THE REVISION AND DEVELOPMENT OF SELECTED EVALUATION DEVICES FOR APPRAISING CERTAIN CLOTHING COMPETENCIES OF COLLEGE FRESHMEN

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CHAPTER I

INTRODUCTION

The college population in the United States is soaring. In 1920, the enrollment was 597,880; it had risen to 1,494,203 by 1940, and in 1960 it had grown to 3,610,007.[1] Many factors have contributed to this rise in enrollment. There has been an increase in the college-age population; the economy has been such that young people have been able to extend their formal education; the socio-economic status of American families has risen; people have taken for granted that young people need to be well educated, and leaders in the nation have sensed the need for more college educated people.

One of the major perplexities facing educators is, once these young people arrive at college, how can their needs be met? To help alleviate this gigantic problem, most colleges have admission testing programs which aim at ascertaining the students' scholastic aptitudes, achievements, interests, and special abilities. This study is concerned with one aspect of the over-all area of evaluating the achievement of entering college freshmen, namely that of identifying and assessing some of the clothing competencies of beginning students.

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[1]U. S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1947 (Washington, 1947), p. 134; U. S. Department of Health, Education, and Welfare, Office of Education, Opening (Fall) Enrollment in Higher Education, 1960: Institutional Data (Washington, 1960), p. 1.

Various evaluation devices are needed for assessing different types of clothing competencies. Devices are needed for the evaluation of the students' knowledge of clothing selection, construction, and care. Others are needed for appraising the students' understandings and abilities in applying skills and principles in new situations.

Valid and reliable tests designed to evaluate the above competencies could aid in bridging the gaps in learning that occur among students who arrive at college with different backgrounds, different interests and different preparations for clothing courses. No standardized clothing placement tests are available at the present time. Some clothing faculties have constructed tests which they use to take care of their local needs. Oklahoma State University and Mississippi State College for Women have written tests which they use for placement; however, both institutions have felt the need for more inclusive evaluation instruments.

With the above factors in mind, the major problem in this study has been the revision of the written placement test at Oklahoma State University and the development of additional devices for evaluating selected clothing competencies of college freshmen. The problem was further divided into these five subproblems:

1. The development of a questionnaire-check list to obtain information pertaining to the students' previous clothing experiences.
2. The identification of some common objectives of the secondary clothing programs of Mississippi and Oklahoma and the beginning clothing courses at Mississippi State College for Women and Oklahoma State University.
3. The examination of the clothing pretest now being used at Oklahoma State University and revision of the test if it is deemed necessary.

4. The development of an evaluation device to determine the students' ability to solve problems related to clothing construction, selection, and care.

5. The development of a station-to-station test to evaluate the students' manipulative and judgmental skills pertaining to clothing construction, selection, and care.

Need for the Study

In an attempt to improve the educational system in this country, educators are seeking ways to promote better articulation between secondary schools and institutions of higher education. Chauncey and Frederiksen[2] indicated that guidance and testing programs should be used to help bridge the gap between these levels of schooling. Educators consider it extremely important that students be enrolled in courses appropriate to their level of proficiency. They advocate that students should be enrolled in courses which are neither too difficult nor which involve wasteful duplication of earlier learned materials.

For many years home economists have been trying to take care of the individual differences of students; they have made an effort to individualize the courses of study for students. Coon,[3] speaking at the Eastern Regional Meeting of College Teachers of Textiles and Clothing in 1955, emphasized the need for building programs based upon the previous education of students. She advocated the importance of

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[2]Henry Chauncey and Norman Frederiksen, "The Functions of Measurement in Educational Placement." Educational Measurement, ed. E. F. Lindquist (Washington, 1951), p. 108.

[3]Beulah I. Coon, address at conference of College Teachers of Textiles and Clothing, Eastern Region, Atlantic City, 1955, p. 6., (mimeographed).

discovering and meeting interests and needs of students as well as that of challenging the strong ones.

Brown,[4] another home economist, stressed the need for assessing students' previous experiences when they arrive at college. In her report of a study done in selected liberal arts colleges, she said:

> ...Sometimes students were irritated by the fact that the freshman work in colleges offered little, if anything, beyond what they had had in high school. They wanted to know why all students had to take the same elementary courses, even those who had had several years of home economics in high school and a great deal of experience.[4]

Collins, reporting on the past experiences of students in the area of clothing construction, added that:

> Great differences in the amounts of students' past experiences in clothing construction certainly do exist, to the extent that some students enter the beginning course with considerable skill, while others have had no sewing experience at all.[5]

Use of college placement tests would be one means of helping alleviate repetition of high school experiences at the college level. Furst verified this when he made the following statement:

> Placement can contribute to the better articulation of secondary and higher education by accelerating the students who have already attained some of the major objectives of the college curriculum. Acceleration of the well qualified students is one of the most urgent needs in American higher education.[6]

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[4]Clara M. Brown, Home Economics in Liberal Arts Colleges (Washington, 1945), p. 38.

[5]Mildred H. Collins, "A Pretest for Placement in Beginning Clothing Courses at Southern Illinois University," (Unpublished Research Report, August, 1956), p. 1.

[6]Edward J. Furst, Constructing Evaluation Instruments (New York, 1958), p. 13.

The placement of students is not an easy task, but is one which, if accomplished, would no doubt improve the quality of the educational programs provided for students. Arny, in speaking of placement in the area of home economics, pointed out that:

> Placement of entering students in an appropriate curriculum and at the proper level of advancement in it represents a great problem... but, try to visualize what would happen if all colleges permitted students to start where their level of proficiency indicated they could do successful work...[7]

Arny felt that one of the major delays in the placement of students has been the lack of appropriate measuring instruments. Too few aspects of students' achievements have been evaluated. In her opinion:

> ...aspects measured are frequently the less, rather than the more important ones. Teachers tend to attach undue importance to the reproduction of memorized information and to give too little consideration to ability to use what is learned. It is easy to measure knowledge of facts and much more difficult to measure understanding and application.[8]

Ebel[9] supported this belief by stating that, of the evaluation techniques that have been constructed, there has been an overemphasis on content details, specialized vocabulary and specific factual information with corresponding neglect of generalizations, understandings and application.

Analyses of clothing placement tests from various colleges and universities have revealed the lack of sufficient devices for evaluating various clothing competencies in different content areas. Many

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[7]Clara Brown Arny, Evaluation in Home Economics (New York, 1953), p. 44.

[8]Ibid., p. 8.

[9]Robert L. Ebel, "Proceedings for Analysis of Classroom Tests," Educational and Psychological Measurement, XIV (Spring, 1954), p. 355.

of the clothing placement tests have been developed for courses that deal only with clothing construction. Far too often the devices attempt to evaluate only the students' knowledge of construction processes. These aspects of evaluation are important, but devices are needed which will go beyond the assessment of the students' ability to recall facts in this content area.

Today, educators sense the need for changing the emphasis in beginning clothing courses from mere clothing construction to the inclusion of some of the psychological, sociological and economic factors that affect the selection and care of clothing.

Monroe, speaking at the Eighth Central Regional Conference of College Clothing and Textile Teachers, warned that too much emphasis was still being placed on clothing construction. She averred that trends definitely indicated that more clothes were being purchased ready-made. She asked what standards could be used to teach students to judge values in ready-to-wear. The clothing teachers were urged to put more emphasis upon clothing consumption, less on garment construction and more upon buying, distribution and production.[10]

During the conference mentioned above, the curriculum and course planning group arrived at some basic conclusions which they considered vital to the freshman clothing course. Two of these were:

> Since the homemaker handles most of the family income, it would seem that our students should become aware of the economic aspects of clothing.

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[10]Day Monroe, address at conference of College Teachers of Textiles and Clothing, Central Region, Chicago, 1955, p. 3, (mimeographed).

> If selection courses are going to be vital to the students, the social-psychological aspects of clothing should be considered in the freshman course.[11]

Educators seem to agree in their desire for better articulation between secondary and college clothing programs, and they believe that one way of achieving this is to learn more about the abilities of entering freshmen. The use of placement tests have been referred to as a means of evaluating students' previous clothing experiences. However the realization that no completely satisfactory tests exist points to a definite need for the development of additional evaluation devices; therefore, this study was undertaken.

Assumptions

Five assumptions are basic to the study.[12] They are as follows:

1. Education is a process whose major purpose is to change the behavior patterns of human beings.
2. The behavior patterns which the school seeks to change are exemplified in the educational objectives.
3. Evaluation is a process that provides evidence which shows to what degree changes in behavior patterns have occurred.
4. Human behavior is too complex to be adequately appraised by a single score or grade.
5. Evaluation techniques are not limited to paper-and-pencil tests.

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[11]Report of Curriculum and Course Planning Committee, Conference of College Teachers of Textiles and Clothing, Central Region, Chicago, 1955, p. 6, (mimeographed).

[12]These assumptions are taken from a study conducted by the Progressive Education Association. They are discussed on pages 11-15 of the book, Appraising and Recording Student Progress, by Eugene R. Smith and Ralph W. Tyler, et. al. (New York, 1942).

Definition of Terms

Since educational terms vary according to their use, a list of definitions as used in this study follows:

Evaluation is a process which gives an estimate of the level of achievement of students toward specific objectives. In this study the estimate attempts to identify the students' level of knowledge, their ability to apply principles and their level of performance in manipulative and judgmental skills which pertain to the selection, construction, and care of clothing.

Competency is proficiency or skill in a given field or area. In this study it refers to the students' knowledge of clothing facts as well as their ability to integrate and use facts, generalizations, manipulative and judgmental skills in solving problems related to the selection, construction, and care of clothing.

Judgmental skill indicates the students' ability to make discriminating choices when confronted with problematic situations. In this study the problematic situations involve the selection, and construction of clothing.

Manipulative skill indicates the students' proficiency when handling tools in performing processes. In this study it involves students' proficiency in handling sewing equipment and in performing clothing preconstruction and construction processes.

Generalization is a general conclusion that has been formed from a group of related facts and ideas and is applicable for use in the solution of problems. This study includes generalizations which apply to the selection, construction, and care of clothing.

Scope of the Study

The study is limited to the evaluation of four clothing competencies exhibited by freshmen who enter college and is based upon ten objectives common to those found in the secondary school curriculum guides in Mississippi and Oklahoma and in outlines for beginning clothing courses at Mississippi State College for Women and Oklahoma State University. The ten objectives are:

1. To acquire knowledge concerning the construction of clothing.
2. To develop some skill in the construction of clothing.
3. To develop judgment concerning good and poor workmanship in clothing construction.
4. To acquire knowledge concerning the selection of clothing and accessories for individuals.
5. To skillfully apply the principles and elements of design to clothing selection for individuals.
6. To develop the ability to use appropriate principles in wardrobe planning and clothing selection.
7. To be cognizant of psychological, sociological, and economic factors that affect clothing selection.
8. To apply some psychological, sociological, and economic principles when selecting clothing.
9. To acquire knowledge concerning the proper care of clothing.
10. To use appropriate principles in caring for clothing.

The evaluation of the students' status in achieving these objectives would encompass the students' achievements in knowledge, ability to apply principles, and manipulative and judgmental skills in the selection, construction, and care of clothing.

Participants in the study were freshmen at Mississippi State College for Women and Oklahoma State University who were enrolled in a beginning clothing course during the school year, 1960-1961. Students

from other countries were excluded. All respondents were students who entered college immediately after completing their secondary school requirements.

Procedures of the Study

After the problem was identified, the need for the study was substantiated through a review of literature. Cooperation for conducting the study was then obtained from home economics administrators at Mississippi State College for Women and Oklahoma State University. State Homemaking Education Supervisors in Mississippi and Oklahoma, members of their staffs, selected secondary homemaking teachers in the two states, and members of the clothing and textile staffs at the two institutions of higher learning were contacted and agreed to participate in the study.

A study was made of the general clothing objectives in the Mississippi and Oklahoma Secondary School Curriculum Guides. The objectives for the beginning clothing courses at Mississippi State College for Women and Oklahoma State University were studied also. Objectives common to these four programs were identified (vide page 9) and are referred to earlier in a description of the scope of the study.

A detailed analysis of the content believed to be necessary to achieve the ten common objectives was made. From this an area of content chart was devised to guide the writer in formulating generalizations which covered the entire subject matter area. These were used as a basis for selecting individual test items for each evaluation device.

Criteria for the construction of each type of evaluation device were developed. A combination questionnaire-check list was developed to obtain information concerning the students' previous training and experience in the selection, construction, and care of clothing. The Oklahoma State University Written Clothing Pretest was revised. This revised portion of the test included matching, multiple-choice, and true-false items. An addition to the written test was composed of problems dealing with the application of principles. A practical test was developed which included manipulative and judgmental problems. As criteria were formulated for the questionnaire-check list and for each section of the written and practical tests, consideration was given to elements common to the total battery of evaluation devices.

An item analysis of the former Oklahoma State University written placement test was made which revealed the discriminating items. These were used as a basis for the revision of the written test. This part of the test was designed to evaluate the students' knowledge of clothing selection, construction, and care. A second competency, ability to apply principles, was appraised in this written test also. The practical test, known as a station-to-station test, was designed to evaluate the students' competencies in performing manipulative and judgmental skills.

The generalizations upon which the test was based, the individual test items and the keys to the items were evaluated by the entire clothing staffs at the two institutions of higher education cooperating in this study. Revisions and deletions were made in accordance with the suggestions given by these faculty members.

Data were obtained by administering the questionnaire-check list, written test, and station-to-station tests to freshmen students at Mississippi State College for Women and Oklahoma State University the first day that the beginning clothing classes met during the second semester, 1960-1961. After the results were scored, the data were statistically treated. Interpretations were made on the basis of the individual students' responses, and are given in this report.

Conclusions were drawn from the results of the study; recommendations for improving the present evaluation devices are given; implications are drawn, and suggestions are made for continuing research in the evaluation of students' performances in the selection, construction, and care of clothing.

Summary

Educators realize the need for determining students' achievements when they first arrive at college in order that new and challenging experiences may be provided for them. The use of placement tests is one means of assessing students' competencies in a given discipline. In the area of home economics, clothing placement tests which are now in use have, in most instances, been devised for and are used in local institutions. They almost exclusively cover courses in clothing construction. Home economists have inferred the need for evaluation devices which extend to other areas of clothing and which evaluate additional student competencies.

This study is confined to the revision of the written clothing placement test at Oklahoma State University; the addition of a section on the application of principles, and the development of a

station-to-station test to appraise entering freshmen's manipulative and judgmental skills in clothing selection and construction.

In the following chapters the study is described, the findings are reported, and the conclusions, implications, and recommendations are given. Chapter II gives a review of literature relevant to this study. Chapter III describes the formulation of the questionnaire-check list, the revision of the Oklahoma State University Clothing Placement Test and the development of certain additions. Chapter IV deals with the development and testing of the station-to-station test, and Chapter V presents the conclusions, implications, and recommendations.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Evaluation should be an integral part of every school curriculum. Everyone associated with any program engages in the process in one form or another. Students not only evaluate their own performances, but they often compare their accomplishments with those of fellow students. They may continuously evaluate their progress toward achieving objectives selected either by themselves or in cooperation with other persons interested in their progress. Instructors may look at their students' performances in terms of preconceived goals, and administrators may be continuously engaged in assessing the accomplishments of a total program. The appraisal of a total program, an individual course in a program, or an individual's progress in a minute aspect of a program serves as a basis for planning next steps in the program.

Until the 1930's evaluation consisted mostly of the relatively narrow educational measurement of information and skill-centered activities. At this time leadership in a broader appraisal of such attributes as attitudes, interests, ways of thinking and personal and social adaptability was begun by such educators as Tyler, Raths, and Wrightstone.

Possibly one of the first and most extensive evaluation projects was the Eight Year Study conducted by the Progressive Education

Association.[1] This study involved 30 secondary schools and many colleges. It stands as a landmark of very careful and thoughtful planning which produced a number of new evaluation instruments and techniques.

One of the latest large-scale cooperative research programs undertaken at the college level was the project on evaluation in general education sponsored by the American Council on Education. An account of the final report of this study can be found in a book edited by Dressel and Mayhew.[2] The study dealt with the subject matter areas of social science, communications, science, and the humanities. Only two objectives were thoroughly evaluated; these were attitudes and critical thinking. Techniques developed and used in the study could be adapted for use in many subject matter areas.

A very brief résumé of the evaluation program in home economics in higher education will be given. This will be followed by a discussion of some of the devices that have been developed and used for evaluating students' progress in attaining objectives in the area of clothing and textiles at both secondary and college levels.

Evaluation of College Home Economics Programs

Realizing the need for providing a meaningful, more worth-while program in home economics, in 1944, the American Home Economics Association appointed a committee to develop criteria for evaluating college

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[1]The evaluation instruments developed and used in this study are described in the book, Appraising and Recording Student Progress, by Eugene R. Smith and Ralph W. Tyler et al. (New York, 1942).

[2]Paul L. Dressel and Lewis B. Mayhew, General Education, Explorations in Evaluation (Washington, D. C., 1957).

home economics programs. As the committee members visited a large number of colleges, they observed the characteristics of the various home economics departments. After the visits, criteria for appraising students, curricula, staff, physical facilities and administration were developed. The results of this study are reported in the publication, Home Economics in Higher Education.[3] In speaking of the study, Tyler said:

> The report is of value in several significant ways. It helps to clarify the major purposes of departments of home economics. It describes characteristics of good departments that should serve as helpful suggestions to home economics faculties generally. It provides detailed criteria that can be used by a department faculty and outside consultants to identify the points of strength and the points needing improvement in the department.[4]

In 1950 the American Home Economics Association published a second book, Appraising the College Program in Home Economics. The author, Ruth Lehman, in describing this report of an experimental study of evaluation methods in five colleges in Ohio, indicated:

> It [referring to the study] was started at about the same time as the more extensive study by the American Home Economics Associations' Committee on Criteria for Evaluating College Home Economics Programs. It represents a somewhat different and more intensive attack on the question than could be attempted by that Committee in its survey of sixty colleges. It gives particular emphasis to the seeking of objective evidence of a department's success with students. In a sense then it may be said to supplement the larger study... throughout the project, attention has been given to appraisal in relation to the over-all objectives of the curriculum, rather than to the specific goals of either a given course or a given area of home economics...[5]

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[3]Ivol Spafford, ed., Home Economics in Higher Education (Washington, 1949).

[4]Ibid., p. v.

[5]Ruth T. Lehman, Appraising the College Program in Home Economics (Washington, 1950), p. i.

Studies have also been conducted to discover what individual students know prior to instruction in a particular course with the view of using the information gained as a basis for planning learning experiences. Reports of some of these studies which assess students' competencies in the area of clothing and textiles will be summarized in the latter part of this chapter.

In April, 1960, a national workshop on evaluation in home economics was held at the University of Illinois. The primary purpose of the workshop was the assessment of the needs for evaluation in home economics at the college level. Representatives from 11 institutions participated in the program. They reviewed long-time plans developed and used by other disciplines for evaluating their programs and discussed possibilities of such plans for evaluating home economics. Present needs in home economics were discussed, and a plan was formulated for collecting and distributing a file of test items. Members of the staff of clothing and textiles, foods and nutrition, and family relationships and child development departments from the institutions attending the conference were invited to contribute test items to the file. The first test items were submitted to the United States Office of Education in April, 1961. From this central office the compiled items will be sent to the institutions cooperating in the project. This program will be in operation for three years, and the Office of Education staff will evaluate it in the manner which seems most desirable.

Clothing Evaluation Techniques Used at the Secondary Level

In writing for the Encyclopedia of Educational Research, Brown reported that interest in objective-type evaluation devices was evident in home economics as early as 1923. At this time the Murdoch Sewing Scale was published.[6]

As early as 1919 Katharine Murdoch had devised a scale for the measurement of hand sewing which was patterned in the same style as was the Thorndike Handwriting Scale. After some practical use, Murdoch felt that this needed to be supplemented; therefore, she devised a new scale, known as the Murdoch Analytic Sewing Scale, which was published in 1923. Naturally these scales attracted attention since they were the first attempt to apply scientific measurement to any phase of home economics work.[7]

Trilling and Williams[8] reported another scale developed by Knapp and Williams which measured the students' ability in machine sewing. Skills seemed to be the easiest behavior to measure, and the first attempts at standardized tests and scales in the area of textiles and clothing were devised to measure this competency.

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[6]Sara Ann Brown, Contributor, "Evaluation of Home Economics," Encyclopedia of Educational Research, Chester W. Harris, ed. (New York, 1960), p. 671.

[7]Clara M. Brown, "Investigations Concerning the Murdoch Sewing Scale," Teachers College Record, XXIII (November, 1922), pp. 459-470; Katharine Murdoch, "A New Analytic Sewing Scale," Teachers College Record, XXIII (November, 1922), pp. 454-458.

[8]Mabel B. Trilling and Florence Williams, "Standardized Tests in Textiles and Clothing," Journal of Home Economics, XII (November, 1920), p. 487.

Score Cards. Score cards are frequently used as standards for judging finished garments. Students use this device as a tangible and definite tool for evaluating their work or that done by others. According to Bowman and Todd,[9] when analytical score cards are properly used in teaching garment construction, they aid in giving students a proper conception of the problems involved in a project as a whole; they point out the relative values of the various problems involved; they help students develop critical and analytical attitudes in selecting ready-made garments; and they help the instructor in determining the judgment which students have developed in their work.

Speed Charts. This evaluation device, as used in the 1930's, was explained to the writer by Pearson.[10] These progress charts used in evaluating pupil progress in garment construction were teacher initiated. Some of their advantages were: they helped students organize the performance steps in a logical order; they helped to organize time in order that it might be used to the best advantage; and students felt a sense of pride when they were able to check the performances which they had done satisfactorily, often ahead of time.

Informal Tests. Trilling and Hess[11] recommended during the early 1920's that secondary teachers of clothing and textiles use informal tests for evaluating students' competencies because there were no

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[9]Leona F. Bowman and Elizabeth Todd, "Score Cards as Devices in Teaching Clothing Construction," Journal of Home Economics, XIV (July, 1922), p. 323.

[10]Personal conference with Millie V. Pearson, May 30, 1961.

[11]Mabel B. Trilling and Adah Hess, "Informal Tests in Teaching Textiles and Clothing," Journal of Home Economics, XIII (October, 1921), p. 483.

standardized tests available. They believed that home economists were slow in developing standardized tests because there seemed to be a vagueness of purpose in home economics; they also believed that some home economists felt that standardization might mean ignoring the needs of individual students or using teaching methods that were not adapted to local needs and interests. However, at this time some home economists were laying the groundwork for standardized tests.

