, I hope you can call me by that date.

Later in the year I shall be writing you about the other aspects of the research that Miss Fallgatter mentioned in her letter. You are making an important contribution to this project. Thank you again.

Marguerite Scruggs
A. Who should make decisions about whether to buy at one store or another?

1. SA A U D SD
2. SA A U D SD

B. Who should make decisions regarding whether to buy one durable good or another?

1. SA A U D SD
2. SA A U D SD
3. SA A U D SD
4. SA A U D SD
5. SA A U D SD
6. SA A U D SD
7. SA A U D SD
8. SA A U D SD

C. Who should make the decision about what model, brand or size of durable good to buy?

1. SA A U D SD
2. SA A U D SD
3. SA A U D SD
4. SA A U D SD
5. SA A U D SD
6. SA A U D SD
7. SA A U D SD
8. SA A U D SD
9. SA A U D SD

D. Who should make the decisions concerning when to buy durable goods?

1. SA A U D SD
2. SA A U D SD
3. SA A U D SD
4. SA A U D SD
5. SA A U D SD
6. SA A U D SD
7. SA A U D SD
8. SA A U D SD

E. Who should make the decisions concerning how to pay for durable goods?

1. SA A U D SD
2. SA A U D SD
3. SA A U D SD
4. SA A U D SD
5. SA A U D SD
6. SA A U D SD
7. SA A U D SD
8. SA A U D SD
9. SA A U D SD

CODE
SA - strongly agree
A - Agree
U - Undecided
D - Disagree
SD - Strongly disagree
Procedures to be Used in Giving the Tests

A. To whom tests are to be given

Homemaking I pupils: Test I-A, Test I-B, and Bringing Up Children
Homemaking II pupils: Test II-C, Test II-D, and Test II-E

If some pupils are absent when the tests are given, have them take the tests as soon as possible after they return to class. If they are absent two weeks or more, they need not take the tests.

B. When to give the tests

Administer the tests during the first or second week of school.

The homemaking class period (50 to 55 minutes) on two consecutive days will be needed for the series of tests for each of the two levels, Homemaking I and II. Tests are to be given in the following order:

<table>
<thead>
<tr>
<th>First Day of Testing</th>
<th>Second Day of Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemaking I</td>
<td>Test I-A</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Homemaking II</td>
<td>Test II-C</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. How to introduce the tests

Give girls in your classes the following information in your own words. In Iowa we are trying to get a better understanding of what girls already know about homemaking when they enroll in a homemaking class. They have been selected to help with this project. Girls in a number of homemaking classes throughout Iowa will be taking these same tests. By doing their best on the tests, they will help us to make homemaking classes even more interesting and helpful to Iowa girls. Later in the year they will be asked to help in one or two other ways.

D. How much time to allow pupils

The tests for each day have been planned for a 50 to 55-minute class period. Since it is difficult to estimate the amount of time that pupils will need, some may finish before the end of a period; others may not get through. Encourage pupils to do their best on the tests and to work on the items in the order in which they appear. All tests should be handed in at the end of the period whether or not each pupil has finished.

On the second day when two tests are to be given, all pupils are expected to finish the first test (Bringing Up Children for Homemaking I and Test II-D for Homemaking II) and then get the second test and start...
to work on it immediately. Be sure to give the second day's tests in the order indicated.

E. Kinds of help to be given to pupils

After distributing copies of the test and corresponding answer sheet (All tests have separate answer sheets except Bringing Up Children.), ask pupils to write their names, the school, and date in the spaces provided at the top of the answer sheet. (In the case of Bringing Up Children, this information is to be written on the front of the test.)

Briefly explain the instructions given at the beginning of the test. Since Tests I-B and II-E, which are to be given last on the second day, are similar in form to the tests given the first day, you may not need to explain the instructions a second time.

As the pupils take the tests, observe the way they are recording their answers. Give them any needed help on how to use the answer sheets. Ask pupils not to write on the tests so that girls in other classes can use the same tests.

Feel free to answer pupils' questions about directions for taking the tests. Please do not discuss other kinds of questions with them either while they are taking the tests or afterward.