Groundwork for Standardized Tests. Early in the 1920's some home economists began making plans for standardized tests in home economics. Trilling felt that an analysis of the mental processes utilized in the clothing and textile area was one of the first steps to consider in developing educational measures. She predicted that four types of standardized tests would be needed in each area of home economics. These were: (1) a test or series of tests for the acquisition of information; (2) scales and tests to measure the extent students had mastered the development of manual and intellectual skills; (3) techniques to test the students' ability to "think"; and (4) techniques to evaluate students' aesthetic competencies. Such a fourfold testing scheme would evaluate the students acquisition of information, development of manual and mental skills, powers of judgment, and abilities of enjoyment and appreciation.[12]

Home economists at the University of Chicago pioneered in developing tests in home economics which might become standardized. Trilling and Williams[13] referred to devices developed at this institution which

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[12]Mabel B. Trilling et al., Home Economics in American Schools (Chicago, 1920), p. 77.

[13]Trilling and Williams, p. 488.

tested for acquisition and information and the ability to reason in situations involving the use of materials presented in textiles and clothing courses. Examples of some of these textile and clothing tests are included in the book, Home Economics in American Schools.[14] Although a comprehensive beginning for standardization of textile and clothing tests was made, no evidence was found that any of these devices became standardized.

Secondary Tests in Mental Measurements Yearbooks. A perusal of the five editions[15] of The Mental Measurements Yearbook revealed that very few tests have been standardized in any area of home economics. Practically all of the tests reported in the yearbooks cover the areas of clothing and textiles and foods and nutrition which are suitable for use at the elementary and secondary levels.

The first yearbook,[16] published in 1938, mentioned one clothing test for first year high school students published cooperatively by four institutions in Indiana and edited by Remmers. A second test[17] on general home economics was published by these same schools. One section of the general test was devoted to clothing and textiles. Clara M. Brown, in reviewing the general test, indicated that it could have

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[14]Trilling et al., pp. 77-99.

[15]Five editions of The Mental Measurements Yearbook, Oscar K. Buros, ed., appeared in 1938, 1940, 1949, 1953, and 1959.

[16]Oscar K. Buros, ed., The Nineteen Thirty Eight Mental Measurements Yearbook (New Brunswick, 1938), p. 92.

[17]Ibid., p. 93.

been improved in many respects; however, she indicated that this text showed considerable improvement over a previously developed one.[18]

The 1940 and 1949 editions of the yearbook[19] gave listings of other elementary and secondary clothing and textile tests. Persons reviewing these devices had the consensus that few of the individual questions demanded more than recall of information; thus, they were not as challenging as they might have been had the questions demanded the use of competencies higher on the continuum of the cognitive domain.

No high school clothing tests are mentioned in the fourth yearbook; the fifth yearbook mentioned only the high school clothing test.[20] This test, "Clothing: Every Pupil Scholarship Test," published by the Bureau of Educational Measurements, was begun in 1927 and has a new form almost every year. The review of this test indicated that there is still no data available on its reliability.

Cooperative Tests in Home Economics at College Level

The fourth Mental Measurements Yearbook[21] gives an account of the four subject-matter tests developed cooperatively by the American Home Economics Association and the Educational Testing Service. These tests were developed for use at the college level. Since these are the only

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[18]Ibid., pp. 93-94.

[19]Oscar K. Buros, ed., The Nineteen Forty Mental Measurements Yearbook (Highland Park, 1940), pp. 482-483.

[20]Oscar K. Buros, ed., The Fifth Mental Measurements Yearbook (Highland Park, 1959), p. 568.

[21]Oscar K. Buros, ed., The Fourth Mental Measurements Yearbook (Highland Park, 1953), pp. 553-555.

home economics subject-matter tests at the college level which are reported in any of the Mental Measurement Yearbooks, a description of their development follows.

In 1944 the American Council on Education asked the American Home Economics Association to work with them in developing a series of tests which might be used for measuring student achievement. The executive committee of the American Home Economics Association appointed three home economists to serve on a joint committee with representatives from the Measurement and Guidance Committee of the American Council on Education to investigate the possibilities of this project. During the spring of 1945 this committee conducted a nation-wide survey among members of the American Home Economics Association to determine whether or not the project would be fully supported by home economists. A large percentage of those persons returning a reply to the questionnaire gave approval to the plan and many offered one or more types of assistance. The replies served as "go" signals for the development of the tests.

The first tests developed were at the college level since the highest percentage of replies came from this area. Clara Brown Arny was appointed chairman of the committee on evaluation which served in an advisory and coordinating capacity with subcommittees from the subject matter areas. The first tests were developed in foods and nutrition and textiles and clothing because more devices had been developed previously in these areas. These former devices had proven that evaluation materials could be developed in these areas. The Cooperative

Test Service felt that these tests were comparable with those written in other fields of education.[22]

Testing Program for Home Economics. A recommendation that a nation-wide testing program for college students be inaugurated came from the college and university section at the 1948 meeting of the American Home Economics Association. The plan was approved by the executive board and a committee was appointed to do the necessary planning. In the fall of 1948 this committee met with representatives from the Educational Testing Service to draw up plans for the program. A preliminary survey to estimate the possible extent of the participation by colleges revealed that, regardless of the interest in the program, many budgets were not flexible enough to pay for such a program. The plan for the National Testing Program, as proposed, was quite flexible in that colleges might select their methods in scoring and interpreting data thus decreasing costs. The least expensive plan allowed the individual institution to score the tests locally; the most expensive plan involved the services of the Educational Testing Service in scoring and in reporting individual scores and norms.

Four tests covering four subject matter areas were available in the final testing plan. Each test was obtainable in two forms, X and Y. These were published during the period of 1948-1952. Although the tests were constructed scientifically, they were considered to be far

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[22]Clara Brown Arny, "Evaluating our Teaching," Journal of Home Economics, XL (January, 1948), pp. 7-8; "The 1949 Testing Program for College Students," Journal of Home Economics, XLI (January, 1949), pp. 15-16.

from perfect; however, they did represent a significant first effort and can provide useful information for the development of other tests.

Arny conceived many uses for the testing program. She believed that, evidence from these tests might help both high schools and colleges to more clearly define their curriculums. Information from the tests should help colleges in providing experiences for students to begin where the secondary program ended. If the tests were used as placement or exemption devices, Arny predicted that these three things were likely to happen:

1. The caliber of students taking more than the minimum amount of home economics in high school is likely to improve so that there will no longer be a negative correlation between scholastic ability and the number of units of home economics on students' high school records.
2. The widespread criticism of many elementary courses in college to the effect that they may repeat what is taught in a good school at the senior high school level may no longer be justified.
3. Really able students who represent the group from which future leaders in the field may be drawn, can complete the undergraduate requirements in less than four years and some of them may be well on the way to an advanced degree by the time they would normally receive their bachelor's.[23]

An account of the use of the Cooperative Test in Textiles and Clothing as a placement test in one institution is included on the following pages along with other reports of tests developed by various institutions.

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[23]Ibid., XLI, p. 16.

Clothing Placement Tests of Various Institutions

To take care of individual differences and varied learning experiences in textiles and clothing, different institutions of higher learning have developed their own placement tests. Accounts of the development and use of some of these placement tests in the area of clothing and textiles follow.

Study at West Virginia University. Davis[24] made a study at West Virginia University to ascertain the value of the Cooperative Test in Textiles and Clothing as a placement device for students at that university. In addition to this purpose, she endeavored to determine the validity of the test, and also examined the use of scores on the tests in predicting students' future success in clothing and textile courses.

Data were obtained from clothing placement test scores of freshmen during the period 1948 to 1951, inclusive; from profile sheets of students, and from scholastic records of students enrolled in the Division of Home Economics at the time the study was conducted. From the correlation of the data above, with the placement test scores, the investigator inferred that: (1) there appeared to be a noticeable tendency for the placement scores to parallel the percentile rank made on the ACE psychological examination; (2) there was apparently a greater relationship between the placement tests and the ACE percentile rank than between the placement test and the grades received in

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[24]Mildred Jean Davis, "Clothing Placement Tests for Entering Freshmen in the Division of Home Economics at West Virginia University, 1948-1951, Inclusive" (Unpub. Master's thesis, West Virginia University, 1952).

clothing and textile courses; (3) by studying the relationship between the placement test and clothing and textile subjects, there appeared to be some, but not a great tendency for the placement test score to coincide with clothing and textile grades.[25]

On the basis of the findings of her study, Davis made these recommendations:

1. That the Cooperative Test in Clothing and Textiles be continued as a placement device for students in clothing.
2. That the clothing items and textile items be scored separately to show in what area the student is weak or strong.
3. That students be exempt from elementary textiles on the basis of a high placement test score on the textiles section.
4. That perhaps in the near future students might be given credit hours for the courses from which they were exempt, making it possible for superior students to progress more rapidly.[26]

Development of Battery of Tests at Iowa State University. A personal interview[27] with Chadderdon revealed the extent of the research that has gone into the development of a battery of tests at Iowa State University which are being used as placement devices in clothing. The first pretest was developed in 1945 by Saddler.[28] This battery had a paper-and-pencil section, used to evaluate the students' acquisition

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[25]Ibid., p. 34.

[26]Ibid., p. 35

[27]Personal conference in April, 1960 and personal letter dated April 28, 1960.

[28]Jane Saddler, "Placement Test for College Home Economics Students: I. Elementary Clothing Construction" (Unpub. Master's thesis, Iowa State College, 1945) quoted in Edyth Bray, "The Development and Use of a Paper and Pencil Test for Determining Placement of College Students in Clothing Courses and for Measuring Achievement After Instruction" (Unpub. Master's thesis, University of Minnesota, 1949), p. 4.

of information and a practical section used to evaluate the sewing ability of students. In addition to these devices, an experience score was obtained by having each student report the number of garments she had made, both independently and under supervision. Garments were given a weighted numerical value.

The first tests had high coefficients of reliability. Using the split score method and applying the Spearman-Brown formula, the coefficients of reliability for the paper-and-pencil test was 0.84, and for the practical test, it was 0.88.

The practical test developed by Saddler was expensive to administer, required a large amount of time, and was difficult to score. In 1947 Evans[29] made a study to determine whether a suitable substitute could be found for the practical section of the Saddler test. Some of the variables studied at this time were: various mechanical aptitude tests, the ACE Examination for College Freshmen, the high school average, and both the paper-and-pencil and the practical sections of the Saddler Construction Test.

Evans used the final examination score in the elementary clothing construction course as her criterion. Very little relationship was found between the criterion, clothing construction, the high school average, and the intelligence test scores.

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[29]Virginia Evans, "Prediction of College Clothing Construction Achievement by Means of Mechanical Aptitude Tests and the Saddler Clothing Construction Test" (unpub. Master's thesis, Iowa State College, 1947), quoted in Edyth Bray, "The Development and Use of a Paper and Pencil Test for Determining Placement of College Students in Clothing Courses and for Measuring Achievement After Instruction" (unpub. Master's thesis, University of Minnesota, 1949), p. 5.

Of the variables studied, the O'Connor Dexterity Test, used with the paper-and-pencil subtest, seemed to give the best prediction. There was a correlation of 0.53 between these two variables. Evans' results indicated that the practical subtest could be eliminated from the prediction battery without serious loss.

A year after Evans completed her study, Scholtes[30] conducted the third study at Iowa State University; this investigation dealt with the further refinement of a test battery for use in predicting the clothing construction achievements of students. This study was similar to the one done by Evans. Scholtes tried several new experiments using some of the same plus some additional mechanical aptitude tests to see if they would be suitable for replacing the practical test first developed and used by Saddler. The mechanical aptitude tests Scholtes tried included the Minnesota Spatial Relations (speed and error sections), the Minnesota Rate of Manipulation, and the O'Connor Finger Dexterity Test. Both sections of the Saddler Test were also used in the study.

Scholtes devised a dexterity background questionnaire which indicated the amount of former experience students had in playing musical instruments, typing, sewing, and similar activities. These were weighted according to the number of years of experience the students had in each area. The final practical examination served as the

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[30]Mary Cletes Scholtes, "The Selection of a Test Battery for the Prediction of College Clothing Construction Achievement" (unpub. Master's thesis, Iowa State College, 1948) quoted in Edyth Bray, "The Development and Use of a Paper and Pencil Test for Determining Placement of College Students in Clothing Courses and for Measuring Achievement After Instruction" (unpub. Master's thesis, University of Minnesota, 1949), p. 6.

criterion of the study. The key for scoring this examination which had been developed by Evans was also revised.

Contrary to the findings of Evans, results of Scholtes' study indicated that the O'Connor Dexterity Test was not satisfactory for prediction of student performance in clothing. Neither was the Minnesota Rate of Manipulation; however, the Minnesota Spatial Relations Test (speed and error sections) gave satisfactory prediction when combined with the Saddler paper-and-pencil subtest. Since a slightly lower correlation was found between the paper-and-pencil subtest and the criterion and between the practical subtest and the criterion used in Evans' study, Scholtes recommended that a further study be made to verify the results.

In 1952, Patson[31] concluded a study which used a battery of tests to predict the clothing construction achievements of students at Iowa State University. The test battery included the revised Saddler Clothing Test, the revised dexterity questionnaire and the four spatial relations tests. Consultants from the Iowa State University Testing Bureau recommended four spatial relations tests for possible use in replacing the Minnesota Spatial Relations Test (speed and error sections). Each of these new tests seemed to measure the same or similar aptitudes as the Minnesota Spatial Relations Test and each was less expensive to use.

During the spring quarter of 1952, 142 students responded to the battery of tests, using the final examination as the criterion.

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[31]Nellie K. Patson, "Prediction of Construction Achievement Using Saddler Clothing Test, Dexterity Questionnaire and Four Spatial Relations Tests" (unpub. Master's thesis, Iowa State College, 1952).

Correlations between the final examination, the scores of the various tests and the questionnaire were calculated. After the statistical computation, the Miller Survey of Object Visualization Test was retained in the battery with the revised Saddler paper-and-pencil test and the revised finger dexterity background questionnaire. At the conclusion of the study, Patson worked out an equation to be used in classifying students into three sections of the beginning clothing construction class.

In April, 1960, a faculty member[32] from Iowa State University told the writer that the clothing staff at this institution is very well satisfied with the battery of tests as they are now used for evaluating the construction achievements of students.

Study Done for Macdonald Institute. In 1949 Bray[33] reported a study which she began in 1947 at Macdonald Institute to find some means of placing students in college clothing classes. She wanted to give those students who had ability and previous training an opportunity to do more advanced work. Bray developed a paper-and-pencil test which was used both as a pretest and a retest in 1947-1948. After trial and revision, the test was given again in 1948-1949. Both years the scores on the pretest were used as a basis for the grouping of students. Then, at the end of the year, the retest was used to measure students' achievements.

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[32]Personal conference, April 20, 1960.

[33]Edyth Bray, "The Development and Use of a Pencil and Paper Test for Determining Placement of College Students in Clothing Courses and for Measuring Achievement After Instruction" (unpub. Master's thesis, University of Minnesota, 1949).

The pretest used at Macdonald Institute differs from others reported in this study since it was administered to second-year and freshmen students. After completing the study, Bray drew these conclusions:

1. The test which was developed proved to be a valid device for classifying students in beginning clothing courses.

2. The test was reliable for accurate measurements.

3. The test was more discriminating when used as a pretest than when used as a retest; it was more discriminating for the one-year group than it was for the second-year group.

4. The students with ability and experience in clothing could accomplish more work in clothing classes and spend less time in the clothing laboratory.

5. In the classes that had been divided on the results of pretest scores, there was a greater opportunity for teacher-students planning and as a result students had a greater interest in the subject.[34]

Study at Southern Illinois University. Collins[35] made an investigation at Southern Illinois University concerning clothing placement tests. She indicated that the specific purposes of her study were:

1. To discover what some of the authorities in the field of tests and measurements consider valid and practical use of pretests, and to determine those which are applicable to the situation in clothing at Southern Illinois University.

2. To formulate a clothing pretest which will cover the subject matter included in Home Economics 127, as it now stands, more adequately than have tests used in the past.

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[34]Ibid., p. 31.

[35]Mildred Hart Collins, "A Pretest for Placement in Beginning Clothing Courses at Southern Illinois University" (unpub. research report, Southern Illinois University, 1956).

3. To construct the test in such a way that it may be quickly and easily scored, will make it possible to determine some areas in which students are deficient so that those of similar needs may be placed in sections together, and will serve as a guide for instructors in planning course work in order to satisfy designated needs as completely as possible.[36]

Three measures were used to help determine the students' clothing construction achievements. These were: a questionnaire which asked for information concerning the amount and types of students' past experiences in clothing construction, an objective examination to measure achievement of some of the subject matter in clothing, and a practical clothing construction examination.

The written test included items pertaining to selecting patterns and fabrics, understanding the pattern, preparing the fabric and cutting the garment, altering the pattern, and understanding garment details. Some of the problems in the practical examination were: making plain seams with pinked and edge stitched finishes, fell seams, bias binding, bias facing, and a hem such as should be used on a dress.

Collins recommended that the test be required of all students before they enrolled in the beginning clothing course unless they had completed a similar course elsewhere or had had no previous sewing experience. In addition, the results of the test were proposed for use as a basis for sectioning students according to their needs. She hoped that this might help eliminate the repetition of subject matter.

Study at Purdue University. In 1949 Wright[37] did a study at Purdue to find out what effects students' previous experiences had on

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[36]Ibid., p. 2.

[37]Janet Smith Wright, "The Effects of Students Previous Experiences on Achievement in a University Course in Clothing Construction" (unpub. Master's thesis, Purdue University, 1949).

their achievements in a clothing construction course. Wright attempted to evaluate the students' knowledge, skills, and attitudes using objective pretest, retest, practical tests of construction processes, and a questionnaire and attitude scale.

From the evidences obtained through the correlation of course grades with the amount of previous experience, the mean score computations and the attitude questionnaire, Wright drew these conclusions:

1. Previous experience in clothing construction is a factor in achievement in a university course in clothing construction.
2. The amount rather than the type of previous experience had a definite effect upon the attitude and achievement of the student.
3. Advanced, intermediate and beginners groups had differing attitudes in relation to the course.[38]

Study at University of Colorado. At the University of Colorado West[39] did a study similar to Wright's. The influence of high school homemaking on achievement in the beginning college clothing course was studied. She also sought to determine if majors in home economics made higher grades than nonmajors in the course. These conclusions were drawn from the findings:

1. High school homemaking was a factor in achievement in college clothing.
2. There seemed to be a definite relationship between the amount of high school homemaking and achievement in college clothing.
3. There was some indication that high school achievement, as shown by rank in this study, was as important a factor as number of years of high school homemaking on achievement in college clothing.

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[38]Ibid., p. 51.

[39]Aleta Brown West, "The Influence of High School Homemaking on Achievement in the Beginning Clothing Course at the University of Colorado" (unpub. Master's thesis, University of Colorado, 1954).

4. Majors did not make higher grades than nonmajors in college clothing, but the graduates did make higher grades in college clothing.

5. The stability and consistency shown by the graduate group in every category analyzed indicated that there were factors other than high school scholastic achievement, achievement in high school homemaking and number of years of high school homemaking which influenced achievement in college clothing.[40]

Study in New Mexico. A perusal of the literature indicated that a study done by Hoskins[41] was the first attempt in developing a clothing pretest for use in more than one institution. Hoskins communicated with personnel in the five colleges and universities in New Mexico offering home economics in their curriculums. Help was obtained from each school in formulating both clothing construction generalizations and a pretest for evaluating the students' clothing achievements. Clothing staff members in these institutions were asked to indicate the basic learnings which they included in their clothing construction courses, how much emphasis they gave each learning, whether they had previously used clothing construction pretests and what texts were used in the first course in clothing construction.

Generalizations were used as a guide in the formulation of the test items which were divided into three areas: principles of art as applied to the complete costume, principles of preconstruction processes, and principles of construction processes. Test items were apportioned according to the amount of emphasis placed on each area.

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[40]Ibid., p. 32.

[41]Mercede Nelson Hoskins, "Construction of a Basic Clothing Pretest for Use in the Colleges and Universities of New Mexico" (unpub. Master's thesis, New Mexico State University, 1959).

Revision of the pretest was based on the comments of a panel of critics. The pilot study involving students in third year homemaking was conducted at the Las Cruces High School.

Hoskins felt that the test was valid and reliable. Recommendations that a practical test accompany the written test were made. Furthermore, she believed that this pretest could be used for placement and possible exemption, that it could help increase motivation in students, and that it might serve as an aid in determining the amount and kind of emphasis to place on course work.

Study at Oklahoma State University. In 1959 Walsh[42] developed a written clothing pretest for use at Oklahoma State University. A pretest had been developed for use at this institution previous to this, but the test had become outdated. Using the old pretest as a guide, she devised a new one.

Walsh based her test items on ten objectives taken from the Oklahoma Homemaking Education Resourse Material for Clothing and Grooming, a teachers' guide used in secondary school programs. Individual items covered the areas of clothing construction which included the study of art principles in relation to clothing construction; elementary knowledge of textiles; pattern selection, use and adaptation to individual needs; sewing machine use and care; and knowledge of construction processes. This pretest was labeled a diagnostic achievement test and was used for placement in the beginning course in Clothing, Textiles, and Merchandising at Oklahoma State University.

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[42]Grace M. Walsh, "The Development of a Pencil and Paper Pretest for Placement of College Students in First Courses in Clothing, Textiles and Merchandising at Oklahoma State University" (unpub. Master's report, Oklahoma State University, 1959).

After the test items were formulated, students in a graduate seminar made suggestions for improving content and arrangement of test items. The test items with criteria for their evaluation were then presented to members of the Clothing, Textiles, and Merchandising faculty for their reaction. After a second revision, the test was administered to a pilot group of students.

In mentioning some of the limitations of the pretest, Walsh stated:

> The writer does not submit the pretest as a flawless instrument. There is much room for improvement. The most effective way to insure having a better test is to use the one now developed, study the results and offer criticisms and suggestions for improvements and then continue to use their successors.[43]

The Walsh placement test was administered to all incoming Oklahoma State University freshmen students indicating a desire to major in home economics during the summer of 1959. In the summer and fall of 1960 the incoming freshmen home economics students at both Mississippi State College for Women and Oklahoma State University responded to the Walsh Clothing Pretest. An item analysis of these responses will be found in Chapter III, page 53.

Summary

Research in evaluation in home economics has been divided into two major categories: that which determines the effectiveness of total programs in home economics and that which develops techniques and devices to assess the effectiveness of particular subject matter areas,

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[43]Ibid., p. 52.

individual courses or specific aspects of any course. This study is concerned with the revision and development of techniques which will appraise some of the clothing competencies found in entering college freshmen.

As early as 1923 Murdoch had developed an objective type evaluation device for use in clothing courses. The fervor for standardized objective type evaluation devices, which was so prevalent in the 1930's, has waned considerably. Today, educators realize the value of using a variety of instruments for evaluating the changes in student behavior.

A perusal of current literature indicated that there are no standardized clothing placement tests on the market; however, several colleges and universities have devised their own techniques for use in either placement or exemption, or perhaps both.

In reviewing studies that have been conducted and tests that are now in use, the writer has drawn these conclusions concerning clothing placement tests used in beginning clothing courses in colleges:

1. Almost all of the placement tests are used in courses which deal mostly with clothing construction.

2. Some schools use only written tests for placement of students, but in most instances, it is felt that this is an inadequate means of measuring the students' total clothing competencies.

3. The most frequently given reasons for not including a practical test for supplementation of the written test are that such tests are: too time consuming to take, too expensive to give, and too tedious and too time consuming to score.

4. The mere records of students' previous clothing experiences are not accurate enough to determine their status in clothing experiences when they arrive at college.

5. The recognition of the wide range of individual differences, the variation in clothing experiences offered at home, in 4-H and in secondary schools, and the dearth of adequate evaluation devices make it imperative that a more satisfactory means of judging students' clothing achievements be developed.

CHAPTER III

REVISION AND ADDITION TO WRITTEN TEST

Introduction

Four of the subproblems underlying the study are: (1) the development of a questionnaire-check list to obtain information pertaining to students' previous experiences in clothing selection, construction, and care; (2) the identification of some clothing objectives common to the secondary curriculums in Mississippi and Oklahoma and beginning clothing courses at Mississippi State College for Women and Oklahoma State University; (3) the examination of the Oklahoma State University Clothing Pretest in order to determine if it might be improved and how, and (4) the development of an additional evaluation device to determine the ability of students to solve problems related to clothing selection, construction, and care. This chapter deals with the methods used for solving these subproblems.

Development of Questionnaire-Check List

A review of previous studies and writings[1] have indicated that students entering college have had a wide range of clothing experiences. In these studies the questionnaire has been mentioned as one

[1]The writer studied questionnaires developed for use at the University of Georgia, the University of Southern Illinois, and Oklahoma State University.

means of obtaining information concerning where students have received these experiences, how many experiences they have had, and how much help they have had. Walsh reported that

> Colleges and universities that have used previous clothing experiences as a placement device have found that this is very unreliable. The quantity of clothes that a student had made would not determine the quality of her work.[2]

If one agrees with the preceding statement, he would not use previous clothing construction experiences as a means for placing students in courses; however, an account of previous experiences of students would seem to indicate the need for some evaluation devices for placement. A combination questionnaire-check list was developed to get an account of students' previous clothing experiences. This device would differ from those reviewed in that it would ask for experiences in clothing selection and practices in clothing care as well as experiences in clothing construction.

Questionnaires used in recording sewing experiences of students at the University of Georgia, Southern Illinois University, and Oklahoma State University were reviewed to get ideas for developing the device. The following assumptions were used as guides in constructing the instrument:

1. A questionnaire-check list will supply information concerning the previous experiences of students in clothing selection, construction, and care.
2. There will be an indication of the places students have received their previous experiences.

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[2]Grace M. Walsh, "The Development of a Pencil and Paper Pretest for Placement of College Students in First Courses in Clothing, Textiles and Merchandising at Oklahoma State University" (unpub. report, Oklahoma State University, 1959), p. 4.

3. There will be some indication of the experiences which students feel that they can perform alone and some indication of those experiences which will require further aid.

4. The account of the experiences and practices asked for will be representative of all content areas in this study (selection and purchase of clothing, construction of clothing, and care of clothing).

5. The experiences and practices asked for will include a hierarchy of competencies in these content areas.

In addition to getting a record of the past sewing experiences of students, the questionnaire was designed to supply information such as the following: How many and what kind of garments had been purchased for the individual within the past year? Were these garments selected alone, or who had aided in their selection? What factors had been considered in making purchases of ready-made clothing? Where had the student learned the importance of considering these factors? What practices in clothing selection, construction, and care could be done satisfactorily without advice or assistance from anyone? What practices would require further help? What practices had been followed in caring for clothing and how consistently had these practices been followed?

The first four questions of the questionnaire asked for general information pertaining to where the student received her previous training in clothing. The remainder of the questions were of the check list type since this sort of question could be answered in a very brief period of time. Major objectives of the study were kept in mind when the questionnaire-check list was being developed. Students were not asked to answer questions concerning all of their sewing experiences or practices. When the questionnaire-check list was developed, it was submitted to the writer's major advisor and a member of the clothing

staff at Mississippi State College for Women for criticism. Revisions were made according to their recommendations.

Pilot Use of Questionnaire. Thirty students in two sections of the beginning clothing course at Mississippi State College for Women responded to the questionnaire-check list in September, 1960. Following an analysis of these responses, modifications were made to strengthen weaknesses in the instrument. The device was also evaluated to determine if it had met the assumptions which had served as criteria for its formulation. The writer felt that all the criteria had been met to a certain degree. However, the instrument might be improved if more questions were included asking students if they need further help with clothing care practices. An effort should be made to make the hierarchy of competencies in the three clothing areas more functional (A copy of this questionnaire may be found in Appendix A).

Responses to Questionnaire. During the first week of the second semester, 1961, freshmen students enrolled in the beginning clothing courses in the two institutions used in this study were asked to respond to the revised questionnaire-check list. In order to economize on the amount of class time used for the study, the students were asked to answer the questions outside of class. An analysis of the data gave much pertinent information about the clothing experiences of these students before they came to college. A brief summary of their responses follows:

1. Over 96 per cent of the respondents had had at least one clothing unit in secondary school.
2. Eighty-eight per cent indicated that they had done some sewing at home.
3. Forty-seven per cent had had clothing projects in 4-H.

4. The total group averaged making seven garments in secondary home-making classes, 2.6 garments in 4-H, and 23 garments at home. The types of garments made ranged from shorts to formals.

5. Responders indicated they had averaged purchasing over 46 garments in the year previous to their coming to college. The largest number of purchases was shoes. Well over half of the students stated that the purchases had been made without advice from anyone.

6. Students stated that the factors that received most consideration in buying ready-made garments were suitability of color and fit of the garment. The factor that received least consideration was choice of fibers from which the garments were made.

7. When the respondents were asked which construction and selection practices they thought they could do satisfactorily without help, 70 per cent indicated that they knew how to place patterns on fabric, and 82 per cent said that they could choose becoming and appropriate colors for garments. Sixty-seven per cent of the respondents felt that they needed additional help in properly locating and making machine buttonholes and 51 per cent needed help in choosing becoming clothes with the best lines for the figure.

8. Most of the students did indicate that they hung up their clothes regularly. They indicated that it was only occasionally that they checked to see if their clothes needed repairs, and a large per cent indicated that they rarely determined when to use syndets or neutral soaps in laundering clothing.

A more detailed summary of the responses made by the 112 students may be found in Appendix B. The data indicated that students enrolled in freshmen clothing courses at Mississippi State College for Women and Oklahoma State University came to classes with a varied background of experiences. The data would seem to support the assumption that a valid and reliable placement test could help to group students in order that they might perform at their greatest capacity. With these factors in mind, the writer revised the Oklahoma State University Written Clothing Pretest and added other devices to assess additional clothing competencies.

Preliminaries for Revising Written Placement Test

As stated in Chapter I, the study is based upon the assumptions that education is a process which seeks to change the behavior of individuals, and the kinds of changes in individual behavior patterns which schools seek to bring about are the educational objectives. These educational objectives represent the changes educators hope will transpire in individuals.

One of the first steps in developing this study was the identification of objectives. The following criteria were used in their selection:

1. Objectives are common to the beginning courses in textiles and clothing offered at Mississippi State College for Women and Oklahoma State University.
2. Objectives are included in the secondary homemaking guides of Mississippi and Oklahoma.
3. Objectives selected will be common to the four programs mentioned in 1 and 2 above.
4. Members of the clothing, textiles and merchandising faculties at Mississippi State College for Women and Oklahoma State University will agree that objectives chosen are important in the beginning courses at both institutions.
5. Evaluation techniques are now available or may be devised for evaluating the students' status in reaching the objectives.

It was the belief of the writer that some common objectives for the secondary schools of Mississippi and Oklahoma and the beginning clothing courses at Mississippi State College for Women and Oklahoma State University could be identified. The writer did not depart from the belief that individual programs in homemaking and home economics should provide for individual differences and local needs, but she felt

that, in addition to these individual needs, some clothing competencies common to students at both secondary and college level could be identified.

Copies of the secondary Homemaking Teachers Guide for Mississippi and the Homemaking Education Resource Material for Clothing and Grooming for Oklahoma were reviewed, and a chart was made, comparing the objectives for the clothing units in the two states. Copies of the objectives for the beginning college clothing courses at Mississippi State College for Women and Oklahoma State University were obtained. These were placed on the chart with the secondary clothing objectives in order that another comparison might be made.

The next step was the classification of the objectives; they were arranged according to the content areas they represented and according to the student competencies they exemplified. The content areas chosen for the study were clothing selection, clothing construction, and clothing care. The competencies chosen for the study were: knowledge of the selection, construction, and care of clothing; application of principles pertaining to these areas of clothing; and the level of achievement of judgmental and manipulative skills pertaining to the selection, construction, and care of clothing.

In the final analysis, ten objectives met the criteria prescribed; they fell into the given content areas and exemplified the four competencies mentioned earlier.[3] Following the identification of the common objectives, steps were taken to define them in terms of student

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[3]These ten objectives are given on page 9 in Chapter I.

competencies. A breakdown into types of competencies exemplified in each type of objective will be discussed later in the chapter.

The ten clothing objectives were submitted to the homemaking supervisors in Mississippi and Oklahoma for judgment in determining their relevance in meeting needs of secondary students who enroll in homemaking. Some of the assistant state supervisors also responded to the objectives. The state supervisors were asked to recommend five secondary homemaking teachers in each state whom they felt would be willing to give their opinions as to the importance of these objectives in their clothing programs. Both supervisors sent the names of seven secondary teachers from each state. These 14 persons were contacted, and ten cooperated in the study (see Appendix C for the Check List sent to the teachers).

In addition to the responses from the persons connected with the secondary homemaking programs, the objectives were submitted to the instructors of beginning clothing courses at both Mississippi State College for Women and Oklahoma State University for constructive criticism. Table I shows the per cent of secondary teachers, college teachers and members of the state homemaking supervisory staffs who considered the objectives "important".

Six of the objectives were rated "important" by all of the college teachers and members of the state supervisory staff. Secondary teachers rated 40 per cent of the objectives "important". Objectives 1, 2, and 4 were rated "important" by all three groups of respondents. Only one-third of the members of the state supervisory staffs considered objective 5 "important".

TABLE I

PER CENT OF OBJECTIVES RATED "IMPORTANT" BY SECONDARY TEACHERS, COLLEGE TEACHERS AND SUPERVISORY STAFF

Objectives	Per Cent Responding		
	Secondary Staff	College Staff	Supervisory Staff
1. Acquire knowledge concerning the construction of clothing.	100	100	100
2. Develop some skill in the construction of clothing.	100	100	100
3. Develop judgment concerning good and poor workmanship in clothing construction.	90	100	87
4. Acquire knowledge concerning the selection of clothing and accessories for individuals.	100	100	100
5. Apply skillfully principles and elements of design to clothing selection for individuals.	100	100	33
6. Develop the ability to use appropriate principles in wardrobe planning and clothing selection.	80	100	100
7. Be cognizant of the psychological, sociological, and economic factors affecting clothing selection.	30	67	50
8. Apply some psychological, sociological, and economic principles when selecting clothing.	50	50	100
9. Acquire knowledge concerning proper care of clothing.	90	87	87
10. Use appropriate principles in caring for clothing.	90	87	100

There was some inconsistency in the secondary teachers' responses to Objectives 7 and 8. Only 30 per cent of the respondents indicated that students should be aware of psychological, sociological, and economic principles affecting clothing selection; however, 50 per cent of these persons indicated that they felt it was important for students to apply some of these principles when selecting clothing.

Space was also provided on this check list for the respondents to list other objectives which they considered important in the teaching of clothing. No other objectives were given.

Since the judges gave a favorable response to the objectives identified, they were used as a basis for the development of the individual items in the placement test. Less emphasis was given to those objectives which the judges felt were the least important.

A detailed outline of the three main content areas, clothing selection, construction, and care, was developed. This outline included the topics one might expect to find in a clothing unit or course at either the secondary or college level. The writer felt that the selection of the proportion of individual items from each of the main content areas should be based upon the amount of time instructors spent in providing experiences. The same panel of judges who evaluated the importance of the ten objectives used in the study, indicated the approximate amount of time they devoted to each of these. The mean of time devoted to each of the objectives was used as a basis for determining what proportions of individual items should come from the main content areas (this check list may be found in Appendix C).

Generalizations covering the three main content areas were formulated. The criteria for developing and using the generalizations in the study were:

1. Generalizations are written in the writer's own words. They are implied in the majority of the texts, reference books, curriculum guides, syllabi, magazines and written materials used in the secondary homemaking programs in Mississippi and Oklahoma and the beginning clothing courses at Mississippi State College for Women and Oklahoma State University.

2. The generalizations should have wide application covering one or more of the subareas of the three content areas used in this study.

3. The proportion of generalizations used in each content area will be determined by the approximate amount of time devoted to the objectives.

4. The generalizations should be ones which the students could use when asked to make predictions, to draw conclusions, or to solve problems which they encounter in these areas of clothing.

5. The terms "generalization" and "principle" will be used interchangeably in this study.

Many educators stress the importance of teachers aiding students in learning to generalize and to apply generalizations in solving new problems which arise. In the Eight Year Study the Committee on the Evaluation of Effective Methods of Thinking indicated that all of the schools believed that the behavior patterns exemplifying critical thinking were: (1) ability to formulate reasonable generalizations from specific data and (2) ability to apply principles to new situations.[4]

Gates and others, in speaking of generalizing, said:

> /it/ is the process of identifying the common aspects or basic relationships in a variety of specific situations. Generalizing validly is an active process of exploration, discovery,

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[4]Eugene R. Smith and Ralph W. Tyler et al., Appraising and Recording Student Progress (New York, 1942), p. 19.

> and utilization, and ordinarily necessitates a large amount of experience. General ideas are not acquired ready-made, but are the results of a growth process.[5]

In stating uses of generalizations, Pattison, Barbour, and Eppright[6] suggested that they should not be memorized by students, but they could be used by the educator as a basis for learning experiences. Following this assumption, the writer developed generalizations to cover the content areas which had already been identified. Individual test items were based on selected generalizations. Examples of the generalizations and test items are cited later in this chapter.

After identifying the common objectives for the study, defining some competencies involved in the objectives, setting up a table of content in the clothing areas, apportioning the approximate per cent of items to come from each content area, and formulating generalizations to cover each content area, the writer studied the written placement test which had been used at Oklahoma State University for the past two years. The following section describes the item analysis of the individual items on the written clothing pretest developed by Walsh. Discriminating items were used as a basis for the revised written test.

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[5]Arthur I. Gates et al., Educational Psychology (New York, 1948), p. 441.

[6]Mattie Pattison, Helen Barbour, and Ercel Eppright, Teaching Nutrition (Ames, Iowa, 1957), p. 44.

Item Analysis of Walsh Test[7]

Walsh[8] indicated that the written pretest which she developed for use at Oklahoma State University in 1959 was not perfect. She recommended that the pretest be revised as often as necessary to eliminate items that were not discriminating and to replace them with items which would discriminate.

Permission was obtained to use the Walsh Pretest at Mississippi State College for Women during the fall semester, 1960. An analysis of the freshmen clothing students' responses to the pretest at this Mississippi institution and at Oklahoma State University was made to determine which items were discriminating. The Walsh pretest is located in Appendix D. After scanning this test and looking at Table II, one may observe that the items which proved to be discriminating dealt with: basic weaves, color schemes, seam finishes suitable for various materials, pattern alterations, and pattern placements. The same test items in Part I of the test were discriminating at both schools, but the rank order of discrimination differed between the students. In Part II, different items were discriminating. Two items were discriminating at Oklahoma State University, and three were discriminating at Mississippi State College for Women.

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[7]For brevity, the Oklahoma State University Clothing Pretest will be referred to as the Walsh Placement Test.

[8]Walsh, p. 55.

TABLE II

RANK ORDER OF DISCRIMINATING ITEMS FROM RESPONSES OF 128 FRESHMEN ON THE OKLAHOMA STATE UNIVERSITY CLOTHING PRETEST

Oklahoma State University	Item No.	Rank Order	Mississippi State College for Women	Item No.	Rank Order
Part I	10-E	1	Part I	17-C	1
	17-B	2		17-B	2
	10-D	3		10-D	3
	17-C	4		10-J	4
	17-A	5		28-B	5
	36-A	6		36-A	6
	10-J	7		10-E	7
	28-B	8		17-A	8
Part II	B-2	1	Part II	B-13	1
	B-14	2		B-3	2
				B-7	3

The purpose of an item analysis is to determine the difficulty and the discriminating value of each item in a test. Stanley devised a simplified method for computing an item analysis which was used in this study. A brief outline of the method follows:

1. As the papers were scored, each incorrectly answered or omitted question received a red mark.

2. On the basis of each students' total score, the upper and lower 27 per cent of the students were located. These papers were taken for analysis, and the others were put aside.

3. Start with Item I on the test. Subtract the number of persons in the high group who missed the item from the number in the low group who missed it.

4. Repeat Step 3 for every question in the test, each time determining the difference between the number of students in the low group who missed the item and the number in the high group who missed it.

5. List the differences in ascending order, beginning with the highest, positive one and going down to the largest, negative one, together with the items' number in the test...[9]

Ross and Stanley devised a table which determines whether a given test item discriminates significantly between a "high" and a "low" group. The factors taken into consideration in determining significant discrimination are: total number of persons tested, number in the high group, number in the low group, and number of options which are given for each test item.[10]

The individual items in the Walsh pretest (vide Table II, page 53) which proved to be discriminating were used as a basis for the revision of the written test. Since the discriminating items were matching and true-false statements or practices, both types were included in the revised test. The following section gives an account of the development of the written placement test:

Revised Portion of Written Test

The first portion of the revised written placement test was devoted to the evaluation of the students' knowledge of clothing selection, construction, and care. In speaking of evaluating knowledge, writers of The Taxonomy of Educational Objectives said:

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[9]C. C. Ross and Julian C. Stanley, Measurement in Today's Schools (3rd ed., New York, 1954), p. 118.

[10]Ibid., p. 448.

> Probably the most common educational objective in American education is the acquisition of knowledge or information... frequently knowledge is the primary, sometimes almost the sole kind of, educational objective in a curriculum. In almost every course it is an important basic one. By knowledge, we mean that the student can give evidence that he remembers either by recalling or recognizing, some idea or phenomenon with which he has had experience in the educational process.[11]

The most cursory reading of the standardized tests available, or even teacher-made tests, verified that tremendous emphasis is given to this kind of remembering or recall. The Taxonomy of Educational Objectives has given various classifications of knowledge. In a broad sense the classifications range from the simple to the more complex behaviors and from the concrete or tangible to the abstract or intangibles.[12]

Many educators maintain that more test items have been developed to evaluate knowledge than any other behavior because it can be measured with greater efficiency and economy, and a relatively small sample of problems and questions in this area can be used to test a very large universe of knowledge.

Objectives to Evaluate Students' Knowledge. The objectives in this study which were used in seeking to assess the students' status in knowledge of clothing selection, construction, and care were:

1. To acquire knowledge concerning the construction of clothing.
2. To acquire knowledge concerning the selection of clothing and accessories for individuals.

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[11]Benjamin S. Bloom, ed., Taxonomy of Educational Objectives: Handbook I: Cognitive Domain (New York, 1956), p. 28.

[12]Ibid., p. 30.

3. To be cognizant of the psychological, sociological, and economic factors that affect clothing selection.

4. To acquire knowledge concerning the proper care of clothing.

Defining the Objectives. In all subject matter areas there is certain basic information which is necessary for students to know and understand before they can move on to more complicated problems in the area. This information, known as factual knowledge, may be identified as simple terms, names, dates, definitions, principles, generalizations or other "specifics".

There seems to be a consensus among educators that far too much emphasis has been placed upon the evaluation of information which students possess in any given field. Many advocate that care should be taken to prevent an overbalance of evaluation of this competency; however, since this serves as the foundation upon which other cognitive competencies are based, it is considered essential that any evaluation program should include the measurement of knowledge.

In order to attain the objectives in this portion of the study, students would be expected to achieve certain competencies. For example, the following competencies might be practiced by individuals who have accomplished the objective, "to acquire knowledge concerning the selection of clothing and accessories for individuals". They might:

1. Recognize terms dealing with the structure of textile fibers.

2. Know the names of finishes given to the fibers.

3. Know the names of weaves commonly used in fabrics.

4. Recognize the weaves commonly used in fabrics.

5. Acquire a vocabulary which would prove helpful in reading and interpreting magazine articles and books.

6. Know some desirable and undersirable characteristics of clothes.
7. Know both desirable and undesirable characteristics of accessories.

Types of Test Items Included in the Revised Written Test

Since the discriminating items in the Walsh pretest were of the matching and true-false varieties, both types were included in the revised test. In addition, the revised portion of the test, which was to evaluate students' knowledge of clothing selection, construction, and care, included multiple-choice items. The Walsh test also had multiple-choice items, but they had varying numbers of options, and sometimes more than one item was correct. The test was revised so that each statement or question now has the same number of options, and only one answer is considered correct.

Matching Items. Most of the matching problems for this portion of the test were revisions from the Walsh pretest since these items had proved to be discriminating; however, the items were reworded to meet the following criteria:

1. A single matching item has homogeneous premises and responses.
2. No more than five responses are included in any item.
3. There is at least one extra response for each item.
4. The responses are arranged in alphabetical order.
5. The premises are arranged in the left column, and the responses are arranged in the right column.
6. Specific instructions are given for each matching exercise.
7. Both columns in the matching items have a caption.
8. Test items are so spaced that all parts appear on a single page.

Each problem in the matching part of the test was based upon a generalization which the instructors of the freshmen clothing courses at Mississippi State College for Women and Oklahoma State University considered important.

Problem I is concerned with various weaves and fabrics which are examples of these weaves. This problem may be found in Appendix E. The generalization from which this problem was taken is:

> Recognition of the basic weaves can serve as an aid in choosing fabrics to meet the consumers particular needs.

Student Responses. Six problems were presented in the Matching Section of the written test. The students were asked to study Column I and Column II under each problem. From Column II they were to choose one word which matched the word or phrase in Column I. No word in Column II was to be used more than once. There were five choices for a correct answer. The students were asked to record their choice for a correct answer on the IBM answer sheet provided at the beginning of the test.