Please display the appropriate set of bulletin board materials when a test is given. A set of such materials is provided for Tests I-A, I-B, II-C, and II-E. It may be necessary for the girls to walk up to the bulletin board to examine some of the fabrics more closely than they could by remaining in their seats.

Two special requests need to be made in regard to the test, Bringing Up Children.

1. This test is a booklet (actually a folded sheet of paper) with the front and back glued together. Be sure that pupils do not open these up either before or after taking the test.

2. Some words in this test may be unfamiliar to some of the pupils. Will you write the information given on the enclosed Glossary of Terms in Bringing Up Children on the chalk board prior to class so that pupils can refer to the definitions as they take the test?
F. **Special points to check**

Before you return the materials to Miss Scruggs, please check to see that:

- Each answer sheet or copy of Bringing Up Children has the pupil's name on it.
- Each girl has used correct procedures in marking her answers.

Will you write down on the enclosed sheet entitled Comments on the Tests the length of time that pupils required for the tests and the kinds of questions that they asked about the tests.

G. **How and when to return the materials**

As soon as the tests have been given, mail the materials to Miss Marguerite Scruggs, Department of Home Economics Education, Iowa State College, Ames, Iowa. Labels and stamps are provided.

Place all of the used answer sheets, used copies of Bringing Up Children, and copy of Comments on the Tests in the envelope marked **First Class**. Attach necessary postage.

Wrap all of the tests, unused answer sheets, and bulletin board materials in the paper in which the materials were originally sent. Mail it parcel post (or third class if under 8 ounces).

Please let Miss Scruggs know if an insufficient amount of postage was enclosed for your use.

Note: If some pupils were absent when the tests were given, please return all of the materials except what you need to use in giving the tests to these girls. At the end of two weeks after the tests were originally given, return the answer sheets of girls who took the tests late along with the remainder of the materials.
A. Who shall take the tests

All pupils now enrolled in your homemaking I and II classes shall take the tests although some of them may not have taken the pre-tests last fall.

If some pupils are absent when the tests are given, have them take the tests as soon as possible after they return to class. If their answer sheets cannot be sent with the others on or before May 16, please mail them in a separate envelope later so that most of your materials can be sent to Miss Scruggs on time.

B. When to give tests

Give the tests on two consecutive days during the period from May 5 to May 16. Tests are to be given in the following order:

<table>
<thead>
<tr>
<th>First Day of Testing</th>
<th>Second Day of Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemaking I</td>
<td>Test I-A</td>
</tr>
<tr>
<td>Homemaking II</td>
<td>Test II-C</td>
</tr>
<tr>
<td></td>
<td>1. Bringing up Children</td>
</tr>
<tr>
<td></td>
<td>2. Test I-B</td>
</tr>
<tr>
<td></td>
<td>1. Test II-D</td>
</tr>
<tr>
<td></td>
<td>2. Test II-E</td>
</tr>
</tbody>
</table>

Be sure to give the second day's tests in the order indicated.

C. How to introduce the tests

Provide the following information in your own words. We are interested in knowing how much Iowa girls learn in their homemaking classes during the year. This is a part of the same research project with which they helped last fall. Homemaking classes in a number of Iowa schools will be taking these same tests. By doing their best they will help us to make homemaking classes even more interesting and helpful.

D. How much time to allow pupils

Allow all pupils as much time during the class period as they need for completing the tests. Be sure to give the tests on two days when the class periods will be of regular length. Encourage pupils to do their best and to work on the items in the order in which they appear. All tests should be handed in at the end of the period whether or not each pupil has finished.

E. Kinds of help to be given to pupils

Briefly explain the instructions given at the beginning of each
test. Explain that the following statement, "Check (x) on the answer sheet the reason(s) that best explains your choice," means: Check (x) on the answer sheet the reason or reasons that best explain your choice. In other words, if more than one reason seems correct, more than one reason should be checked.