Analysis of Responses. An analysis was made of the individual students' responses to each of the 20 matching items included in Part I of the written test. When this portion of the test was submitted to the judges for criticism, there were problems from the three clothing content areas; however, the revised test eliminated the problem on the care of clothing leaving only selection and construction problems. The problem on the care of clothing was eliminated because the majority of the judges said that it was too difficult; they also indicated that the written test was too long.

A study of Table III reveals the individual matching items which proved to be discriminating using the Ross and Stanley Formula described on page 54. Nine of the 20 items, which was 45 per cent, proved to be discriminating.

TABLE III

ITEM ANALYSIS OF RESPONSES TO MATCHING ITEMS MADE BY UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
1	17	6	11	x	x
2	12	3	9	x	x
3	18	8	10	x	x
4	21	10	11	x	x
5	13	7	6		x
6	11	4	7		x
7	20	11	9	x	x
8	20	6	14	x	x
9	14	2	12	x	x
10	18	8	10	x	x
11	20	19	1		
12	5	9	-4		
13	1	0	1		
14	0	0	0		
15	12	11	1		
16	13	6	7		x
17	12	7	5		x
18	17	19	-2		
19	3	3	0		
20	14	6	8	x	x

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

Various methods have been used to express significance of difference in individual test items. One of these methods has been described by Arny. She indicated that the simplest way to determine discriminating items is to set an arbitrary standard, and she advocated the use of a difference of 15 per cent between the responses in the higher and the lower groups.[13] Using this method of determining item discrimination, the writer found that four more items were added to the previously mentioned nine items. This made 65 per cent of the items discriminating.

A further look at Table III indicates that two items, 14 and 19, show no discrimination, and two items, 12 and 18, discriminate in the wrong direction. After making an analysis of the individual responses of students in the upper and lower 27 per cent of the class, results showed that no student missed item 14, and the same number of students in both groups missed item 19; therefore, neither item contributed anything in terms of differentiation.

Ahmann and Glock[14] have concluded that items of extremely high or extremely low levels of difficulty tend to reduce the discriminating power of a test. These writers give a simple formula for computing an index of discriminating power. The formula is:

$$D = \frac{U-L}{N}$$

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[13]Clara Brown Arny, Evaluation in Home Economics (New York, 1953), p. 329.

[14]J. Stanley Ahmann and Marvin D. Glock, Evaluating Pupil Growth (Boston, 1958), p. 299.

where

D = index of item discriminating power

U = number of pupils in upper group who answer the test item correctly

L = number of pupils in lower group who answer the test item correctly

N = number of pupils in each group[15]

In interpreting the "D" values, Ahmann and Glock said that any D-values above 0.40 could be considered as good, any between 0.40 and 0.20 could be considered satisfactory, and any between 0.20 and 0 could be considered poor. It is obvious that negative values identify items that differentiate among students in the wrong direction.[16]

Table IV shows the discriminating power of the 20 matching items. Twenty per cent of the items have good discriminating power; 50 per cent have satisfactory discriminating power, and 20 per cent have poor discriminating power. Ten per cent discriminate in the wrong direction.

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[15]Ibid., p. 296.

[16]Ibid., p. 299.

TABLE IV

DISCRIMINATING POWER OF MATCHING ITEMS USING RESPONSES OF UPPER AND LOWER 27 PER CENT OF 96 STUDENTS[a]

Item No.	Index of Discriminating Power (per cent)	Rating[b]	Item No.	Index of Discriminating Power (per cent)	Rating[b]
1	42	good	11	4	poor
2	35	satisfactory	12	-15	poor
3	39	satisfactory	13	4	poor
4	42	good	14	0	poor
5	23	satisfactory	15	4	poor
6	27	satisfactory	16	27	satisfactory
7	35	satisfactory	17	20	satisfactory
8	54	good	18	-8	poor
9	46	good	19	23	satisfactory
10	39	satisfactory	20	31	satisfactory

[a]Vide page 60 for formula for computing index of discriminating power.

[b]Any discriminating value +0.40 is considered good. Any discriminating value between +0.40 and +0.20 is considered satisfactory. Any discriminating value between +0.20 and 0 is considered poor.

An examination of the data in Table V shows the per cent of matching items which were answered correctly in the two content areas. In each instance a larger per cent of the selection items were answered correctly than the construction items. Almost three-fourths of the selection items were answered correctly by the total group responding to the written test. Over four-fifths of the items received correct responses by the upper 27 per cent of the respondents. The ten students ranking highest on the total test answered 86 per cent of the items correctly. As would be expected, the students ranking in the

lower 27 per cent of the group had a lower score; however, two-thirds of the selection items were answered correctly, whereas approximately three-fifths of these items got a favorable response from the ten students receiving the lowest scores.

TABLE V

COMPARISON OF PER CENT OF MATCHING ITEMS ANSWERED CORRECTLY

Content Area	No. of Items	Group of Students	Per Cent of Items Answered Correctly
clothing selection	7	total group (96)	71
		upper 27% (26)	81
		lower 27% (26)	67
		highest ranking 10	86
		lowest ranking 10	58
clothing construction	13	total group (96)	58
		upper 27% (26)	68
		lower 27% (26)	44
		highest ranking 10	74
		lowest ranking 10	41

Approximately 60 per cent of the construction items were matched correctly by the 96 respondents. There was almost a 25 per cent difference between the responses to items by the students in the upper and lower 27 per cent of the total group. An even wider range of differences in scores may be noted for students making the ten highest and ten lowest scores on this part of the test.

A review of the criteria for the matching items indicated that these test items had conformed to the standards which were set up for this portion of the written test. Sixty-five per cent of the items were discriminating; 20 per cent of the items had good discriminating power; 50 per cent were rated satisfactory; 20 per cent were rated poor, and 10 per cent discriminated negatively.

Multiple-choice Items. The multiple-choice item is the most popular form of test item used in objective tests. Perhaps this popularity is due to its freedom from many of the weaknesses inherent in other forms. This form may be used to evaluate factual details or it may extend to the evaluation of complex abilities or fundamental understandings. In this device, more emphasis is placed upon the evaluation of factual details.

Since multiple-choice items usually have more than two alternatives, there is less possibility of guessing the correct answer than when true-false statements are used. This type of item can be used to evaluate higher levels of mental processes, has finer discrimination, and covers more varied types of instructional objectives than true-false items.

The following criteria were used in formulating the problems and questions for multiple-choice items:

1. Each test item is supported by a generalization that the majority of home economists consider basic to the beginning clothing course.
2. Stems of individual items give the basic concepts which are being tested.
3. Distractors and the correct answers are relatively uniform in length.

4. Distractors are grammatically consistent with the stems.

5. Ideas for items come from common texts, experiences of the writer, reference books, curriculum guides and other materials used in the beginning college clothing courses and the secondary schools in Mississippi and Oklahoma.

Each item stemmed from a generalization which instructors in the beginning clothing courses considered important. The following generalizations and items are typical of those found in Part II of the test:

Generalization:

> Figure irregularities may be partially camouflaged through the use of carefully chosen textures.

Test Item:

> A tall, thin girl should choose a fabric for a dress whose texture is:
>
> 1. very bulky.
> 2. medium weight.
> 3. thin and flimsy.
> 4. soft and clinging.

Generalization:

> In order to minimize the number of fittings when making a garment, pattern alterations may remove differences between body and pattern measurements.

Test Item:

> To shorten a blouse pattern one inch, one would
>
> 1. take a one-inch horizontal tuck in the pattern.
> 2. take a one-inch vertical tuck in the pattern.
> 3. take a one-half inch horizontal tuck in the pattern.
> 4. take a one-half inch vertical tuck in the pattern.

Student Responses. Students were asked to read the 25 questions or problems carefully. Each item had four possible answers, and only one was considered correct. The chosen response was to be placed in the appropriate space on the answer sheet.

Analysis of Responses. An analysis was made of the individual students' responses to each of the 25 multiple-choice items in Part II of the written test. Table VI gives an account of the discriminating items using both the Ross Stanley Chart and the 15 per cent rate of discrimination. Eight or approximately one-third (32 per cent) of the items were distriminating when the Ross and Stanley standard was used. These were items 26, 28, 29, 30, 31, 38, 40, and 44. In addition to these, items 21, 23, 25, 32, 34, 37, 43, and 45 were discriminating at the 15 per cent level. This brought the total per cent of discriminating items to 64 per cent in this section of the test.

Item 36 had no discriminating power, while items 26, 33, 35, and 42 did not show enough difference between the upper and lower 27 per cent groups to be discriminating, and items 22, 24, 39, and 41 showed discrimination in the wrong direction. One might observe these last mentioned items and speculate as to the reasons why more students in the lower group than in the upper group responded correctly to them. Were the items stated in a way that the answers appeared to be ambiguous to the students in the upper group? Were the individual problems or questions worded clearly? How realistic were the distractors? Were the test items too difficult?

TABLE VI

ITEM ANALYSIS OF RESPONSES TO MULTIPLE-CHOICE ITEMS MADE BY UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
21	16	9	7		x
22	13	15	-2		
23	13	6	7		x
24	10	15	-5		
25	5	0	5		x
26	20	17	3		
27	19	10	9	x	x
28	18	4	14	x	x
29	22	13	9	x	x
30	16	5	11	x	x
31	17	3	14	x	x
32	6	1	5		x
33	4	3	1		
34	14	9	5		x
35	20	18	2		
36	23	23	0		
37	7	1	6		x
38	18	5	13	x	x
39	7	9	-2		
40	16	7	9	x	x
41	1	2	-1		
42	17	15	2		
43	12	7	5		x
44	18	9	9	x	x
45	25	19	6		x

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

A closer inspection of items 22, 24, 39, and 41 was made by tabulating and comparing all of the responses to the items made by students in the upper and lower groups. This close scrutiny of each

response could provide valuable information to the test developer, and in this study consideration has been given to techniques in test development as well as to the end result. Table VII gives an account of the responses to each of the distractors as well as to the correct responses to the items. A study of item 22 shows that no one in the upper group responded to option 1, and only one person responded in the lower group. Two persons in the upper group responded to option 2, but

TABLE VII

RESPONSES TO ALL OPTIONS OF ITEMS 22, 24, 39, AND 41 MADE BY UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	Option	No. of Responses	
		Upper 27 Per Cent	Lower 27 Per Cent
22	1	0	1
	2	2	0
	3	11	13
	4[a]	13	12
	omit	0	0
Total		26	26
24	1	2	2
	2	10	4
	3[a]	11	16
	4	3	4
	omit	0	0
Total		26	26
39	1	8	5
	2	1	2
	3	0	0
	4[a]	17	19
	omit	0	0
Total		26	26
41	1	0	0
	2	0	0
	3	2	1
	4[a]	24	25
	omit	0	0
Total		26	26

[a]Correct answer to item.

not one in the lower group checked this option. Almost half of the responders in the upper group used option 3, and half of the lower group did check this option. One-half of the upper group answered the item correctly, and 46 per cent of the lower group made the correct response.

For item 24, the same number of persons responded to option 1 from both groups of respondents. More persons in the upper group made a response to option 2. More persons in the lower group made the correct response than in the upper group.

For item 39, more persons in the lower group than in the upper group made the correct response. No one responded to option 3, and no one failed to answer the question.

All of the students in the lower group, with the exception of one person, answered item 41 correctly. All of the students in the upper group, with the exception of two persons, answered the item correctly.

Table VIII records the indices of discriminating power for each of the multiple-choice items. Only one-sixth of the items are considered to have good discriminating power; approximately one-half of the items have a poor classification, and about one-sixth discriminate in the wrong direction.

TABLE VIII

DISCRIMINATING POWER OF MULTIPLE-CHOICE ITEMS USING RESPONSES OF UPPER AND LOWER 27 PER CENT OF 96 STUDENTS[a]

Item No.	Index of Discrimination (per cent)	Rating[b]	Item No.	Index of Discrimination (per cent)	Rating[b]
21	27	satisfactory	36	0	poor
22	-8	poor	37	27	satisfactory
23	27	satisfactory	38	50	good
24	-20	poor	39	-8	poor
25	20	satisfactory	40	35	satisfactory
26	12	poor	41	-4	poor
27	35	satisfactory	42	8	poor
28	54	good	43	20	satisfactory
29	35	satisfactory	44	35	satisfactory
30	42	good	45	27	satisfactory
31	54	good			
32	20	satisfactory			
33	4	poor			
34	20	satisfactory			
35	8	poor			

[a]Vide page 60 for formula for computing index of discrimination.

[b]Any discriminating value +0.40 or above is considered good. Any discriminating value between +0.40 and +0.20 is considered satisfactory. Any discriminating value between +0.20 and 0 is considered poor.

According to Table IX, over 40 per cent of the clothing selection items were answered correctly by the total group who responded to the test. Sixty-five per cent of the items were answered correctly by the upper 27 per cent of the group, whereas 48 per cent of the items were answered correctly by the lower 27 per cent. Almost 70 per cent of the selection items were correctly marked by the ten students who made the highest scores, and 41 per cent of the items were correctly marked by the ten students who made the ten lowest scores.

TABLE IX

COMPARISON OF PER CENT OF MULTIPLE-CHOICE ITEMS ANSWERED CORRECTLY

Content Area	No. of Items	Groups of Students	Per Cent of Items Answered Correctly
clothing selection	9	total group (96)	44
		upper 27% (26)	65
		lower 27% (26)	48
		highest ranking 10	69
		lowest ranking 10	41
clothing construction	14	total group (96)	55
		upper 27% (26)	65
		lower 27% (26)	41
		highest ranking 10	74
		lowest ranking 10	43
clothing care	2	total group (96)	62
		upper 27% (26)	69
		lower 27% (26)	52
		highest ranking 10	65
		lowest ranking 10	45

The total group of respondents answered a larger per cent of construction items correctly than those on selection. This was a reversal from the responses in these two content areas on the matching items in Part I of the test. The upper 27 per cent of the group answered the same percentage of construction and selection items correctly. Four per cent more of the clothing care items were answered correctly by

this same group. The ten students ranking highest on the test answered almost three-fourths of the construction items correctly. This same group made correct responses to 65 per cent of the clothing care items. Students making the ten lowest scores on the written test showed a gradual increase in the per cent of items marked correctly in the multiple-choice items dealing with clothing selection, construction, and care in this order.

Each multiple-choice item was based upon an approved generalization. Basic concepts being tested were found in the stems of individual items. Correct answers to items and the distractors were fairly uniform in length, and ideas for the individual items came from common texts, reference books, curriculum guides and other materials pertinent to the four programs considered in the study.

An item analysis showed that 64 per cent of the items were discriminating at the 15 per cent level. When indices of discrimination were calculated about one-half of the items had a poor rating and approximately one-sixth gave a negative discrimination. The total group of students who responded to this portion of the test gave the correct responses to 62 per cent of the clothing care items, 55 per cent of the construction items, and 44 per cent of the selection items.

True-False Items. Although true-false items are criticized more than any other type of objective test items, they are often used. Probably their major advantage is their ability to cover a relatively large sample of content in a short period of time. This type is especially good for testing simple facts, ideas, and concepts. Items of this type are good for evaluating the ability of students to

distinguish popular misconceptions and superstitions from scientifically validated truths. True-false items are also used when material does not lend itself to the construction of more than two or three plausible alternatives.

The criteria used for developing the true-false items were:

1. Items do not test for minute details.
2. Items included are not broad, general statements.
3. Items are based upon generalizations which selected home economists indicated were basic to beginning clothing.
4. Each item has only one idea or concept.
5. Statements are simply structured.
6. Ideas for the items came from common texts, experiences of the writer, reference books, curriculum guides, and other materials used in the beginning college clothing courses and the secondary schools in Mississippi and Oklahoma.

The following generalizations and test items are typical of the 30 true-false ones found in this section of the written test:

Generalization:

> As a rule, it is more difficult to make alterations in the bodice of a garment than in the skirt.

Test Item:

> In buying a ready-made dress, if one must choose between a garment that needs altering in the shoulders and another that needs altering in the hips, one would do well to choose the former.

Generalization:

> As a rule, tall, thin persons need to wear garments whose lines emphasize horizontal movement.

Test Item:

> The tall, slender person can wear full belted coats better than the short, plump one.

Student Responses. Ordinarily true-false items require students to express judgments of given statements by indicating whether they are "true" or "false". Since it is so difficult to find statements which are entirely "true" or entirely "false", a variation from this practice was used in this test. If students thought statements of practices were usually true, they were asked to respond in answer space "1" on the answer sheet. When they were uncertain as to whether a statement or practice was usually true or usually false, they were to respond in answer space "2". If they thought statements or practices were usually false, they were to respond in answer space "3".

When students made their decisions and indicated that the statements or practices were usually either true or false, they were interpreted to mean that the students were fairly certain about the truth or falsity of the items. When students marked a statement or practice "uncertain", several interpretations might be given. The statement or practice might not be understood; the wording of the item might not be clear, or the student might not be willing to take a position because of conflicting ideas about the statement or practice, or because she simply did not know the answer.

Analysis of Responses. Individual student responses to each of the 30 true-false items in Part III of the written test were analyzed. Table X gives an account of the item analysis of this section of the test. Seven items, or 23 per cent of the total group, were discriminating when the formula developed by Ross and Stanley was used for item analysis. When the difference of 15 per cent was used for discrimination between the upper and lower groups, ten additional items proved to be discriminating. This made 57 per cent of the items

TABLE X

ITEM ANALYSIS OF RESPONSES TO TRUE-FALSE ITEMS MADE BY UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	$W_L - W_H$[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
46	12	8	4		x
47	12	4	8	x	x
48	16	9	7	x	x
49	12	14	-2		
50	1	0	1		
51	3	1	2		
52	5	2	3		
53	0	2	-2		
54	17	4	13	x	x
55	14	13	1		
56	21	21	0		
57	21	21	0		
58	14	8	6		x
59	13	3	10	x	x
60	4	0	4		x
61	10	1	9	x	x
62	2	1	1		
63	24	23	1		
64	18	14	4		x
65	8	9	-1		
66	14	9	5		x
67	4	0	4		x
68	16	9	7	x	x
69	14	12	2		
70	9	5	4		x
71	13	9	4		x
72	14	8	6		x
73	16	7	9	x	x
74	11	7	4		x
75	22	23	-1		

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

discriminating. A closer scrutiny of Table X shows that items 56 and 57 showed no discrimination. Items 50, 51, 52, 55, 62, 63, and 69 showed very little discrimination, and items 49, 53, 65, and 75 discriminated in the wrong direction.

A further analysis of the last four items mentioned above is given in Table XI. This table shows which options each person in the lower and upper groups chose for each statement or practice. This scrutiny of responses to each option could provide aid in locating mistakes so that better test items can be constructed in the future. For item 49, twelve per cent more of the students in the lower group answered the item correctly. Twenty-two per cent more of the students in the upper than in the lower group were undecided as to whether the statement was true or false. Changing the wording might make this item more discriminating; the term dressmaker may not be one that is common to the high school or freshman students.

There is very little difference in the responses made to item 53 between the upper and the lower group. Undoubtedly the answer to this practice was very obvious to the majority of respondents.

A look at item 65 indicates that the answer was quite obvious to most of the respondents. This item should undoubtedly be replaced with a more discriminating one.

The answer to item 75 did not seem to be evident to many students in either of the groups of responders. Over half of the students in the upper group indicated that they were uncertain as to the truth or falsity of the practice and 38 per cent of the students in the lower group indicated their uncertainty. It is possible that this is not a general practice followed by many students.

TABLE XI

RESPONSES TO ALL OPTIONS OF ITEMS 49, 53, 65, AND 75 MADE BY UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	Option	No. of Responses	
		Upper 27 Per Cent	Lower 27 Per Cent
49	1	2	5
	2	11	5
	3[a]	13	16
	omit	0	0
Total		26	26
53	1[a]	25	24
	2	1	0
	3	0	2
	omit	0	0
Total		26	26
65	1	3	3
	2	5	4
	3[a]	18	19
	omit	0	0
Total		26	26
75	1[a]	8	4
	2	14	10
	3	4	12
	omit	0	0
Total		26	26

[a]Correct answer to item.

Table XII presents the discriminating power of the 30 true-false items. One item, 54, had good discriminating power. One-third of the items had a rating considered satisfactory in discrimination, and over 50 per cent of the items fell within the range of poor discrimination, while 13 per cent discriminated in the wrong direction.

TABLE XII

DISCRIMINATING POWER OF TRUE FALSE ITEMS USING RESPONSES OF UPPER AND LOWER 27 PER CENT OF 96 STUDENTS[a]

Item No.	Index of Discrimination (per cent)	Rating[b]	Item No.	Index of Discrimination (per cent)	Rating[b]
46	15	poor	61	35	satisfactory
47	31	satisfactory	62	4	poor
48	27	satisfactory	63	4	poor
49	-8	poor	64	15	poor
50	4	poor	65	-4	poor
51	8	poor	66	20	satisfactory
52	12	poor	67	15	poor
53	-8	poor	68	27	satisfactory
54	50	good	69	8	poor
55	4	poor	70	15	poor
56	0	poor	71	15	poor
57	0	poor	72	23	satisfactory
58	27	satisfactory	73	35	satisfactory
59	39	satisfactory	74	15	poor
60	15	poor	75	-4	poor

[a]Vide page 60 for formula for computing index of discrimination.

[b]Any discriminating value +0.40 or above is considered good. Any discriminating value between +0.40 and +0.20 is considered satisfactory. Any discriminating value between +0.20 and 0 is considered poor.

A study of the data in Table XIII will show which percentages of test items in each content area were answered correctly by the entire group of respondents, the upper and lower 27 per cent of the total group, and by the students who made the ten highest and ten lowest scores on the total written test. There is also an account of the per cent of undecided and false responses to these items.

TABLE XIII

COMPARISONS OF RESPONSES TO TRUE-FALSE ITEMS

Content Area	No. of Items	Groups of Students	Per Cent of Responses		
			True	Undecided	False
construction	9	total group (96)	64	13	23
		upper 27% (26)	68	10	22
		lower 27%	55	24	21
		highest 10	62	17	21
		lowest 10	48	28	24
selection	17	total group (96)	64	20	16
		upper 27% (26)	77	12	11
		lower 27% (26)	56	26	18
		highest 10	75	14	11
		lowest 10	59	25	16
care	4	total group (96)	47	28	25
		upper 27% (26)	51	31	18
		lower 27% (26)	44	30	26
		highest 10	47	33	20
		lowest 10	33	33	34

A glance at the responses made by the total group reveals that the same per cent of items was marked correctly for both clothing construction and selection. Each of the five groups of respondents rated lower in items referring to the care of clothing than in the other two content areas. Taking all the responses as a whole, more of the statements and practices connected with the selection of clothing were

answered correctly than in the areas of construction and care of clothing. Students ranking in the lower 27 per cent and students with the ten lowest scores on the total test marked a higher percentage of the statements and practices "uncertain".