Several teachers indicated there were questions about how to mark the answers for item XXI of test I-A, items XII and XIII of test I-B, item XX of test II-C, and item X of test II-E. Some pupils may need some special help on how to mark these items. The instructions vary somewhat for each of these items. For example, a pupil using the correct method of marking might have marked her answer sheet as follows for item XII of test I-B:

XII. Fabric Reasons

_ x A. (Use numbers) Her answer sheet indicates that she
_thinks two of the fabrics, A and E,
___ B. ___ A. are best. She chose fabric A for
___ C. ___ B. reason number 1 and fabric E be-
___ D. ___ C. cause of reasons number 2 and 4.
_x E. ___ D. (Answers shown here are not
_ 2,4 E. necessarily correct.)

Feel free to answer pupils' questions about directions for taking the tests. Please do not discuss other kinds of questions with them.

Ask pupils to mark their answers on the answer sheets except in the case of Bringing up Children. Pupils are not to write on the tests.

Please display the appropriate set of bulletin board materials when a test is given. It may be necessary for the girls to go to the bulletin board to examine some of the fabrics.

Please check to see that each girl:

Writes her name at the top of each answer sheet or on her copy of Bringing up Children.
Uses correct procedures in marking her answers.

Three special requests need to be made regarding the test, Bringing up Children.

1. The words, "Stop here. Wait for further instructions," appear at the end of most copies. Help pupils to understand that they are to start test I-B as soon as they finish Bringing up Children.

2. This test is a booklet (actually a folded sheet of paper) with the front and back glued together. Be sure that pupils do not open these either before or after taking the test.

3. Some words in this test may be unfamiliar to some of the pupils. Please write the information on the enclosed Glossary of Terms in Bringing up Children on the chalk board.
Letter Regarding Administration of Post-tests

Home Economics Education Department
Iowa State College
Ames, Iowa
May 1, 1958

To: Homemaking Teachers Assisting with Research Project
From: Marguerite Scruggs

The materials that you will need in giving the final tests of the research project are being mailed to you under separate cover. The tests are to be given to your homemaking I and II pupils on two consecutive days during the period from May 5 to May 16.

Please follow the instructions which are enclosed in the package of tests. Avoid giving pupils any advance information about the nature of the tests. Of course, the pupils should not see the tests before they are taken.

If the directions are not clear or you need additional copies of any of the materials, call me collect at Cedar 2-5864. If you cannot reach me at that number, leave word with Miss Fallgatter's secretary (Cedar 2-3400, Extension 420) for me to call you.

On or before May 16 mail the used answer sheets and all copies of Bringing up Children in the large envelope(s) provided for that purpose. Do not return any of the other materials. I hope that I have enclosed sufficient postage. If not, please let me know.

The enclosed form may be returned with the answer sheets if you wish to receive a summary of the results of tests taken by your pupils and/or a key for the tests. Test results will be available sometime next year. The key will be helpful if you wish to use the tests in the future.

The package being mailed to you includes tests for homemaking I and II, answer sheets, instructions for giving final tests, bulletin board materials, and envelope(s) for returning used answer sheets and Bringing up Children.

Your assistance with this research project is sincerely appreciated.
APPENDIX D. CRITERION MEASURE OF ATTITUDES OF PUPILS TOWARD THE TEACHER OR CLASS CONDUCTED BY THE TEACHER

Scale Six of Pupil Reaction Inventory
Directions to Pupils: This inventory consists of 26 statements. Some are the same, or similar to, remarks you might make about the class of which you are now a member. Hence, you might say that you agree with some of the statements and that you disagree with others.

Please read each statement carefully and decide whether or not it is the sort of remark you would make about your experience in this class. If you AGREE with a statement as being the same or similar to what you would say about this class, underline the letter, A, on the response sheet. If you DISAGREE with a statement, feeling that it is not like your reaction to this class, underline the letter, D, on the response sheet. If you are UNCERTAIN, feeling that you cannot agree or disagree with the statement, underline the letter, U, on the response sheet.

Please give your serious reaction to these statements that other pupils have made about their classes.

Please do not write on this sheet. Mark your answers on the response sheet.

1. The things we are studying have helped me to understand some important things.
2. I have a chance to find things out for myself.
3. In this class I feel worthwhile.
4. I'm satisfied with the kind of work I've been doing in this class.
5. We have a chance to find things out for ourselves.
6. In this class everyone is treated kindly.
7. I now understand myself better than I did at the beginning of this course.
8. It is easy to behave in this class.
9. In this class I usually have time to explain what I am trying to say.
10. I think the teacher knows me very well.
11. In this class we are taught to be responsible.
12. I enjoy talking and joking with the teacher.
13. I feel the school is interested in me.
14. One of the reasons I like this class is that the teacher treats me fairly.
15. In this class we aren't expected to be perfect.
16. I feel I really belong in this class.
17. I like the sense of humor shown in this class.
18. In this class we are met more than half-way whenever problems arise.
19. In this class I am never nervous or afraid when questions are being asked.
20. I have talked over my ambitions with the teacher.
21. Once in a while I stay a few minutes after class to talk with the teacher.
22. In this class I think the pupil feels he is important.
23. Much interest in our school activities is shown in this class.
24. This class has helped me find answers to some questions I have wondered about.
25. In this class we know what to expect.
26. I am sure our class is well liked.
Response Sheet for Scale Six of Pupil Reaction Inventory

<table>
<thead>
<tr>
<th>School</th>
<th>Your Grade Level</th>
<th>Time Class Meets</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Example of how to mark responses

1. This class meets almost every day. 1. A U D
2. I never attend this class. 2. A U D
3. I know I'll get an "A" in this class. 3. A U D

Underline the letter (A, U, or D) that shows how you feel about each statement.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>U</td>
<td>D</td>
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<tr>
<td>2</td>
<td>A</td>
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<td>3</td>
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<td>4</td>
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</tr>
<tr>
<td>25</td>
<td>A</td>
<td>U</td>
<td>D</td>
</tr>
<tr>
<td>26</td>
<td>A</td>
<td>U</td>
<td>D</td>
</tr>
</tbody>
</table>

CODE

A - Agree
U - Uncertain
D - Disagree
APPENDIX E. CRITERION MEASURE OF BEHAVIORS OF PUPILS AND TEACHERS IN THE CLASSROOM

Observation Record for Homemaking Classes

<table>
<thead>
<tr>
<th>Teacher</th>
<th>School</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemaking</td>
<td>No. in class</td>
<td>Time</td>
</tr>
<tr>
<td>(level)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aspect of Homemaking - Foods, Clothing, Housing, C.D., Fam. Rel., Other

Activity - Laboratory, Discussion, Demonstrations, Other

(Brief description)

### PUPIL BEHAVIOR

<table>
<thead>
<tr>
<th>Remarks</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7 N</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Apathetic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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### TEACHER BEHAVIOR

<table>
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<th>Remarks</th>
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Glossary for the Observation Record

Pupil behaviors

I. Apathetic-alert pupil behavior

Apathetic                        Alert
1. Listless                     1. Appeared eager to participate in classroom activities
2. Bored-acting                 2. Watched teacher attentively
3. Entered into activities      3. Worked concentratedly
     half-heartedly             4. Seemed to respond eagerly
4. Restless                     5. Prompt and ready to take part in activities when they began
5. Attention wandered           6. Asked questions that showed interest in solving personal and home problems
6. Slow in getting underway

II. Obstructive-responsible pupil behavior

Obstructive                        Responsible
1. Rude to one another           1. Courteous, cooperative, friendly with each other and with teacher
   and/or to teacher             2. Carried out learning experiences without complaining or unhappiness
2. Interrupting, disturbing,    3. Controlled voices
   demanded attention           4. Received help and criticism attentively
3. Obstinate, sullen            5. Asked for help when needed
4. Refused to participate        6. Ordered without specific directions from teacher
5. Quarrelsome, irritable        7. Prepared
6. Engaged in name-calling       8. Assumed some responsibility for a safe, attractive, homelike homemaking department
   and/or tattling
7. Unprepared
8. Carried out unsafe practices
9. Caused the department to be less attractive
### III. Uncertain-confident pupil behavior

**Uncertain**

1. Seemed afraid to try, unsure
2. Hesitant, restrained
3. Appeared embarrassed
4. Displayed nervous habits, nailbiting, etc. frequently
5. Appeared shy and timid
6. Hesitant and/or stammering speech