In formulating the true-false items, special care was taken to choose statements or practices which did not ask for minute details. At the same time, extremely broad, general statements were avoided. Individual items were based upon generalizations which the panel of judges felt were basic to the beginning clothing courses. Items which had simple sentence structure were included. Statements and practices came from a variety of sources.

An analysis of the 30 items showed that over half of these statements and practices were discriminating at the 15 per cent level. When indices of discrimination were computed, one item met the criteria for good discrimination; approximately 33 per cent rated satisfactory in discriminating power. These results seemed to indicate that there is a need for improving this portion of the test by either revising some items or replacing them.

Addition to Test: Application of Principles

Part IV of the written test was devoted to the evaluation of students' ability to apply principles. Educators have stressed the importance of students learning to practice this competence. Bloom and his associates advanced the idea:

> The fact that most of what we learn is intended for application to problem situations in real life is indicative of the importance of application objectives in the general curriculum.[17]

Some educational psychologists label this ability to take principles and apply them to new situations as the "transfer of training".

In the area of foods and nutrition, Pattison, Barbour, and Eppright[18] encouraged teachers to help students learn to formulate and use generalizations, because they thought that this would encourage students to "think". Then as students learned to develop generalizations, they could use them in solving new problems.

Cozine[19] developed an evaluation device for assessing the ability of freshmen and senior college students in applying certain principles and generalizations related to foods and nutrition. She felt that this was one kind of "thinking" and "understanding" which had wide application for students enrolled in foods and nutrition courses.

From this point of view, students who learn to apply principles in clothing selection, construction, and care should be able to solve new problems in these areas as they arise.

Objectives to Evaluate Students' Ability to Solve Problems. The reader in recalling the objectives proposed for this study can readily see that the following ones might be used to assess the ability of students to apply principles:

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[17]Bloom, ed., p. 123.

[18]Pattison, Barbour, and Eppright, pp. 95, 97.

[19]June Cozine, "An Evaluation of the Foods and Nutrition Courses in State Supported Schools in Missouri" (unpub. Ph.D. dissertation, University of Chicago, 1949), p. 33.

1. To skillfully apply the principles and elements of design to clothing selection for individuals.

2. To develop the ability to use appropriate principles in wardrobe planning and clothing selection.

3. To apply some psychological, sociological, and economic principles when selecting clothing.

4. To use appropriate principles in caring for clothing.

Defining the Objective. When students are able to satisfactorily apply principles and generalizations in solving new clothing selection and construction problems, they are expected to:

1. Know which principles they should apply without needing to be prompted or shown which abstractions are correct for use in solving new problems in clothing selection and construction.

2. Be able to recognize a correct conclusion which is consistent with the conditions of the problem.

3. Be able to determine which statements following a given problem support a given conclusion, such as true analogies, right generalizations, and true, relevant statements.

4. Be able to determine which statements following a given problem do not support a given conclusion, such as false analogies, wrong generalizations, and false, irrelevant statements.

In evaluation for determining ability to apply principles, students might be asked to make predictions or draw conclusions when confronted with new problems, either orally or verbally. If the students were asked to solve problems, they would need to formulate plans for these solutions. In this study the students were presented a problem and were asked to accept a conclusion that had already been drawn and to justify supporting statements. During the experimentation in the development of evaluation techniques in the Eight Year Study, investigators decided that this latter type of testing was as effective as having students draw their own conclusions to a problem, and the latter

way had the advantage of requiring less time for responses than the former method.

Development of Problems. In preparing this section of the written test, three major steps were involved. First, principles and generalizations from the content areas of clothing were chosen as a basis for the problems. Second, problems were formulated, and third, statements to either support or refute the given conclusions were listed.

The following criteria for judging test items were developed for use before any of the problems were formulated:

1. Problems present previously agreed upon principles and generalizations which determine the content area (clothing selection, construction, and care) in a beginning clothing course.
2. Problems chosen give a fair representation of the three content areas used in the study.
3. Problems chosen supplement the content of the Walsh Clothing Pretest.
4. Problems deal with different situations. They are specifically worded for this particular test.
5. Problems formulated are meaningful to the students involved.

Twelve problems were developed. Six dealt with principles of clothing construction, four gave principles of clothing selection, while two were based on principles of clothing care. Each problem was based upon a previously approved generalization. Six problems were chosen to be used in the test; however, after the judges indicated that the test was too lengthy and that one of the problems on the care of clothing was too difficult, it was deleted (see Appendix E for problems of the test).

In order to save time, students were asked to assume that the underscored conclusion at the end of each problem was correct.

Following each problem, there were ten statements directly related to it. Some of these supported the conclusion drawn, while others refuted it. Some of the plausible supporting reasons given were: right generalizations, acceptable authorities, acceptable practices, true analogies, and true relevant statements. Some of the nonsupporting reasons were: wrong generalizations, false analogies, popular misconceptions, and ridicule. The types of reasons given and examples of each follow.

1. Right Generalization. Problem I, test item 85, page 210.

   Frequently fitting problems may be solved by changing or adding darts or tucks.

2. Wrong Generalization. Problem I, test item 84, page 210.

   In altering a pattern piece, it is better to slash and spread the piece rather than add it to the outer edge of the pattern.

3. True Analogy. Problem V, test item 125, page 214.

   Just as consumers expect canned food to have informative labels, they expect ready-to-wear garments to have informative labels also.

4. False Analogy. Problem V, test item 118, page 214.

   Just as the name "Bach" attached to a musical composition brings high quality to music, so the name of a well-known clothing manufacturer brings the highest quality to clothing products.

5. Acceptable Authority. Problem III, test item 103, page 212.

   The Iowa manual, Unit Method of Construction of Clothing, recommends staystitching to prevent stretching of individual pattern pieces.

6. Unacceptable Authority. Problem III, test item 101, page 212.

   One of Mary's classmates has suggested that she staystitch every edge of the garment.

7. True, Relevant. Problem V, test item 120, page 214.

   It is a fallacy to believe that by buying the same brand of an article each time you get a garment, you will be assured of identical quality.

8. True, Irrelevant. Problem III, test item 100, page 212.

   Careful placement of the grainline of the pattern on the grainline of the fabric helps retain the original shape of each garment.

9. False, Irrelevant. Problem II, test item 92, page 211.

   Wax chalk is suitable for transferring pattern markings to white rayon crepe.

10. Acceptable Practice. Problem IV, test item 109, page 213.

    When an individual is not sure whether certain colors look well on her, she may either try on clothes in these colors or hold swatches of fabric near her face to determine their effects.

11. Unacceptable Practice. Problem III, test item 99, page 212.

    Staystitching is done with a lengthened machine stitch in a contrasting color of thread.

12. Popular Misconception. Problem V, test item 117, page 214.

    The higher the price paid for a product the better the quality.

13. Ridicule. Problem III, test item 98, page 212.

    Everyone should know that curved edges of a garment should be staystitched.

14. Assumed Conclusion. Problem II, test item 90, page 211.

    Tailors' tacks are suitable for transferring pattern markings to white organdy.

Students' Responses. As previously stated, after the student had read the problem and the underscored conclusion, she had to decide whether or not each of the ten statements following the problem supported or refuted the conclusion given. When students were able to recognize the generalizations which were used as the basis for solving the individual problems, they should have readily identified them as supporting the conclusion; at the same time, they should have recognized wrong generalizations and refuted them as not supporting the conclusion. Students would have exemplified "good reasoning" if they

had selected items which supported the conclusions, such as true relevant statements, true analogies, and acceptable practices, and if they had rejected items such as true irrelevant statements, false analogies, and unacceptable practices.

Analysis of Responses. Students were required to respond to 50 items in Part IV of the written test. This section of the test was designed to evaluate the ability of students to apply principles or generalizations when confronted with new problems.

Table XIV shows the discrimination of individual items in the Application of Principles Test. Thirty-four per cent of the items were discriminating according to the formula designed by Ross and Stanley. When the items which gave a 15 per cent discrimination between the upper and lower groups were added to the 17 items which proved to be discriminating by the Ross and Stanley chart, the per cent rose to 54. A third of the items fell below this discriminating mark. Twelve per cent of the items gave a negative discrimination.

TABLE XIV

ITEM ANALYSIS OF RESPONSES TO APPLICATION OF PRINCIPLES ITEMS MADE BY UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	$W_L - W_H$[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
76	15	3	12	x	x
77	9	4	5		x
78	22	19	3		
79	7	4	3		
80	8	7	1		
81	18	9	9	x	x
82	9	4	5		x
83	15	3	12	x	x
84	13	10	3		
85	3	1	2		
86	5	2	3		
87	18	17	1		
88	4	0	4		x
89	4	0	4		x
90	19	25	-6		
91	18	16	2		
92	7	1	6		x
93	16	9	7	x	x
94	5	12	-7		
95	9	0	9	x	x
96	4	0	4		x
97	1	0	1		
98	18	16	2		
99	8	8	0		
100	20	8	12	x	x
101	9	4	5		x
102	16	13	3		
103	8	1	7	x	x
104	15	3	12	x	x
105	18	21	-3		
106	1	1	0		
107	9	2	7	x	x
108	18	9	9	x	x
109	2	9	-7		
110	20	8	12	x	x

TABLE XIV (Continued)

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
111	9	3	6		x
112	20	19	1		
113	4	0	4		x
114	20	26	-6		
115	21	6	15	x	x
116	17	5	12	x	x
117	13	0	13	x	x
118	18	1	17	x	x
119	5	4	1		
120	18	6	12	x	x
121	13	7	6		x
122	10	1	9		x
123	18	22	-4		
124	4	3	1		
125	3	1	2		

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

Data showing the discriminating power of the application of principles items is given in Table XV. Seven of the items proved to have good discriminating power; 14 items had satisfactory discriminating power, and 18 fell within the range from 0.01 to 0.20. The remainder of the items fell at 0 or below.

TABLE XV

DISCRIMINATING POWER OF APPLICATION OF PRINCIPLES ITEMS USING RESPONSES OF UPPER AND LOWER 27 PER CENT OF 96 STUDENTS[a]

Item No.	Index of Discrimination (per cent)	Rating[b]	Item No.	Index of Discrimination (per cent)	Rating[b]
76	46	good	101	20	satisfactory
77	20	satisfactory	102	12	poor
78	12	poor	103	27	satisfactory
79	12	poor	104	-40	poor
80	4	poor	105	12	poor
81	35	satisfactory	106	0	poor
82	20	satisfactory	107	27	satisfactory
83	46	good	108	35	satisfactory
84	12	poor	109	-27	poor
85	8	poor	110	46	good
86	12	poor	111	23	satisfactory
87	4	poor	112	4	poor
88	15	poor	113	15	poor
89	15	poor	114	-23	poor
90	23	satisfactory	115	58	good
91	8	poor	116	46	good
92	23	satisfactory	117	50	good
93	27	satisfactory	118	63	good
94	-27	poor	119	4	poor
95	35	satisfactory	120	46	good
96	15	poor	121	12	poor
97	4	poor	122	35	satisfactory
98	8	poor	123	-15	poor
99	0	poor	124	4	poor
100	46	good	125	8	poor

[a]Vide page 60 for formula for computing index of discrimination.

[b]Any discriminating value +0.40 or above is considered good. Any discriminating value between +0.40 and +0.20 is considered satisfactory. Any discriminating value between +0.20 and 0 is considered poor.

Table XVI shows the per cent of application of principles items answered correctly according to content area and according to responses given by the total group, the upper and lower 27 per cent of the respondents, and the ten students making the highest scores and the ten students making the lowest scores on the total written test.

TABLE XVI

COMPARISON OF PER CENT OF APPLICATION OF PRINCIPLES ITEMS ANSWERED CORRECTLY

Content Area	No. of Items	Group of Students	Per Cent of Items Answered Correctly
clothing selection	20	total group (96)	67
		upper 27% (26)	67
		lower 27% (26)	53
		highest ranking 10	80
		lowest ranking 10	51
clothing construction	30	total group (96)	61
		upper 27% (26)	71
		lower 27% (26)	58
		highest ranking 10	72
		lowest ranking 10	55

More than two-thirds of the 20 clothing selection items were answered correctly by the total group, whereas over three-fifths of the construction items were answered correctly by the same group. As could be expected, a larger per cent of both selection and construction items were answered correctly by the ten students with the highest ratings on

the written test. The ten students with the lowest ratings answered over half of the items correctly.

After obtaining the per cent of "right" responses made by students, an analysis was made to determine what per cent of each type of reasons given in answering the items were marked correctly. Table XVII reports the different types of reasons given and the per cent of each one of these that were answered correctly for the five groups of students included in this analysis.

A perusal of the column in the table which records the per cent of different types of reasons marked correctly by the total group of respondents shows that 95 per cent of the true analogy items were marked correctly. The lowest rating came with the assumed conclusion; many of the students failed to recognize the repeated conclusion. The second most frequently made mistake was the inability of students to recognize false, irrelevant statements; only 29 per cent of these statements were checked correctly by this group. In checking the responses of the upper and lower groups, one notices a reversal in responses with acceptable practices and assumed conclusions.

All of the items dealing with true analogies and popular misconceptions were answered correctly by the ten students who made the highest scores on the written test. Just as in the upper and lower 27 per cent, there was also a reversal of responses between the ten highest and ten lowest ranking respondents in the per cent of accepted practices and assumed conclusions marked correctly. The same per cent of students rating the highest ten and lowest ten scores on the test marked the ridicule statement correctly.

TABLE XVII

COMPARISON OF PER CENT OF APPLICATION OF PRINCIPLES ITEMS ANSWERED CORRECTLY ACCORDING TO CLASSIFICATION

Type of Reason	No. of Items	Per Cent Correct				
		Total Group (N, 96)	Upper 27% (N, 26)	Lower 27% (N, 26)	Upper 10	Lower 10
right generalization	5	78	82	73	90	70
wrong generalization	4	64	84	49	90	40
true analogy	4	95	96	88	100	80
false analogy	2	53	58	31	50	30
acceptable authority	5	73	82	68	90	60
unacceptable authority	4	58	70	52	70	50
true, relevant	4	72	78	57	80	50
true, irrelevant	6	45	63	32	80	40
false, irrelevant	3	29	90	60	90	40
acceptable practice	3	65	59	64	50	70
unacceptable practice	2	64	67	54	80	50
popular misconception	3	88	96	59	100	70
ridicule	1	32	38	31	50	50
assumed conclusion	4	17	8	27	10	30

By checking the five Application of Principles problems against the criteria developed for this section of the test, one may observe that the second criterion was most fully met; only two content areas are represented instead of the suggested three. None of the problems are based upon the care of clothing. The writer felt that the other criteria were adequately met.

Over one-third of the 50 items in Part IV were discriminating when the Ross and Stanley formula was used as a basis for identifying discriminating items; over half of the items proved to be discriminating when a difference of 15 per cent was used. Data revealing the indices of discriminating power classified 14 per cent with good discrimination, 28 per cent with satisfactory discrimination, and 31 per cent with poor discrimination. This left 27 per cent with negative discriminating power. More study needs to be devoted to these results in an effort to determine what might be done to raise the indices of discriminating power.

Student Responses to Total Written Test

After the Walsh pretest was analyzed, those items which were discriminating between the upper and lower 27 per cent of the respondents were used as a starting point for revising the test. New items covering other phases of clothing selection, construction, and care were added to the test. Since there was an interspersion of matching and multiple-choice items in Part I of the Walsh pretest, a new format for the revised test was devised. This test has all matching items, all multiple-choice items, and all true-false items grouped together. A standard answer sheet is used; this makes it possible to score the

test either by hand or by machine. In this study all the responses were scored by hand.

After checking the scores of the 96 students responding to the written test, the upper and lower 27 per cent of the papers were used in an individual analysis of each item. Table XVIII gives a summary of items which proved to be discriminating. Forty-one of the 125 items were discriminating according to the Ross and Stanley formula, and 30 additional items proved to be discriminating when a difference of 15 per cent was used. The items are listed in rank order in the table with the first item in the group having the highest discrimination.

TABLE XVIII

RANK ORDER OF INDIVIDUAL ITEMS DISCRIMINATING BETWEEN RESPONSES OF UPPER AND LOWER 27 PER CENT OF 96 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
118	18	1	17[b]	x	x
115	21	6	15	x	x
8	20	6	14	x	x
28	18	4	14	x	x
31	17	3	14	x	x
38	18	5	13	x	x
54	17	3	14	x	x
113	13	0	13	x	x
110	20	8	12	x	x
100	20	8	12	x	x
120	18	6	12	x	x
116	17	5	12	x	x
104	15	3	12	x	x
83	15	3	12	x	x
76	15	3	12	x	x
9	14	2	12	x	x
4	21	10	11	x	x
1	17	6	11	x	x
30	16	5	11	x	x
10	18	8	10	x	x
3	18	8	10	x	x
59	13	3	10	x	x
29	22	13	9	x	x
108	18	9	9	x	x
81	18	9	9	x	x
44	18	9	9	x	x
73	16	7	9	x	x
40	16	7	9	x	x
61	10	1	9	x	x
122	10	1	9	x	x
95	9	0	9	x	x
27	19	10	9	x	x
7	20	11	9	x	x
2	12	3	9	x	x
20	14	6	8	x	x

TABLE XVIII (Continued)

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
47	12	4	8	x	x
93	16	9	7	x	x
68	16	9	7	x	x
48	16	9	7	x	x
21	16	9	7	x	x
23	13	6	7	x	x
16	13	6	7	x	x
6	11	4	7	x	x
45	25	19	6		x
72	14	8	6		x
58	14	8	6		x
121	13	7	6		x
5	13	7	6		x
111	9	3	6		x
92	7	1	6		x
37	7	1	6		x
66	14	9	5		x
43	12	7	5		x
17	12	7	5		x
101	9	4	5		x
82	9	4	5		x
77	9	4	5		x
32	6	1	5		x
25	5	0	5		x
64	18	14	4		x
46	12	8	4		x
74	11	7	4		x
70	9	5	4		x
113	4	0	4		x
96	4	0	4		x

TABLE XVIII (Continued)

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	Ross-Stanley Discrimination	15 Per Cent Discrimination
89	4	0	4		x
88	4	0	4		x
67	4	0	4		x
60	4	0	4		x

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

[b]Most discriminating item is the first item in this column and the least discriminating item is the last one in this column.

Further analysis was made of the responses to the test, taking into consideration the per cent of items which were answered correctly in each of the content areas. Table XIX shows the differences in the per cent of items answered correctly by the total group, the upper and lower 27 per cent of the respondents, and the ten students who ranked highest on the test and the ten who made the lowest scores. For those items in the selection and construction areas, the students with the ten highest grades answered the highest per cent of items correctly; however, the students in the upper 27 per cent answered a larger number of clothing care items correctly.

More than half of all the clothing selection items were answered correctly. In the clothing construction area, all groups with the exception of the ten lowest scoring students, answered at least half of the items correctly. Two groups, the lower 27 per cent and the ten lowest scoring students, fell below the 50 per cent mark in answering the care of clothing items correctly.

TABLE XIX

COMPARISON OF PER CENT OF TOTAL ITEMS IN WRITTEN TEST ANSWERED CORRECTLY

Content Area	No. of Items	Groups of Students	Per Cent of Items Answered Correctly
clothing selection	53	total group (96)	62
		upper 27% (26)	73
		lower 27% (26)	56
		highest 10	78
		lowest 10	52
clothing construction	66	total group (96)	60
		upper 27% (26)	68
		lower 27% (26)	50
		highest 10	71
		lowest 10	47
clothing care	6	total group (96)	55
		upper 27% (26)	60
		lower 27% (26)	48
		highest 10	56
		lowest 10	39

In order to ascertain if there seemed to be any relationship between the amount of previous clothing experiences a student had had and the score that she made on the written placement test, some comparisons were made. Table XX shows the amount of previous clothing experiences of the students who made the ten highest and the ten lowest scores on the written test. Five of the highest ranking students had

had no clothing projects in 4-H. One student in this group had had clothing units for six years in public schools; two had had five units of clothing. Three years of clothing was the mode for the group. Half of the students in this upper group indicated that they had done "much" sewing at home. The other half checked that they had done "some" sewing at home.

TABLE XX

SCORES AND AMOUNT OF PREVIOUS CLOTHING EXPERIENCE OF STUDENTS MAKING TEN HIGHEST AND TEN LOWEST SCORES ON WRITTEN PLACEMENT TEST

Students	Scores		No. of Years 4-H Experience	No. of Years Homemaking in School	Amount of Home Experience
	High	Low			
1	103		0	5	much
2	93		9	2	some
3	92		4	3	much
4	91		1	3	some
5	91		0	5	much
6	91		0	2	much
7	90		2	3	some
8	88		3	6	some
9	88		0	3	some
10	87		0	4	much
1		64	0	3	some
2		63	4	2	much
3		63	0	0	none
4		63	1	1	some
5		62	0	3	none
6		62	4	4	some
7		61	0	2	none
8		61	1	1	none
9		61	0	2	none
10		58	0	4	some

Six of the ten students who made the lowest scores on the written test had had no 4-H clothing projects; one student had had no clothing in public schools. The mode for this group was two clothing units in secondary schools. Half of the students indicated that they had had no experience sewing at home; four had had some experience, and one student indicated that she had had much experience in sewing at home.

If the number of years of 4-H clothing projects and the number of clothing units taken in secondary school were totaled for both groups, the higher scoring group would have considerably more projects and clothing units.

Validity of Test

According to Ahmann and Glock,

> ...validity is often defined as the degree to which an evaluation instrument actually serves the purposes for which it is intended...and validity is clearly the most important characteristic of an evaluation instrument.[20]

No matter what other characteristics an instrument may possess, if it is not valid to an adequate degree, it is of no value whatsoever. Ahmann and Glock contend that, to say that an evaluation instrument is "valid" in the sense that it has been defined is not enough, because an instrument is valid in terms of its purpose or purposes. In their book, Evaluation Pupil Growth, these two writers divide the aims of evaluation methods into four categories; each of the aims are translated into corresponding types of validity which are commonly identified as content validity, predictive validity, concurrent validity, and

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[20]Ahmann and Glock, p. 82.

construct validity.[21] Evaluation instruments may be designed to meet one or more of these aims. In this study an effort was made to construct evaluation devices which had content validity.

Ahmann and Glock contended that:

> To ascertain the degree to which an evaluation instrument possesses content validity is equivalent to demonstrating the extent to which the content of the instrument adequately samples certain types of situations or subject matter.[22]

It is perfectly obvious that content validity is very important in the evaluation of achievement. The primary purpose of achievement evaluation is to determine the degree to which pupils have achieved educational objectives. The content validity of the test is determined by the representativeness of its contents. In the devices developed in this study special effort was made to include a cross section of items from the major content areas of clothing. When a test has fair representativeness, it has content validity.