**Confident**

1. Seemed eager to try new problems or activities
2. Undisturbed by mistakes
3. Volunteered to participate
4. Entered freely into activities
5. Appeared relaxed
6. Spoke with assurance

### IV. Dependent-initiating pupil behavior

**Dependent**

1. Relied on teacher for explicit directions
2. Showed little ability to work things out for themselves
3. Unable to proceed when initiative called for
4. Appeared reluctant to take lead or to accept responsibility

**Initiating**

1. Volunteered ideas and suggestions
2. Suggested applications of class learnings to their daily lives
3. Voluntarily used available resources in solving a problem
4. Showed resourcefulness
5. Willingly carried out needed leadership functions (asked pertinent questions, provided information, suggested a procedure, provided needed humor, etc.)
6. Assumed responsibilities without evasion

### Teacher behaviors

#### V. Partial-fair teacher behavior

**Partial**

1. Repeatedly slighted a pupil
2. Corrected or criticized certain pupils repeatedly

**Fair**

1. Treated all pupils approximately equally but gave special help to individuals or groups as needed
3. Repeatedly gave a pupil special advantages
4. Repeatedly emphasized the strengths of certain pupils
5. Gave most attention to one or a few pupils
6. Showed prejudice (favorable or unfavorable) towards some social, racial, or religious groups
7. Expressed suspicion of motives of a pupil

2. Encouraged pupils to explain their actions, beliefs, or solutions
3. Distributed attention to many pupils
4. Encouraged all pupils to assume kinds of leadership functions appropriate for them (see 5 above)
5. Based criticism or praise on factual evidence (actual behavior) not hearsay

VI. Autocratic-democratic teacher behavior

Autocratic

1. Told pupils each step to take
2. Intolerant of pupils' ideas
3. Mandatory in giving directions, orders to be obeyed at once
4. Interrupted pupils although their discussion was relevant
5. Always directed rather than participated
6. Used methods which emphasized teacher-telling and pupil-receiving
7. Attempted to force her standards upon pupils and/or their families

Democratic

1. Guided pupils without being dictatorial
2. Encouraged individuals and group to be increasingly self-directive in setting goals, planning experiences, applying generalizations and weighing values in solving problems and evaluating progress
3. Exchanged ideas with pupils
4. Provided for or encouraged exchange of pertinent ideas among pupils
5. Encouraged (asked for) pupil opinion
6. Entered into activities without domination

VII. Aloof-responsive teacher behavior

Aloof

1. Stiff and formal in relations with pupils
2. Apart, removed from class activity

Responsive

1. Approachable to all pupils
2. Participated in class activity
3. Condescending, talked down to pupils
4. Routine and subject matter only concern, pupils as persons ignored
5. Referred to pupil as "this girl" or "that girl"
6. Ignored (showed no reaction to) pupils as they entered the room

VIII. Restricted—understanding teacher behavior

Restricted

1. Recognized only academic accomplishments of pupils, no concern for personal problems
2. Completely unsympathetic with a pupil's failure at a task
3. Called attention only to very good or very poor work
4. Impatient with a pupil

Understanding

1. Showed awareness of a pupil's personal problems and needs
2. Showed awareness of a pupil's problems and needs as related to her home and family
3. Showed awareness of pupil's feelings
4. Tolerant of error on part of pupil
5. Patient with a pupil beyond ordinary limits of patience
6. Showed what appeared to be sincere sympathy with a pupil's viewpoint

IX. Harsh—kindly teacher behavior

Harsh

1. Hypercritical, fault-finding
2. Cross, curt
3. Depreciated pupil's efforts, was sarcastic
4. Scolded a great deal
5. Lost temper
6. Used threats
7. Permitted pupils to laugh at mistakes of others

Kindly

1. Went out of way to be pleasant and/or to help pupils, friendly
2. Gave pupil a deserved compliment
3. Found good things in pupils to call attention to
4. Seemed to show sincere concern for a pupil's personal problem
5. Showed affection without being demonstrative
6. Disengaged self from a pupil without bluntness
X. **Dull-interesting teacher behavior**