The steps in establishing validity for the test were adapted from techniques employed in preparing the Cooperative Achievement Tests.[23] An outline of the procedure follows.

1. In the beginning, there was preliminary planning and selection of content.
   a. An analysis was made of secondary homemaking curriculum guides for Mississippi and Oklahoma; textbooks, teaching materials, and research studies done at both the secondary and college level were also analyzed.
   b. The objectives to be evaluated were identified and their importance was verified by a panel of judges.

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[21] Ibid., p. 83.

[22] Ibid., p. 84.

[23] Ross and Stanley, p. 112.

c. A detailed outline of the content area representing the objectives was prepared.

d. Some of the competencies which might give evidence of students having reached the objectives were defined.

2. Then the test items were prepared and edited.

a. A grid was built which included the competencies being evaluated and the content areas covered. From this grid topics for individual test items were chosen.

b. The individual items with their answers were submitted to a panel of judges for criticism.

c. The items were revised in accordance with the suggestions received.

Arny[24] said that evidence with respect to validity might be obtained subjectively or objectively. Subjective evidence is found in the judgment of competent persons who decide whether test questions are likely to attain the professed goals of instruction. Objective evidence may be found by the use of statistical procedures, but the establishment of the coefficients of validity have very little meaning in home economics since a good outside criterion has not been discovered.

Although it was impossible to obtain objective validity for the written test, the writer feels that subjective validity has been established. Competent judges indicated that the objectives upon which the study was based were important. A logical sequence of steps was followed in establishing content validity, and the judges sanctioned the individual test items and answers to these items.

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[24]Arny, pp. 94-95.

Reliability of Test

An evaluation instrument possesses reliability to the extent that it yields consistent information. In other words, a reliable evaluation instrument can be used again and again in an unchanging situation and produce results that are constant; therefore, it is imperative that test instruments be produced which give as nearly constant results as possible. The more nearly constant the results in like situations the more reliable the test. Unfortunately all evaluation instruments are unreliable to some degree.

Reliability is secondary to validity as a desirable characteristic of an evaluation instrument. An instrument may be highly reliable and not valid.

Reliability may be expressed either as a coefficient of reliability or as a standard error of measurement. The coefficient of reliability may be a product moment coefficient correlation identified as: coefficient of stability, coefficient of equivalence, coefficient of stability and equivalence or a coefficient of internal consistency.

A coefficient of internal consistency was computed for the written placement test using the Kuder-Richardson Formula Number 20. This formula is:

$$KR_{20} = \frac{K}{K-1}\left\{1 - \frac{2N\Sigma(W_l + W_h) - \Sigma(W_l + W_h)^2}{0.667[\Sigma(W_l - W_h)]^2}\right.$$

where

k = number of items

N = number of students ranking in the higher .27 or lower .27 of the group

W_1 = number of students in the lower group who answered a certain item wrongly, including those who omitted it

W_h = number of students in the higher group who answered a certain item wrongly, including those who omitted it.

freshman students' knowledge of clothing selection, construction, and care. The latter part of the written test contained five problems which attempted to evaluate the ability of students to apply principles. In the development of the test an account was given of the selection of objectives for the study. The objectives were classified and defined in terms of student competencies. Generalizations were formulated, which covered the major content areas of clothing selection, construction, and care and individual test items were based on these. Clothing instructors at Mississippi State College for Women and Oklahoma State University passed judgment on the importance of the generalizations, the accuracy of the test items, and the accuracy of the answers to the individual items. Revisions were made on the basis of these suggestions.

A total of 112 beginning clothing students at Mississippi State College for Women and Oklahoma State University responded to this written placement test. Ninety-six students completed the test, and the analyses of their responses are given. Fifty-five per cent of the responders answered the items on clothing care correctly; 60 per cent of the construction items were answered correctly, and 62 per cent of the selection items got correct responses.

As a whole, the criteria established for guides in formulating the total test were closely observed. The writer feels that the test has content validity and the coefficient of reliability, .74, is acceptable.

The next part of this study describes the development of a practical clothing test which supplements the written placement test discussed in this chapter.

CHAPTER IV

DEVELOPMENT OF STATION-TO-STATION TEST

Introduction

Many home economists realize the importance of appraising the knowledge of students and their ability to apply this knowledge from a particular subject matter area in solving problems that arise in everyday life. At the same time, they are aware that there are other areas of human behavior that also need to be evaluated.

Writers[1] of the Taxonomy of Educational Objectives refer to the areas of educational objectives as the cognitive, affective and psychomotor domains. In Chapter III of this study an account was given of the written clothing placement test which was devised to evaluate some of the students' clothing competencies in the cognitive domain.

Bean,[2] in speaking of the psychomotor domain, has stated that the evaluation of specific skills already acquired and the prediction of success in acquiring them are two important problems quite different in nature from problems of verbal appraisal. New problems arise in the

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[1]Benjamin S. Bloom, ed., Taxonomy of Educational Objectives (New York, 1956), p. 7.

[2]Kenneth L. Bean, Construction of Educational and Personnel Tests (New York, 1953), p. 128.

measurement of what might be called manual, or manipulative skills. These are largely complex systems of motor habits. It is true that knowledge and reasoning ability of a sort may be required in their application on a specific job, but a student with the needed factual information may not possess well-learned habit patterns. Unless one has a minimum standard of motor coordination achieved through practice, factual knowledge of how to do the job may be useless. For example, in the area of clothing a student may be able to explain in detail the steps in altering a dress pattern, but the instructor cannot be sure that she can put this knowledge into practice until she has actually seen a dress pattern that the student has altered.

All competencies cannot be appraised by means of a written test. Evaluation of progress in some behaviors requires the measurement of motor or manipulative skills. A sample of job performance is one means of assessing abilities of students in particular areas. Bean verified this by saying:

> In the achievement of educational objectives in science, laboratory performance must often be evaluated along with knowledge of theory. A student who excels in theory may not always be superior in laboratory work. The reverse is equally true because two more or less independent sets of native capacities are involved.[3]

There seems to be a consensus among personnel working with clothing placement tests that a written test alone is not the best means of evaluating what the students know about clothing selection, construction, and care. At Iowa State University a battery of tests for clothing placement includes a written test, a spatial relations test, and a dexterity background questionnaire. In addition to a written test, the

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[3]Ibid., p. 131.

University of Georgia has a three-hour practical pretest; during this time a student begins a blouse. The blouse may be finished outside the laboratory period and returned for evaluation at a time agreed upon between the student and the instructor in charge. Purdue University and Southern Illinois University require students to take practical examinations in addition to written tests. During the school year, 1960-1961, the newly developed New Mexico Clothing Placement Test was not used because no one had devised a practical test to accompany it. Walsh[4] proposed that some type of practical test accompany the written test which she developed for use at Oklahoma State University.

In reviewing theses on the development and use of clothing placement tests, and in talking with personnel from various institutions, one conclusion reached in the present study was that a practical test was needed to accompany the revised written clothing placement test. These reviews indicated some of the practical experiences now being used at various institutions are not satisfactory due to the expense and time involved in giving the test, the time involved in evaluating the results, and the inadequacies of interpreting the results.

In addition to asking students to perform manipulative skills on a practical test, the writer wanted to know what types of choices students would make when confronted with problems connected with clothing selection, construction, and care; therefore, some problems were planned to evaluate the students' understanding and judgment in these areas.

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[4]Grace M. Walsh, "The Development of a Pencil and Paper Pretest for Placement of College Students in First Courses in Clothing, Textiles, and Merchandising at Oklahoma State University" (unpub. Master's report, Oklahoma State University, 1959), p. 55.

The remainder of the chapter will be devoted to the discussion of the development of such a test and to the results of the responses given by 112 beginning clothing students.

General Information on Methodology

Performance tests are used in home economics to evaluate the ability of students to perform certain tasks. Instead of being called a practical or performance test, this particular device has been termed a station-to-station test. This name for a practical test was introduced to the writer by Steininger[5] of Cornell University. Steininger uses a practical test in the area of foods and nutrition which she has labeled a station-to-station test. Various types of foods experiences are provided for the students at different sites in the foods laboratory. Each location is identified as a "station". At one station a student may be asked to knead a dough. At another the student may be asked to judge the consistency of a cake batter. The instructor evaluates the performances of students at each station. During the class period the students move to the various stations and perform the tasks indicated. Since this type of test seemed to work satisfactorily in the area of foods, the writer decided to experiment with such an evaluation device in the area of clothing. Various problems were selected for the students to solve, and each was located at a table in the clothing laboratory; each table was labeled a "station".

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[5]The information concerning the station-to-station test was received from Grace Steininger during a personal conference, April 20, 1960.

The main steps in developing the test were: (1) selecting objectives to be evaluated, (2) defining these objectives in terms of student competencies, (3) selecting problems exemplifying the objectives, (4) preparing materials to be used at each station, (5) working out details of administering the test, and (6) developing a means of scoring the responses.

The criteria which were developed for use in selecting the problems for the test follow:

1. Problems include situations which are supplementary to the written placement test.
2. Problems are drawn from principles or generalizations which cover the content area in the clothing curriculums.
3. Problems are meaningful in terms of students' own experiences.
4. Problems are specifically worded for this particular test.

Ideas for the development of these problems came from the past experiences of the writer and from clothing instructors at Mississippi State College for Women and at Oklahoma State University. Additional ideas were obtained from texts and reference books.

Some of the characteristics Arny gave for a good performance test which were considered in the development of this test were: fundamental skills should be checked, relatively inexpensive materials should be used, the task should be completed within the usual class period or less, and the results should be scorable in objective terms.[6] With these criteria and characteristics in mind, the problems for the station-to-station test were developed. The final practical

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[6]Clara Brown Arny, Evaluation in Home Economics (New York, 1953), p. 73.

test contained seven problems. Three of these required the use of manipulative skills; the other four required the use of judgmental skills. The generalizations, problems, and keys were submitted to the panel of college clothing teachers for criticism. Corrections were made in light of their suggestions. Copies of the seven problems used in this test may be found in Appendix E.

General Directions for Administering the Test

Since this type of test had not been used previously at either of the institutions referred to in this study, directions had to be formulated for both the persons administering the test and for the students responding to the test. Before the test was given, the writer met with the clothing instructors to formulate plans for its administration.

Following these conferences, the test was administered to beginning clothing students during the first class period of the second semester. When the students came to the class the instructors were asked to divide the class into two equal groups. During the first hour, half of the students responded to the written part of the placement test. The other half of the class responded to the station-to-station test. Then at the end of the hour, the two groups exchanged places. Before the groups were separated they were given an explanation of the operation of the station-to-station text. General directions for the entire test were made available to each student as she came into the clothing laboratory where the seven "stations" were arranged. A copy of these directions may be found in Appendix E. Each student was asked to read the general directions before beginning the test. At the time the students received these directions, they also

received a large manila envelope to hold the materials used in each problem after it was solved.

Each of the seven problems was to be solved at an individual "station". Instructions for each problem and all the equipment needed for solving it were available at the station or in adjacent surroundings. As the first two students arrived in the clothing laboratory, they were asked to move to Station I and begin solving that problem. The next two students were asked to move to Station II to begin, and thus two students started at each of the seven stations. As students finished one problem, they were asked to move quietly to the next station, pick up a list of directions, and then solve the problem found there. No rigid rules were set for the time to be spent at each station. The students were asked to move along as rapidly as they could, but no stress was placed on finishing all of the problems within the 50-minute period.

At the end of the class period, the students were asked to leave their completed problems at the door where they had received the manila envelopes when they came into the laboratory. A special effort was made to have all students label each problem and to indicate how much time had been devoted to its solution.

Manipulative Problems

Arny[7] said that performance tests may be either <u>recognition</u> tests or <u>work</u> tests. The manipulative section of the test was classified as a work test. Work tests are a help in determining whether a person can

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[7]Ibid., p. 72.

perform a given task and show how skillfully the task is performed. The objective chosen for this portion of the test was: "To develop some skill in the construction of clothing". After the panel of judges indicated that this was an important objective, it was defined in terms of student competencies. If students had developed skills in the construction of clothing, they would be expected to actually perform such processes as:

Preconstruction

1. Comparing own body measurements to those of commercial patterns and making alterations in order that body measurements and pattern measurements coincide.
2. Straightening fabric and doing any other processes necessary in preparation for laying the pattern on the fabric.
3. Placing pattern pieces on the fabric in an acceptable manner.
4. Cutting garments satisfactorily.
5. Making suitable pattern markings on garment pieces.

Construction

1. Using small equipment successfully in constructing garments.
2. Using large equipment successfully in constructing garments.
3. Performing construction details such as:

   Basting
   Making darts, pleats, and tucks
   Cutting and joining bias facings and bindings
   Finishing sleeves, necklines, and hemlines
   Marking placement of buttons and buttonholes
   Making buttonholes

For one of the manipulative problems the students were required to alter a pattern (a copy of this problem may be found in Appendix E).

The generalization accompanying this problem was:

> In altering a pattern, slashing and spreading the pattern by inserting a piece alters the outline less than does adding to the outer edges of the pattern.

At the station where the students were required to alter the pattern, there were the following supplies:

Rulers	Name tags
Tape measures	Scissors or shears
Patterns to be altered	Individual problem sheets
Tissue paper	Pins

All students in the same section of a class were asked to alter the same pattern. For example, students in Section I might be asked to alter a skirt pattern, and all of the students in Section II might be asked to alter a blouse pattern. Each student was required to alter only one piece of the garment pattern.

Scoring the Manipulative Problems. At the time the manipulative problems were submitted to the panel of judges for criticism, they were accompanied by a list of materials needed for performing each problem and a list of items which would be considered in scoring each problem. The items to be considered in scoring the problems were later transferred to a score sheet which was used in rating student performances (a copy of the score card may be found in Appendix E).

After the students had responded to the test, their scores were recorded on the individual score sheets. Problem I was scored on nine individual points; Problem II had three individual points; and Problem III had ten individual points. After keeping a record of the amount of time required to perform both the manipulative and judgmental problems, the writer decided that the four judgmental problems required about the

same amount of time for performance as the three manipulative problems. With this factor in mind, it seemed logical to give the two portions of the test the same numerical value. In order to do this, the manipulative problems were weighted so that an individual item in each of the three problems had a value of 4 points. Thus the 22 items in this portion of the test had a total score of 88.

Student Responses. For the three manipulative problems, students were actually required to use certain skills. They were asked to put their names on each piece of their handiwork and place it in the manila folder to be scored later.

Analysis of Responses. One hundred and twelve freshman clothing students in five sections of the beginning clothing course at Oklahoma State University and two sections of the beginning clothing course at Mississippi State College for Women responded to this station-to-station test. In evaluating the responses of these students, an item analysis determined which items were discriminating. In this item analysis a 15 per cent difference between responses in the upper and lower groups was chosen as providing enough difference to be discriminating. The Ross and Stanley formula which was used for determining discriminating items in the written test could not be used because it was developed for use with written objective tests which have from two to five options for each item.

A study of the data in Table XXI shows that 68 per cent of the individual items were discriminating at the 15 per cent level. Forty-four per cent of the items connected with the placement of buttonholes, Problem I, were discriminating. All of the items dealing with the cutting and joining of bias, Problem III, were discriminating, while

only one item in pattern alteration, Problem II, was discriminating. Items 3 and 4 in Problem I showed no discrimination. Item 9 in the first problem showed discrimination in the wrong direction.

TABLE XXI

ITEM ANALYSIS OF RESPONSES TO ITEMS IN MANIPULATIVE PROBLEMS MADE BY UPPER AND LOWER 27 PER CENT OF 112 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	15 Per Cent Discrimination
Problem I				
1	11	8	3	
2	16	7	9	x
3	18	18	0	
4	18	18	0	
5	21	19	2	
6	25	13	12	x
7	23	11	12	x
8	25	11	14	x
9	9	11	-2	
Problem II				
1	9	6	3	
2	12	6	6	x
3	11	7	4	
Problem III				
1	15	2	13	x
2	20	5	15	x
3	15	4	11	x
4	21	8	13	x
5	23	12	11	x
6	17	7	10	x
7	25	17	8	x
8	26	18	8	x
9	22	16	6	x
10	22	16	6	x

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

Data presented in Table XXII show the discriminating power of individual items in the three manipulative problems. The formula used for computing these indices of discrimination is given on page 60 of Chapter III. Over 27 per cent of the items received a good rating. Another 41 per cent received a satisfactory rating. Less than one-third of the items had a poor rating; in this later group, two items showed absolutely no discrimination; and one gave a negative discrimination.

TABLE XXII

DISCRIMINATING POWER OF ITEMS IN MANIPULATIVE PROBLEMS USING RESPONSES OF UPPER AND LOWER 27 PER CENT OF 112 STUDENTS[a]

Item No.	Index of Discrimination (per cent)	Rating[b]	Item No.	Index of Discrimination (per cent)	Rating[b]
Problem I			Problem III		
1	10	poor	1	43	good
2	30	satisfactory	2	50	good
3	0	poor	3	37	satisfactory
4	0	poor	4	43	good
5	7	poor	5	37	satisfactory
6	40	good	6	33	satisfactory
7	40	good	7	27	satisfactory
8	40	good	8	27	satisfactory
9	-7	poor	9	30	satisfactory
			10	20	satisfactory
Problem II					
1	10	poor			
2	20	satisfactory			
3	13	poor			

[a] Vide page 60 for formula for computing index of discrimination.

[b] Any discriminating value +0.40 or above is considered good. Any discriminating value between +0.40 and +0.20 is considered satisfactory. Any discriminating value between +0.20 and 0 is considered poor.

A comparison of the total per cent of items answered correctly by five different groups is shown in Table XXIII. Looking at the column that gives the responses of the total group of respondents, one may notice that the total per cent of individual items answered correctly ranges from five to 76 per cent. Within the upper 27 per cent of respondents, the per cent of correctly answered items ranges from 40 to 93 per cent. With the lower 27 per cent of respondents, the range of correctly answered items fluctuates from zero to 57 per cent. When comparing the per cent of correctly answered items among the ten highest and ten lowest scoring students, one finds that in three instances the lowest ranking students answered a larger per cent of items correctly than did the highest ranking students.

Under Problem III, none of the 30 students in the lower 27 per cent of the responders answered items 7 and 8 correctly. In addition to missing these two items, the ten lowest ranking students also missed item 9. There was a large negative discrepancy between the responses made to item 5 by the ten highest and the ten lowest ranking students.

TABLE XXIII

COMPARISON OF PER CENT OF ITEMS IN MANIPULATIVE PROBLEMS ANSWERED CORRECTLY

Problems and Items	Per Cent Answering Correctly				
	Total (112 Students)	Upper 27% (30 Students)	Lower 27% (30 Students)	10 Highest Students	10 Lowest Students
Problem I					
1	76	83	57	80	50
2	63	83	37	70	50
3	37	50	24	30	50
4	36	50	17	30	50
5	32	47	13	30	20
6	39	67	24	40	20
7	40	80	20	40	30
8	38	67	20	40	30
9	66	70	33	50	30
Problem II					
1	72	87	57	90	60
2	70	83	43	90	40
3	69	83	50	70	60
Problem III					
1	68	93	33	90	40
2	54	90	10	50	20
3	64	93	27	80	20
4	34	77	13	40	10
5	27	70	10	30	90
6	55	93	13	70	20
7	11	57	0	20	0
8	5	57	0	10	0
9	13	40	3	20	0
10	24	53	3	60	10

Coefficient of Reliability for Manipulative Problems. The reliability of a test may be computed statistically by using a coefficient of correlation. This coefficient may be computed by correlating the scores on the even numbered items with the scores on the odd numbered items and then applying the Spearman Brown Prophecy Formula. However, in this particular test there was not the same number of odd and even numbered items; therefore, the 22 items were separated into two equal groups by the use of a table of random numbers.[8] When the two groups were scored and the scores correlated, the correlation was .49. The application of the Spearman Brown Prophecy Formula brought the correlation to .66.

In analyzing the criteria formulated for constructing the station-to-station test, the writer felt that more effort should have been used in selecting meaningful experiences for the students. Although help was obtained from the college teachers, secondary teachers were not consulted regarding this aspect of the test. The problems do supplement the written test. More care might be given to the wording of the problematic situations. In attempting to meet the characteristics of a good performance test cited by Arny, the writer

1. Made an effort to choose problems which involved several skills rather than a single one. The examples of skills sought were those that the students would have likely had use for in many instances in clothing selection and construction.
2. Made a special effort to choose problems which could be set up inexpensively. Some of the materials used in this test may be used the second and third times.
3. Chose problems which could be performed in a matter of minutes. The entire test was set up for one 50-minute class period.
4. Devised a score sheet to check the results of each student's performance on each problem.

This device had more discriminating items than did the written test. The coefficient of reliability of .66 could be acceptable, and the comments of the panel of judges indicated that the test was valid.

Judgmental Problems

The section of the station-to-station device dealing with judgmental problems may be termed a recognition test. According to Arny[9] the purpose of such a test is to "check the students' ability to recognize and identify".

The objective for this portion of the test was "to develop judgment concerning good and poor workmanship in clothing construction". Students satisfactorily judging good and poor workmanship in clothing construction would exhibit competencies such as:

1. Recognizing suitable stitches for various hem finishes.
2. Defending choices made of satisfactory stitches for various hem finishes.
3. Recognizing satisfactory hem and seam widths for various garments.
4. Defending choices made of satisfactory hem and seam widths for various garments.
5. Recognizing when machine stitching has a good length and proper tension.
6. Being able to justify choices of proper length stitches and good tension.
7. Recognizing satisfactory means and finishes for various types of fabrics and garments.
8. Justifying choices of satisfactory means and finishes for various types of fabrics and garments.
9. Recognizing when collars, cuffs, pockets, and other garment details are satisfactorily constructed and finished.
10. Being able to defend choices made of satisfactory finishes in garment details such as collars, cuffs, and pockets.

With some of the above competencies in mind, four problems were constructed which required the students to make some discriminating choices when confronted with problematic situations (these four problems may be found in Appendix E).

For one of the problems, the students were asked to choose which of two blouses in a student's wardrobe would be most suitable for sports wear.

The generalization supporting this problem was:

> Since what consumers buy partially determines what will be produced, they need to recognize good construction in garments and refuse merchandise that is not of good quality and construction.

For this problem, two blouses were on display. The students were told that they might examine the blouses. Blouse I was a white, dacron and cotton sport blouse which could be worn either tucked inside or outside of a skirt. The seams were neat with a flat felled finish. The fabric was of good quality which would launder well. All of the machine stitching was neat and even and the same length throughout the blouse; the ends of the seams were strengthened by backstitching. The buttonholes were smooth and even and of a good length. A good quality of pearl buttons was used. They were reinforced with a piece of fabric sewed underneath. A pleat at the center back of the blouse gave extra fullness to the garment.

Blouse II was made of blue-green striped cotton. The fabric was very sleazy. The sleeves were three-fourths length with a not-too-neat finish at the bottom. Buttons on the blouse were very cheap looking; the buttonholes were too large, and they were poorly made. The stitching throughout the blouse was of varying lengths. Some of

the machine stitching was chain-locked. There were loose threads dangling from the seams. None of the threads were tied or back-stitched. The collar lapels were not the same size. The mock flat felled seams were of varying widths, especially on the yoke and sleeves. After the students selected what they thought to be the better blouse, they were asked to defend their choices with written statements.

Scoring the Judgmental Problems. A score was arbitrarily set for each judgmental problem. If a student made a correct choice in answering a problem, she was given 2 points, and for each correct statement given to support a choice, the student was given an additional point. Applying this arbitrary score to this portion of the test would make a perfect score total 88. This was the same number of points given to the manipulative portion of the test. When a student failed to respond to a problem, it was scored as if she had missed it. When a student partially answered a problem, she was given credit for the work which she did.

Student Responses. As the students moved to each of the four "stations" to solve the problems, they received specific instructions. After reading the problem and examining the materials to be used, students made their choices of solutions and defended them.

Analysis of Responses. An analysis of the individual items in the judgmental problems determined which items were discriminating. A difference of at least 15 per cent between responses made by the upper and lower 27 per cent of the respondents was considered satisfactory discrimination. A study of Table XXIV shows that only two items in Problem IV proved to be nondiscriminating. A further scrutiny of these

two items reveals that the first item, Hem II, Item 2, refers to the suitability of use of hemming tape on a heavy rayon material. The second nondiscriminating item, Hem III, Part A, refers to the choice of a hem width for a full skirt in a batiste dress. In Problem V, which deals with the selection of suitable machine stitching, all of the items were discriminating. Only one item, Sample II, Item 2, was non-discriminating in Problem VI. This item dealt with one of the reasons a rayon cotton faille fabric would not be suitable for a beginner to use in sewing. The particular reason missed was that an imprint of machine stitching would be left if stitching had to be removed from the garment. In Problem VII, 61 per cent of the items were discriminating. Eighty-six per cent of the total items on the judgmental test were discriminating.

TABLE XXIV

ITEM ANALYSIS OF RESPONSES TO ITEMS IN JUDGMENTAL PROBLEMS MADE BY UPPER AND LOWER 27 PER CENT OF 112 STUDENTS

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	$W_L - W_H$[a]	15 Per Cent Discrimination
Problem IV				
Hem No. 1				
B	15	5	10	x
1	23	16	7	x
2	22	14	8	x
3	22	15	7	x
4	20	11	9	x
Hem No. 2				
A	21	9	12	x
1	26	14	12	x
2	29	26	3	
3	22	13	9	x
4	26	12	14	x
5	21	10	11	x
Hem No. 3				
A	7	5	2	
1	12	6	6	x
2	25	9	16	x
3	21	13	8	x
4	26	19	7	x
Hem No. 4				
A	6	0	6	x
1	16	6	10	x
2	17	7	10	x
3	15	4	11	x
4	23	11	12	x
5	24	19	5	x
Hem No. 5				
B	17	3	14	x
1	17	5	12	x
2	27	12	15	x
3	28	15	13	x

TABLE XXIV (Continued)

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	15 Per Cent Discrimination
Problem V				
Sample No. 1				
poor	27	7	20	x
reason	28	10	18	x
remedy	29	12	17	x
Sample No. 2				
good	22	10	12	x
reason	24	9	15	x
Sample No. 3				
poor	14	4	10	x
reason	22	10	12	x
remedy	27	12	15	x
Problem VI				
Sample No. 1				
suitable	11	0	11	x
1	16	1	15	x
2	20	1	19	x
3	18	2	16	x
4	15	0	15	x
Sample No. 2				
unsuitable	11	3	8	x
1	27	16	11	x
2	27	23	4	
3	22	9	13	x
Sample No. 3				
unsuitable	18	7	11	x
1	23	6	17	x
2	29	12	17	x
Sample No. 4				
unsuitable	10	4	6	x
1	26	8	18	x
2	21	5	16	x
3	25	14	11	x
4	23	13	10	x

TABLE XXIV (Continued)

Item No.	W_L No. Wrong in Low Group	W_H No. Wrong in High Group	W_L-W_H[a]	15 Per Cent Discrimination
Sample No. 5 unsuitable	6	0	6	x
1	27	15	12	x
2	15	7	8	x
3	20	4	16	x
Problem VII				
Part I				
A	12	1	11	x
1	20	14	6	x
2	20	8	12	x
3	16	5	11	x
4	19	15	4	
5	14	4	10	x
6	20	20	0	
7	19	19	0	
8	16	10	6	x
Part II				
B	13	1	12	x
1	18	14	4	
2	18	8	10	x
3	18	9	9	x
4	19	15	4	
5	20	15	5	x
6	20	16	4	
7	20	16	4	
8	20	15	5	x

[a]Difference between number of students in upper and lower 27 per cent who missed the items.

Indices of discrimination were prepared for each item and are recorded in Table XXV. Thirty-eight per cent of the judgmental items had a "good" rating. This meant that their discriminating power came to 40 or above 40 per cent. An additional 44 per cent of the items had a "satisfactory" rating which ranged from 0.20 to 0.40 per cent

discrimination. The remaining 12 per cent of the items were rated as "poor" discriminators. However, none of these items showed negative discrimination.

TABLE XXV

DISCRIMINATING POWER OF ITEMS IN JUDGMENTAL PROBLEMS USING RESPONSES OF UPPER AND LOWER 27 PER CENT OF 112 STUDENTS[a]

Item No.	Discrimination (per cent)	Rating[b]
Problem IV		
Hem No. 1		
B	33	satisfactory
1	23	satisfactory
2	27	satisfactory
3	23	satisfactory
4		
Hem No. 2		
A	40	good
1	40	good
2	10	poor
3	30	satisfactory
4	47	good
5	47	good
Hem No. 3		
A	7	poor
1	20	satisfactory
2	53	good
3	27	satisfactory
4	23	satisfactory
Hem No. 4		
A	20	satisfactory
1	33	satisfactory
2	36	satisfactory
3	36	satisfactory
4	40	good
5	17	poor

TABLE XXV (Continued)

Item No.	Discrimination (per cent)	Rating[b]
Hem No. 5		
B	43	good
1	40	good
2	33	satisfactory
3	30	satisfactory
Problem V		
Sample No. 1		
poor	67	good
reason	60	good
remedy	63	good
Sample No. 2		
good	40	good
reason	50	good
Sample No. 3		
poor	33	satisfactory
reason	40	good
remedy	50	good
Problem VI		
Sample No. 1		
suitable	36	satisfactory
1	50	good
2	63	good
3	53	good
4	50	good
Sample No. 2		
unsuitable	27	satisfactory
1	36	satisfactory
2	13	poor
3	43	good
Sample No. 3		
unsuitable	36	satisfactory
1	57	good
2	57	good

TABLE XXV (Continued)

Item No.	Discrimination (per cent)	Rating[b]
Sample No. 4		
unsuitable	20	satisfactory
1	60	good
2	53	good
3	36	satisfactory
4	33	satisfactory
Sample No. 5		
unsuitable	20	satisfactory
1	40	good
2	27	satisfactory
3	53	good
Problem VII		
Part I		
A	36	satisfactory
1	20	satisfactory
2	40	good
3	36	satisfactory
4	13	poor
5	33	satisfactory
6	0	poor
7	0	poor
8	20	satisfactory
Part II		
B	40	good
1	13	poor
2	33	satisfactory
3	30	satisfactory
4	13	poor
5	17	poor
6	13	poor
7	13	poor
8	17	poor

[a] Vide page 60 for formula for computing index of discrimination.

[b] Any discriminating value +0.40 or above is considered good. Any discriminating value between +0.40 and +0.20 is considered satisfactory. Any discriminating value between +0.20 and 0 is considered poor.

A comparison of the per cent of items answered correctly by the total group responding to the test, the upper and lower 27 per cent of the students responding to the test, and the 20 students making the ten highest and the ten lowest grades on the test are presented in Table XXVI. In no instance did the lower scoring 27 per cent of the students answer a larger per cent of items correctly than did the upper 27 per cent. However, under Problem VII, Part I, Items 6 and 7, the same per cent of students in each group answered the items identically.

TABLE XXVI

COMPARISON OF PER CENT OF ITEMS IN JUDGMENTAL PROBLEMS ANSWERED CORRECTLY

Problems and Items	Per Cent Answering Correctly				
	Total (112 Students)	Upper 27% (30 Students)	Lower 27% (30 Students)	10 Highest Students	10 Lowest Students
Problem IV					
Hem No. 1					
B	67	83	50	50	50
1	36	47	24	30	10
2	35	53	27	30	0
3	35	50	27	30	10
4	39	63	33	3	10
Hem No. 2					
A	47	70	30	60	60
1	21	53	13	40	40
2	26	13	3	20	0
3	35	57	27	50	30
4	32	60	13	40	30
5	26	50	27	60	30
Hem No. 3					
A	78	83	77	50	70
1	68	80	60	40	60
2	41	70	17	30	20
3	44	57	30	30	20
4	13	37	13	30	20

TABLE XXVI (Continued)

Problems and Items	Per Cent Answering Correctly				
	Total (112 Students)	Upper 27% (30 Students)	Lower 27% (30 Students)	10 Highest Students	10 Lowest Students
Hem No. 4					
A	87	100	80	70	100
1	60	80	47	30	70
2	60	77	43	30	60
3	64	87	50	60	40
4	42	63	24	30	30
5	26	37	20	10	90
Hem No. 5					
B	69	90	43	70	80
1	65	83	43	70	80
2	33	60	10	40	30
3	26	70	7	40	30
Problem V					
Part I					
poor	43	77	10	50	50
reason	34	67	7	50	20
remedy	27	60	3	50	10
Part II					
good	44	67	27	50	50
reason	41	70	20	50	40
Part III					
poor	70	87	53	90	70
reason	47	67	27	80	60
remedy	35	60	10	80	10
Problem VI					
Part I					
suitable	87	100	63	100	90
1	74	97	47	80	80
2	68	97	33	80	50
3	69	93	40	70	70
4	79	100	50	100	90

TABLE XXVI (Continued)

Problems and Items	Per Cent Answering Correctly				
	Total (112 Students)	Upper 27% (30 Students)	Lower 27% (30 Students)	10 Highest Students	10 Lowest Students
Part II					
unsuitable	79	90	63	80	90
1	31	47	10	40	10
2	13	24	10	30	20
3	40	70	27	60	50
Part III					
unsuitable	60	77	40	90	30
1	53	80	23	80	30
2	26	60	3	60	20
Part IV					
unsuitable	79	87	67	100	70
1	56	72	13	80	40
2	56	83	30	90	60
3	34	53	17	50	10
4	37	57	23	70	40
Part V					
unsuitable	88	100	80	100	100
1	35	50	10	60	50
2	62	77	50	50	100
3	63	87	33	90	90
Problem VII					
Part I					
A	40	97	60	50	60
1	31	53	33	40	20
2	32	73	33	40	20
3	38	83	47	40	10
4	29	50	37	50	10
5	34	87	53	50	30
6	38	33	33	40	20
7	33	37	37	30	50
8	35	67	47	40	60

TABLE XXVI (Continued)

Problems and Items	Per Cent Answering Correctly				
	Total (112 Students)	Upper 27% (30 Students)	Lower 27% (30 Students)	10 Highest Students	10 Lowest Students
Part II					
B	54	97	57	50	50
1	24	53	40	50	50
2	21	73	40	40	0
3	29	70	40	50	0
4	28	50	37	40	20
5	25	50	33	50	30
6	13	47	33	50	0
7	12	47	33	30	40
8	10	50	33	20	20

A comparison of the responses made by the students scoring the ten highest and ten lowest scores on the test shows several reversals of the per cent of items answered correctly. Seven of these reversals occurred in Problem IV. Two were present in Problem VI, and Problem VII had three. A further examination of the data in this table shows that in several instances these two groups answered the same per cent of items correctly. This phenomenon may be noted in four instances in Problem IV, in two instances in Problem V, in four instances in Problem VI, and in two instances in Part II of Problem VII.

In considering the responses made by the 30 students in the upper 27 per cent, one may readily observe that all of these responders answered two items correctly in Part I of Problem VI. All of the students in this group made the correct decision in one portion of Part V in this same problem.

A further scrutiny of Table XXVI indicates that the ten students making the highest scores on this total test made the correct decisions as to the most suitable hem in three out of the five different types presented in Problem VI. In Part I of this problem, all ten students gave the correct answer for item four.

Coefficient of Reliability for Judgmental Problems. The split-half technique was used to compute a coefficient of correlation for the judgmental problems. Since there was not an equal number of odd and even items in this portion of the test, the problems to be used in each half were randomly drawn. When the items in the two groups were correlated, the computation was .17. The application of the Spearman Brown Prophecy Formula brought the coefficient of reliability to .29.

The four problems in this portion of the test seemed to be pertinent ones. Inexpensive materials were used, and these were chosen in order that they might be used more than one time. When a 15 per cent difference in scores between the upper and lower scoring groups was used, 86 per cent of the items were discriminating. There was no negative discrimination, but two items had no difference in responses between the two groups. A different type of response to this portion of the test might have afforded a more reliable coefficient of reliability. The computed coefficient was .29; this could not be accepted as a favorable degree of reliability. This portion of the test had a higher degree of validity according to the judgment of the panel of judges.

Student Responses to Total Station-to-Station Test

The station-to-station test was devised to evaluate two distinct competencies: (1) ability of students in using manipulative skills pertaining to the construction of clothing, and (2) ability of students in making discriminating choices when confronted with problematic situations pertaining to clothing selection and construction.

Table XXVII indicates the number and per cent of students who responded to the problems in this test. Forty-two per cent of the 112 students answered all seven problems. Another 30 per cent answered six of the problems, while 25 per cent of the total group attempted five of them. Only three per cent of the group answered as few as four problems.

When the responses to the test are compared, the data show that a larger per cent of students answered all of the judgmental problems than attempted the manipulative ones. One respondent did not perform any of the problems requiring the use of manipulative skills.

TABLE XXVII

NUMBER AND PER CENT OF STUDENTS ATTEMPTING TO ANSWER EACH OF THE PROBLEMS ON THE STATION-TO-STATION TEST

Problem and Number		Number Answering	Per Cent Answering
manipulative			
all 3		75	67
2		28	25
1		8	7
0		1	1
	Total	112	100
judgmental			
all 4		76	68
3		22	20
2		14	12
1		0	0
0		0	0
	Total	112	100
total			
all 7		47	42
6		34	30
5		28	25
4		3	3
	Total	112	100

The data in Table XXVIII show how many students attempted to answer each of the seven problems. Ninety-six per cent of the total group responded to the judgmental problem in which a suitable fabric for a beginner's dress was to be chosen. Ninety per cent of the group

attempted to answer the problem pertaining to the selection of suitable hems for various types of garments. The smallest number of responses was given the problem associated with the cutting and joining of a bias strip. This is easily explained by the comments which the writer and the instructors helping with the test overheard. Quite a number of the students indicated that they had forgotten how to cut and join bias. After scoring the responses, it was quite evident that several students attempting the performance had forgotten, or had never known, how this task should be done.

TABLE XXVIII

NUMBER AND PER CENT OF STUDENTS ATTEMPTING TO ANSWER SPECIFIED PROBLEMS IN STATION-TO-STATION TEST WITH RANGE OF SCORES

Problem	No. of Students Attempting Problem	Per Cent of Students Attempting Problem	Possible Score	Range of Scores
manipulative				
buttonhole	140	89	36	36-0
pattern alteration	99	88	12	12-0
cutting and joining bias	90	80	40	40-4
judgmental				
hems	101	90	31	30-4
judgment of machine stitching	98	87	11	11-3
suitable fabrics for beginners	106	96	26	26-5
blouse selection	98	87	20	18-2

Table XXIX gives a summary of the individual items in the total station-to-station test which proved to be discriminating at the 15 per cent level. The items are arranged in rank order with the item which proved to be most discriminating at the beginning of the list and the item which proved to be least discriminating at the end of the list. Eighty-three per cent of the items are discriminating. Four per cent show no discrimination and one per cent of the items shows a negative discrimination.

TABLE XXIX

RANK ORDER OF INDIVIDUAL ITEMS IN STATION-TO-STATION TEST

Problem	Item Part	Number	Rank Order	W_L Low Group No.	W_H High Group No.	$W_L - W_H$	15 Per Cent Discrimination
V	1	poor	1	27	7	20	x
VI	1	2	2	20	1	19	x
V	1	reason	3	28	10	18	x
VI	4	1	4	26	8	18	x
V	1	remedy	5	29	12	17	x
VI	3	2	6	29	12	17	x
VI	3	1	7	23	6	17	x
IV	3	2	8	25	9	16	x
VI	4	2	9	21	5	16	x
VI	5	3	10	20	4	16	x
VI	1	3	11	18	2	16	x
IV	5	2	12	27	12	15	x
V	3	remedy	13	27	12	15	x
V	2	reason	14	24	9	15	x
III	2	2	15	20	5	15	x
VI	1	1	16	16	1	15	x
VI	1	4	17	15	0	15	x
IV	2	4	18	26	12	14	x
I		8	19	25	11	14	x
IV	5	B	20	17	3	14	x

TABLE XXIX (Continued)

Problem	Item Part	Number	Rank Order	W_L Low Group No.	W_H High Group No.	W_L-W_H	15 Per Cent Discrimination
IV	5	3	21	28	15	13	x
VI	2	3	22	22	9	13	x
III		4	23	21	8	13	x
III		1	24	15	2	13	x
VI	5	1	25	27	15	12	x
IV	2	2	26	26	14	12	x
I		6	27	25	13	12	x
I		7	28	23	11	12	x
IV	4	4	29	23	11	12	x
V	2	good	30	22	10	12	x
V	3	reason	31	22	10	12	x
IV	2	A	32	21	9	12	x
VII	I	2	33	20	8	12	x
IV	5	1	34	17	5	12	x
VII	II	poor	35	13	1	12	x
VI	2	1	36	27	16	11	x
VI	4	3	37	25	14	11	x
VII	3	unsuitable	38	18	7	11	x
VII	5	3	39	23	12	11	x
VII	1	3	40	16	5	11	x
III		3	41	15	4	11	x
IV		3	42	15	4	11	x
VII	I	better	43	12	1	11	x
VI	1	suitable	44	11	0	11	x
VI	4	4	45	23	13	10	x
VII	II	3	46	18	8	10	x
III		6	47	17	7	10	x
IV	4	2	48	17	7	10	x
IV	4	1	49	16	6	10	x
IV	1	B	50	15	5	10	x
V	3	poor	51	14	4	10	x
VII	I	5	52	14	4	10	x
III		9	53	27	18	9	x
IV	2	3	54	22	11	9	x
IV	1	4	55	20	11	9	x

TABLE XXIX (Continued)

Problem	Item Part	Number	Rank Order	W_L Low Group No.	W_H High Group No.	W_L-W_H	15 Per Cent Discrimination
VII	II	4	56	18	9	9	x
I		2	57	16	7	9	x
III		8	58	26	18	8	x
III		7	59	25	17	8	x
IV	1	2	60	22	14	8	x
IV	3	3	61	21	13	8	x
VI	5	2	62	15	7	8	x
VI	2	unsuitable	63	11	3	8	x
IV	3	4	64	26	19	8	x
IV	1	1	65	23	16	7	x
IV	1	3	66	22	15	7	x
III		10	67	22	16	6	x
VII		1	68	20	14	6	x
VII	I	8	69	16	10	6	x
II	II	2	70	12	6	6	x
IV	3	1	71	12	6	6	x
VI	3	unsuitable	72	10	4	6	x
IV	4	A	73	6	0	6	x
IV	4	5	74	24	19	5	x
VII	II	5	75	20	15	5	x
VII	II	8	76	20	15	5	x
VI	2	2	77	27	23	4	
VII	II	6	78	20	16	4	
VII	II	7	79	20	16	4	
VII	I	4	80	19	15	4	
VII	II	4	81	19	15	4	
VII	II	1	82	18	14	4	
II		3	83	11	7	4	
IV	2	2	84	29	26	3	
II		1	85	9	6	3	
I		5	86	21	19	2	
IV	3	A	87	7	5	2	
I		3	88	18	18	0	
I		4	89	18	18	0	
VII	1	6	90	20	20	0	
VII	I	7	91	19	19	0	
I	1	9	92	9	11	-2	

Data in Table XXX furnishes information concerning the amount of previous clothing experiences of the ten students making the highest scores on the station-to-station test and the ten students making the lowest scores. This comparison is made in an effort to ascertain if there seems to be any relationship between students' scores on the test and the amount of previous clothing experiences they have had. Five of the highest ranking students had no 4-H clothing projects. The other five students in this group had enrolled in 4-H clothing projects for more than four years. All ten of the students had had at least one clothing unit in secondary school, and one student had had six years. The entire group reported that they had done "much" sewing at home.

Seven of the lowest ranking students had had no clothing experiences in 4-H. One student indicated that she had done no sewing at home, at school, or in 4-H. The other nine students had taken clothing in school from two to four years. Three of the lowest ranking students indicated that they had not sewed any at home.

TABLE XXX

SCORES AND AMOUNT OF PREVIOUS CLOTHING EXPERIENCE OF STUDENTS MAKING THE TEN HIGHEST AND THE TEN LOWEST SCORES ON THE STATION-TO-STATION TEST

Students	Score		No. of Years of 4-H Experience	No. of Years Homemaking in School	Amount of Home Experience
	High	Low			
1	148		0	6	much
2	142		4	1	much
3	141		9	5	much
4	137		0	4	much
5	136		0	4	much
6	135		4	1	much
7	135		4	1	much
8	131		4	3	much
9	129		0	3	much
10	127		0	5	much
1		58	0	4	some
2		57	0	3	some
3		56	0	0	none
4		55	4	4	some
5		53	0	2	none
6		49	4	3	some
7		47	0	2	some
8		40	0	3	some
9		39	1	2	none
10		39	0	4	some

Validity of Station-to-Station Test

A statistical coefficient of validity would indicate the degree of relationship which would be found between students' scores on the test and some outside criterion. In home economics it has been difficult to find a satisfactory outside criterion. Arny[10] said, "Neither IQ nor

[10]Ibid., p. 94.

grade point ratio is likely to show any significant relationship with achievement in some phases of home economics such as related art or clothing construction".