**Dull**

1. Uninteresting, monotonous explanations, wordy, overly repetitious
2. Learning experiences provided little or no motivation
3. Failed to provide challenge
4. Failed to capitalize on pupil interests (real pupil problems, current happenings, experiences of pupils, illustrations from surroundings)
5. Used few illustrations
6. Gave little opportunity for pupil response
7. Seemed to use routine procedures without variation

**Interesting**

1. Got and held attention without being flashy
2. Learning experiences challenging
3. Provided change of pace (humor, variation in activity, opportunity for pupil reaction)
4. Took advantage of pupil interests (real pupil problems, current happenings, experiences of pupils, illustrations from surroundings)
5. Brought lesson successfully to a climax

XI. **Apathetic-alert teacher behavior**

**Apathetic**

1. Seemed listless, languid, lacked enthusiasm and vitality
2. Seemed bored by pupils
3. Passive in response to pupils
4. Seemed preoccupied
5. Attention seemed to wander
6. Sat in chair most of time, took no active part in class activities

**Alert**

1. Appeared buoyant, wide-awake, enthusiastic about activity of the moment
2. Kept constructively busy
3. Gave attention to and seemed interested in what was going on in class, aware of behavior of all pupils
4. Prompt to "pick up" class when pupils' attention showed signs of lagging

XII. **Unimpressive-attractive teacher behavior**

**Unimpressive**

1. Untidy or sloppily dressed
2. Inappropriately dressed
3. Drebb, colorless
4. Posture and bearing unattractive

**Attractive**

1. Clean and neat
2. Well-groomed, dress showed good taste
3. Sanitary, safe attire in food laboratory
5. Possessed distracting personal habits
6. Mumbled, inaudible speech, limited expression, disagreeable voice tone, poor inflection

4. Posture and bearing attractive
5. Free from distracting personal habits
6. Plainly audible speech, good expression, agreeable voice tone, good inflection

XIII. Evading-responsible teacher behavior

Evading

1. Avoided responsibility, disinclined to make decisions
2. "Passed the buck" to class, to other teachers, etc., let pupils make decisions about matters beyond the scope of their responsibility or inappropriate to their level of development
3. Left learning and/or planning to pupils, failing to give adequate help
4. Let a difficult situation get out of control
5. Assignments and directions indefinite
6. Gave no indication of having guided pupils in setting up or using suitable standards of quality
7. Inattentive to pupils
8. Cursory
9. Failed to take steps to improve the department in relation to attractiveness, convenience, and healthfulness

Responsible

1. Assumed responsibility, made decisions as required
2. Conscientious
3. Punctual
4. Painstaking, careful
5. Suggested aids to learning, made sources of needed information available to pupils
6. Controlled a difficult situation
7. When directions were needed, they were presented in clear, logical steps; when pupils participated in planning, saw that plans were clearly understood
8. Guided pupils in setting up and using suitable standards of quality
9. Attentive to class
10. Thorough
11. Assumed leadership in creating an attractive, convenient, healthful, and homelike department (including light, heat, ventilation)
XIV. Erratic-steady teacher behavior

Erratic                      Steady

1. Impulsive, uncontrolled, 1. Calm, controlled
   temperamental, unsteady   2. Maintained progress toward
2. Course of action easily 3. Stable, consistent, pre-
   swayed by circumstances dictable
   of the moment
3. Inconsistent

XV. Excitable-poised teacher behavior

Excitable                   Poised

1. Easily disturbed and 1. Seemed at ease at all
   upset, flustered by   times
   classroom situation
2. Hurried in class activ-
   ities, spoke rapidly
   using many words and
   gestures
3. Was "jumpy", nervous

XVI. Uncertain-confident teacher behavior

Uncertain                   Confident

1. Seemed unsure of self, 1. Seemed sure of self, self-
   faltering, hesitant      confident in relations
2. Appeared timid and shy, 2. Undisturbed and unembar-
   very self-conscious      rassed by mistakes and/or
3. Appeared artificial     criticism
4. Disturbed and embar-
   rassed by mistakes
   and/or criticism

XVII. Disorganized-systematic teacher behavior

Disorganized                Systematic

1. No plan for classwork 1. Gave evidence of a planned
2. Unprepared             though flexible pro-
3. Objectives not apparent, cedure
   undecided as to next
   step
   2. Well prepared
4. Wasted time, caused or permitted pupils to waste time
5. Explanations not to the point
6. Easily distracted from matter at hand
7. Lack of organization of furnishings, equipment, and supplies to aid in efficient use
8. No apparent organized system of filing references, illustrative materials, etc.

3. Gave evidence of awareness of objectives when planning with pupils
4. Systematic about procedure of class, organized activities so all pupils were working
5. Had anticipated needs
6. Provided reasonable and adequate explanations
7. Held discussion together, objectives apparent
8. Organized and arranged furnishings, equipment, and supplies to facilitate efficient use for various learning experiences
9. Had references, illustrative materials, etc. filed so readily available to her and to pupils

XVIII. Inflexible-adaptable teacher behavior

Inflexible

1. Rigid in conforming to routine
2. Made no attempt to adapt materials to individual pupils
3. Appeared incapable of modifying explanation or activities to meet particular classroom situations
4. Impatient with interruptions and digressions

Adaptable

1. Flexible in adapting explanations
2. Individualized materials for pupils as required, adapted activities to pupils, in relation to their background of experience, speed of learning, etc.
3. Took advantage of pupils' questions to clarify ideas further
4. Met an unusual classroom situation competently
5. Used opportunities for teaching which arose unexpectedly
XIX. Pessimistic-optimistic teacher behavior

Pessimistic
1. Depressed, unhappy
2. Skeptical
3. Called attention to potential "bad"
4. Expressed hopelessness of "education today," the school system, or fellow educators
5. Noted mistakes, ignored good points
6. Frowned a great deal, had unpleasant facial expression

Optimistic
1. Cheerful, good natured
2. Genial
3. Joked with pupils on occasion
4. Emphasized potential "good"
5. Looked on bright side, spoke optimistically of the future
6. Called attention to good points, emphasized the positive

XX. Immature-integrated teacher behavior

Immature
1. Appeared naive in approach to classroom situations
2. Self-pitying, complaining, demanding
3. Boastful, conceited
4. Kept self in spotlight throughout the class period

Integrated
1. Maintained class as center of activity, kept self out of spotlight, referred to class's activities, not own
2. Emotionally well controlled
3. Used methods which helped pupils to "shine"

XXI. Narrow-broad teacher behavior

Narrow
1. Presentation strongly suggested limited background in subject, lack of scholarship
2. Did not depart from text or reference books being used
3. Failed to enrich discussions with illustrations from related areas
4. Showed little evidence of breadth of background in fields related to family life today

Broad
1. Presentation suggested good background in subject, good scholarship
2. Drew examples and explanations from various sources and related fields
3. Encouraged pupils to use what they had learned in related areas
4. Showed evidence of broad background in fields related to family life today
5. Answers to pupils' questions incomplete or inaccurate
6. Non-critical approach to subject
7. Ignored areas of learning other than home-making
8. Repeatedly insisted on one right answer
9. Overemphasized a few types of objectives to the exclusion of others; for example, stressed learning of facts and manipulative skills
10. Not resourceful in answering questions or providing explanations

XXII. Unreceptive-receptive (to curriculum and evaluation suggestions) teacher behavior

Unreceptive

1. Provided activities inconsistent with suggestions in state curriculum guides (including choice of emphases for different grade levels)
2. No effort to formulate generalizations
3. No effort to carry out any steps in problem solving
4. Provided for no pupil participation in evaluation
5. Used procedures inconsistent with suggestions in state evaluation materials

Receptive

1. Provided learning experiences consistent with suggestions in state curriculum guides (including choice of emphases for different grade levels)
2. Guided pupils in formulating generalizations and using them in solving personal and home problems
3. Guided pupils in carrying out one or more steps in problem solving
4. Guided pupils in evaluating their individual and group progress
5. Used procedures consistent with suggestions in state evaluation materials
APPENDIX F. SUPPLEMENTARY TABLES

Table 17. Number of pupils by classes for whom pretest and post-test scores on tests of ability to apply generalizations were secured

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Table 18. Mean intelligence quotients of classes by level

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Table 13. Number of pupils by classes for whom pretest and post-test scores on attitude tests were secured

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