Since it was not possible to use a statistical analysis to compute a coefficient of validity, subjective evidence was used. Members of the Clothing, Textiles, and Merchandising staffs at Mississippi State College for Women and Oklahoma State University served as a panel of judges to determine whether the problems presented in this device evaluated the objectives chosen for the study. They also passed judgment on the key to the answers for the problems.

Reliability of Station-to-Station Test

The split-half technique was used to get a coefficient of reliability for the total station-to-station test. However, the scores on the odd items were not correlated with the scores on the even items, since this test did not have the same number of odd and even items. A table of random numbers was used in selecting items to be placed in both groups. When the two sets of scores were correlated, the computation was .407. By applying the Spearman Brown Prophecy Formula, the self-correlation of the whole test was estimated. The reliability coefficient for the entire test was .58.

Correlation of Manipulative and Judgmental Scores

Individual student scores on the items evaluating clothing construction manipulative skills were correlated with the scores evaluating the clothing selection and construction judgmental skills. The correlation was made in order to see if there seemed to be a close

relationship between these two clothing competencies. The computed correlation was .38. This low correlation was in harmony with findings in studies which were reported on pages 104 and 105 in Chapter III.

Summary

Since educators have indicated that students' possession of verbal skills does not assure them of identical performance in the psychomotor realm or in the making of correct choices when confronted with problematic situations, a practical clothing test was developed to supplement the written test. This evaluation device was labeled as a station-to-station test because the students were required to move from one station to another in solving the problems.

Three of the problems required the use of manipulative skills. It is true that the use of knowledge and reasoning ability were required in the solution of the problems, but knowledge and reasoning ability alone can not be used to evaluate the students' manipulative skills.

The other four problems on the test required the application of judgmental skills or the exemplification of reasoning ability. Students were required to make choices in solving problems, and then they were to defend the choices which they had made.

The following steps were taken in developing this test:

1. Objectives for evaluating manipulative and judgmental skills were identified.
2. The objectives were defined in terms of student competencies.
3. Criteria for the development of the problems were formulated.
4. Problems were chosen for evaluation which were based on generalizations covering the content areas of clothing construction and selection.

5. Properties for use in solving the problems were assembled.
6. Mechanics for administering the test were developed.
7. A key for scoring the problems was devised.

Responses to the test made by 112 students were reported in the latter part of this chapter. When the total station-to-station test was checked against the characteristics of a test proposed by Arny (vide page 111), this device received a high rating. Problems were selected which involved a large number of skills. Inexpensive materials were used. The problems were set up to be answered in a 50-minute period, and a large portion of the students did answer all of the problems. Testing situations were chosen which exemplified the types of problems which students could be expected to encounter in real life. The score card devised for rating the performances of students could be checked in five minutes. Although this type of scoring seemed to be an improvement over previously reported scorings of practical tests, this evaluation could probably be improved by making the responses more objective.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

Summary

The study was concerned with the problem of revising a written clothing placement test and developing a practical test for the assessment of specified clothing competencies of beginning college students. To help solve the problem, five subproblems were formulated: (1) the development of a questionnaire-check list to obtain information pertaining to the students' previous experiences in clothing, (2) the identification of some objectives common to the secondary clothing programs in Mississippi and Oklahoma and to the beginning clothing courses at Mississippi State College for Women and Oklahoma State University, (3) the examination of the Oklahoma State University Written Clothing Pretest to determine which individual items were discriminating, (4) the development of an evaluation device to assess students' ability to apply generalizations in the solution of problems related to clothing selection and construction, and (5) the development of a station-to-station test to assess students' manipulative and judgmental skills pertaining to clothing selection and construction.

Aid was received from an evaluation expert and a specialist in clothing in developing the questionnaire-check list. Thirty freshman clothing students at Mississippi State College for Women served as a

pilot group to evaluate this instrument. The revised questionnaire was checked by 112 freshman clothing students at Mississippi State College for Women and Oklahoma State University. Responses from these students revealed their varied clothing experiences and supported the need for clothing placement devices.

Ten objectives common to the four programs represented in the study were identified. Then ten secondary homemaking teachers, two state homemaking supervisors with members of their staffs, and members of the Clothing, Textile, and Merchandising staffs at the two institutions of higher learning gave the consensus that these objectives were important.

An item analysis was calculated on the responses to the Oklahoma State Clothing Pretest given by the freshman clothing students entering Mississippi State College for Women and Oklahoma State University during the fall semester, 1960. Using these discriminating items as a foundation, the placement test was revised.

An evaluation device to assess the students' ability to apply generalizations in solving problems in clothing construction and selection was developed. The panel of judges, from the two institutions of higher learning participating in the study, passed judgment on the content validity of the device.

A station-to-station test was developed. The panel of judges gave their opinion on the validity of the device and a coefficient of reliability was computed.

Needs for this study have been supported by the growing demand for better articulation between homemaking programs in secondary schools and home economics curriculums in institutions of higher education.

Colleges and universities are being challenged to provide placement programs which may aid in accelerating students' progress when they have already attained some of the objectives of the college curriculums.

The study was based upon these assumptions: (1) the main purpose of education is to change the behavior patterns of human beings, (2) the educational objectives exemplify the behavior patterns which the school seeks to change, (3) evaluation is the process which provides evidence to show to what degree these changes in behavior patterns have occurred, (4) human behavior is so complex it cannot be adequately appraised by a single score or grade, and (5) evaluation techniques are not limited to paper-and-pencil tests.

A coefficient of reliability of .74 was computed for the written test using Kuder-Richardson Formula No. 20. The coefficient of reliability for the station-to-station test was .58. This coefficient was computed by the split-half technique.

The validity of the evaluation devices was partially determined by the judgment of the writer who identified the objectives, built the grid showing the content areas and competencies being evaluated, and developed the individual problems along with their answers. The judgment of judges participating in the study further validated the objectives, the test items, and their answers.

Conclusions

The following conclusions have been drawn from an analysis of data in the study:

1. An analysis of the responses to the individual items on the written test, separated into content areas, showed that the following per cent were answered correctly: (1) selection, 62 per cent; (2) construction, 60 per cent; (3) care, 55 per cent. From this, one might conclude that these students definitely entered college with some competencies in clothing selection, construction, and care. This would indicate a definite need for determining a satisfactory method of placing students in order that they might be properly challenged.

2. The following per cent of the different types of test items were answered correctly by the 96 students responding to the written test: (1) matching, 64 per cent; (2) multiple-choice, 53 per cent; (3) true-false, 57 per cent, and (4) application of principles, 64 per cent. This seems to be a normal distribution of scores among the various types of items with the exception of the responses to the application of principles items. However, when thinking of the per cent of application of principles items answered correctly, one should remember that 14 per cent of the students did not complete the written test; these students' scores are not included in these percentages. The inclusion of their scores could have caused this per cent of correctly answered items to have fluctuated in either direction.

Application of principles items were further analyzed to determine what per cent of each type of answer was given. These analyses revealed that, in some instances, students in the upper 27 per cent of

the group made lower scores than those in the lower 27 per cent, and at the same time, the persons making the ten highest scores on the test made lower scores than those making the ten lowest scores on the test. Further research might help determine whether these individual items need to be restated, whether the students were "guessing" the correct answer, or whether some other factors were causing this reversal.

3. In considering both the written and the station-to-station test, one might surmise that the "directions" for responding to each portion of the tests were quite clear. No responses had to be deleted because of students' failure to follow directions.

4. The coefficient of reliability for the written test was considered satisfactory; however, the coefficient of reliability for the practical test is questionable. It is very difficult to get reliability on performance tests. In this particular instrument, the writer's subjective judgment entered into the rating of the students' performance. Questions on this portion of the test were free responses, and it is generally agreed that this type of answer is difficult to score objectively.

5. There was a wide range of correlations between scores evaluating various clothing competencies of students. The correlation between scores on items assessing students' knowledge of clothing selection, construction, and care and those assessing their ability to apply principles was .16. The correlation of scores of manipulative versus judgmental skills was .38. The correlation of scores on written clothing construction items versus scores on items using manipulative skills was .45. Correlations of scores between various

competencies evaluated in this study seem to indicate that either high or low ratings on one competency does not assure one of a comparable score on another competency.

In constructing this test, some questions asked on the written test were repeated on the performance test. Scores on the two were correlated. For instance, item 28 on the written test was a multiple-choice item which asked how material should be folded to cut a true bias, and item 3, Problem III, on the manipulative test asked if bias was cut on a true bias. The correlation of these scores was .31. Item 24 on the written test was correlated with item 6, Problem I, on the manipulative test. The computation was .78. Further investigation would be needed before attempting to determine whether one could predict a student's performance on one competency from the score made on the other.

6. It is difficult to construct objective items on the psychological, sociological, and economic aspects of clothing because of the attitude and value judgments involved in these types of problems. The writer conjectured that this is one of the reasons that so few tests include items of this nature.

7. More test items might have proved discriminating if time had been allowed for a pilot study. This is especially true of the station-to-station test; some of the wording of the problems seemed to be confusing to a few of the students.

8. In considering the evaluation devices as a whole, the conclusion was reached that they do have merit for use in assessing selected clothing competencies of beginning college students.

Recommendations

Further studies could be conducted to improve the evaluation devices revised and developed in this study. To improve the written test, nondiscriminating items evaluating the students' knowledge of clothing construction, selection, and care and evaluating the students' ability to apply principles in these areas should be eliminated. An attempt should be made to replace these with items which would be discriminating. A larger section of the written test should be devoted to problems which require students to apply principles and some items should be included on the care of clothing. The different types of reasons for supporting or not supporting the conclusions reached in these problems should be reduced in the Application of Principles portion of the test. The writer would recommend that those nonsupporting items labeled as ridicule, popular misconceptions, and unacceptable practices be eliminated.

The free-response items should be omitted to facilitate and to hasten the scoring of the judgmental skills in the station-to-station test. They could be replaced with a check-list of reasons for making a particular choice when faced with a problematic situation. By making the responses on this portion of the test objective, the reliability of the instrument should be enhanced. To improve the reliability of the manipulative portion of the test, more than one judge could be asked to determine the quality of individual student performance.

Other types of validity for these instruments might be determined by comparing the scores on the placement test with the final course grades. In an attempt to give additional validation to these devices,

the scores on the manipulative problems might be correlated with the scores on the garments that are made by students.

Additional manipulative and judgmental problems should be added to the station-to-station test in order that problems might be rotated from time to time, thus eliminating specific student preparation. Persons developing the test should work in harmony with secondary homemaking teachers and college instructors to select problems which evaluate pertinent aspects of clothing construction, selection, and care. The test developer also needs to work closely with evaluation experts and research personnel in clothing and textiles.

Further studies could be conducted to determine the value of these evaluation devices in placing students in the beginning clothing courses at Mississippi State College for Women and Oklahoma State University.

Additional evaluation devices could be developed to assess other clothing competencies of students which have not been included in this study.

Supplementary studies could be conducted in an attempt to ascertain whether the same evaluation instruments may be used satisfactorily for evaluating students' clothing competencies in various types of institutions. In such studies it would be understood that the competencies being evaluated would be based on objectives which were common to all clothing programs involved in the study.

Further studies could be conducted to determine the feasibility of using these evaluation instruments as exemption devices.

Implications

Responses to the evaluation devices revised and developed in this study give a strong indication that there is a definite need for clothing placement tests at the college level. This belief is substantiated by the responses of students to the questionnaire-check list. Of the 112 students in the study, only four had had no clothing units in secondary schooling. More than half of the written test items, divided into the three content areas, were answered correctly by the total group. The above evidence seems to indicate that students are definitely receiving experiences in the selection, construction, and care of clothing before they enter college. When students are required to repeat clothing experiences, they may become dissatisfied and restless, thus losing interest in the course. Therefore, placement tests might help alleviate this problem.

A close scrutiny of the students' responses in the Application of Principles test revealed that students need further help in solving problems pertaining to the clothing selection and construction. Students need special help or guidance in supporting reasons for making solutions to problems. A large per cent of the students indicated that an "assumed conclusion" supported the solution to a problem. In some instances students in the upper groups answered a smaller per cent of items correctly than did those in the lower groups. The writer could only speculate as to the reasons for this, but it does seem to imply that in both secondary and beginning clothing courses, more experiences should be provided to help students develop ability in applying principles in the solution of problems.

Evidence obtained in this study points to a need for evaluating different types of clothing competencies in order to place students most satisfactorily in their clothing courses. Correlation between scores on various competencies evaluated in the study implied that a high score on one competency did not necessarily mean that a student would receive a similar high score on a second competency. Student comments on the station-to-station test implied that they guessed at some of the answers to written questions, but this was not possible in performing the manipulative and the judgmental skills.

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A P P E N D I X E S

APPENDIX A

QUESTIONNAIRE-CHECK LIST OF CLOTHING EXPERIENCES

YOUR EXPERIENCES IN SELECTING, CONSTRUCTING AND CARING FOR CLOTHING

Will you please give the following information so that we may learn how much experience you have had in selecting, constructing and caring for clothing before attending college?

Name_____ Major_____ Classification_____

High School Attended_____ Approximate Size of High School from
Year Graduated_____ Which You Graduated_____

1. Circle the grade(s) in which you had clothing in school: 7, 8, 9, 10, 11, 12. Check (x) whether the clothing classes were set up for: entire school year_____; one semester_____; unit within a semester_____.

2. Circle the number of years you have had 4-H clothing project: 0, 1, 2, 3, 4, or more.

3. Check how much sewing you have done at home: none____ some____ much____.

4. Indicate on the back of this page any other training or experience you have had in sewing, such as White or Singer Sewing lessons. What garments did you make?

5. On the following chart indicate approximately how many garments you have made before coming to college and where you made the garments.

Sample:

TYPE OF GARMENT	NUMBER MADE IN HOME ECONOMICS	NUMBER MADE IN 4-H	NUMBER MADE AT HOME
Shorts	1	0	3

TYPE OF GARMENT	NUMBER MADE IN HOME ECONOMICS	NUMBER MADE IN 4-H	NUMBER MADE AT HOME
Blouses			
Skirts			
Jumpers			
Jackets			
Dresses			
Suits			
Coats			
Pajamas			
List Others			

On the following chart indicate approximately how many garments you have purchased for yourself during the past year. Indicate whether you made the selection alone or with the aid of your mother, a friend, a sales person, or others.

Sample:

TYPE OF GARMENT	CHOSE WITH MUCH HELP		CHOSE WITH SOME HELP		CHOSE ALONE
	Number	Who Helped?	Number	Who Helped?	Number
a. Black slip	1	friend	0		1

TYPE GARMENT	CHOSE WITH MUCH HELP		CHOSE WITH SOME HELP		CHOSE ALONE
Equipment	Number	Who Helped?	Number	Who Helped?	Number
Blouses					
Skirts					
Sweaters					
Coats					
Dresses					
Brassieres					
Girdles					
Slips					
Hats					
Socks or Hose					
Purses					
Shoes					
Pajamas					
Others					

7. On the following chart check (x) which of the factors mentioned you have considered when buying ready-made garments. Indicate where you learned the importance of considering these factors.

Sample:

FACTORS TO CONSIDER	DID YOU CONSIDER?		WHERE HELP WAS RECEIVED			
	Yes	No	At Home	At School	In 4-H	Other Place
a. Suitability of buttons for dress	x			x		

FACTORS TO CONSIDER	DID YOU CONSIDER?		WHERE HELP WAS RECEIVED			
	Yes	No	At Home	At School	In 4-H	Other Place
1. Suitability of color to individual.						
2. Suitability of line to individual.						
3. Suitability of design in fabric to individual.						
4. Harmonize with other clothing in wardrobe.						
5. Appropriateness for uses of garment.						
6. Amount of care garment requires.						
7. Construction of garment (durability).						
8. Price of garment.						
9. Fit of garment.						
10. Comfort of garment.						
11. Type of workmanship exemplified in garment.						
12. Fiber(s) from which garment is made.						
13. Texture of material in garment.						

8. In Column I below, check the practices you can do satisfactorily without advise or assistance from others. In Column II, check the practices which would require further help.

Col. I.	Col. II.		
____	____	1.	Choose clothes suitable for the personality.
____	____	2.	Choose clothes suitable for the individual's various activities.
____	____	3.	Choose becoming and appropriate colors.
____	____	4.	Choose becoming clothes with the best lines for the figure.
____	____	5.	Interpret intelligently information on labels.
____	____	6.	Take no more than one person's share of the family clothing budget.
____	____	7.	Select patterns suitable for the figure type.
____	____	8.	Select materials suitable for the pattern chosen.
____	____	9.	Make pattern alterations when body measurements differ from those of the pattern.
____	____	10.	Place pattern pieces correctly on material (locating grain lines).
____	____	11.	Follow directions on the guide sheet.
____	____	12.	Select appropriate method(s) of pattern marking, taking into consideration the color and type of material being used.
____	____	13.	Determine when staystitching should be used.
____	____	14.	Properly locate and make machine buttonholes.
____	____	15.	Use an acceptable method of applying a zipper to a placket.
____	____	16.	Set in a sleeve and ease in fullness.
____	____	17.	Apply various types of collars to a garment.
____	____	18.	Apply appropriate hems to various types of garments.
____	____	19.	Line a garment.
____	____	20.	Remake garments.
____	____	21.	Alter garments.
____	____	22.	Take proper care of wash clothes.

9. On the following chart check the practices you have followed in caring for clothing before you came to college and indicate how consistently you follow these practices.

Sample:

TYPE OF CARE	CONSISTENCY OF PRACTICE		
	Regularly	Occasionally	Rarely
a. Wash socks daily		x	

TYPE OF CARE	CONSISTENCY OF PRACTICE		
	Regularly	Occasionally	Rarely
1. Hang clothes up after wearing them.			
2. Brush and air clothes to be worn again.			
3. Wash underwear daily.			
4. Repair rips and frayed seams.			
5. Sew on buttons, snaps, hooks, and eyes.			
6. Launder washable dresses, blouses, and skirts.			
7. Wash sweaters when they need it.			
8. Press skirts made of wool and blends.			
9. Polish shoes made from different materials.			
10. Remove wrinkles from velveteen and corduroy.			
11. Store "out of season" clothing.			
12. Patch and reweave clothing.			
13. Determine when to use syndets or neutral soaps in laundering clothing.			
14. Bleach nylons and other synthetics.			
15. Make and use starch for some clothing.			
16. Determine when to use the dry iron and when to use the steam iron in caring for clothing.			
17. Determine which clothing should be sent to a commercial cleaner for cleaning.			
18. Send clothing to the cleaner when needed.			
19. Remove different types of spots and stains.			

APPENDIX B

SUMMARY TABLES OF RESPONSES TO QUESTIONNAIRE-CHECK LIST

TABLE XXXI

AMOUNT OF HOME SEWING EXPERIENCE OF 112 STUDENTS

Institution	Per Cent of Students and Amount of Home Sewing				Commercial Sewing Lessons such as Singer
	None	Some	Much	Total	
MSCW (26 students)	8	54	38	100	8
OSU (86 students)	13	48	39	100	13
Total Per Cent	12	49	39	100	12

TABLE XXXII

GRADES IN WHICH 112 STUDENTS ENROLLED IN CLOTHING UNITS IN JUNIOR HIGH AND SENIOR HIGH SCHOOL[a]

Institution	No Home Ec.	Per Cent Enrolled in Home Economics					
		7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
MSCW (26 students)	8	8	34	73	50	46	38
OSU (86 students)	2	37	46	64	71	40	35
Total Per Cent	4	30	44	66	66	41	36

[a]These per cents do not total 100 because there is an overlapping of enrollment in the different grades.

TABLE XXXIII

NUMBER OF YEARS 112 STUDENTS HAD 4-H CLOTHING PROJECTS

Institution	Per Cent of Students Having 4-H Projects and Number of Years					
	None	One	Two	Three	Four	Over Four
MSCW (26 students)	58	15	0	8	3	15
OSU (86 students)	52	10	6	6	7	19
Total Per Cent	54	12	4	6	6	18

TABLE XXXIV

NUMBER OF GARMENTS 112 STUDENTS MADE BEFORE ENTERING COLLEGE AND WHERE THEY WERE MADE[a]

Type of Garments	Number of Garments Made and Where They Were Made					
	Home Ec.		4-H		Home	
	MSCW	OSU	MSCW	OSU	MSCW	OSU
blouses	26	137	13	36	112	367
skirts	34	197	12	51	131	583
jumpers	3	29	2	7	8	82
jackets	5	33	0	15	16	73
dresses	31	196	12	100	185	638
suits	6	24	5	11	13	39
coats	1	4	3	3	3	16
pajamas	7	25	4	10	26	90
dusters	1	2	2	0	3	10
shorts/slacks	2	14	0	0	18	126
formals	4	3	1	1	2	6
Total	120	664	54	234	517	2030
Per Student	4.6	7.7	2.1	2.7	19.9	23.6

[a]Twenty-six students are from Mississippi State College for Women and 86 are from Oklahoma State University.

TABLE XXXV

APPROXIMATE NUMBER OF GARMENTS 112 STUDENTS PURCHASED THE YEAR BEFORE ENTERING COLLEGE AND AMOUNT OF HELP RECEIVED[a]

Type of Garments	Number of Garments Purchased And Amount of Help Received					
	Much		Some		None	
	MSCW	OSU	MSCW	OSU	MSCW	OSU
blouses	22	25	50	144	54	272
skirts	18	21	50	168	49	210
sweaters	14	22	33	128	39	196
coats	6	23	16	75	9	34
dresses	23	29	63	206	57	147
brassieres	9	10	18	48	73	362
girdles	2	3	9	29	25	77
slips	3	3	10	31	31	168
hats	13	8	20	56	22	47
socks/hose	2	43	43	147	76	289
purses	5	2	8	34	50	181
shoes	22	43	43	147	76	289
pajamas	1	3	14	25	12	75
slim jims	3	0	3	9	2	2
bathing suits	0	0	0	9	1	2
formals	1	0	1	1	1	0
Total	144	195	381	1,170	577	2,925

Grant Total: MSCW Students, 1,102; OSU Students, 4,290.
Average: MSCW Students, 42.4; OSU Students, 49.9.

[a]Twenty-six students are from Mississippi State College for Women and 86 are from Oklahoma State University.

TABLE XXXVI

FACTORS 112 STUDENTS CONSIDERED IN BUYING READY-MADE GARMENTS[a]

	Factors Considered	Per Cent Considering Factors			
		Yes		No	
		MSCW	OSU	MSCW	OSU
1.	Suitability of color to individual.	100	99	0	1
2.	Suitability of line to individual.	96	93	4	4
3.	Suitability of design in fabric.	81	88	8	5
4.	Harmonize with other colors in wardrobe.	88	75	8	8
5.	Appropriateness for uses of garment.	96	94	0	2
6.	Amount of care garment requires.	92	87	4	11
7.	Construction of garment.	88	87	12	13
8.	Price of garment.	100	95	0	2
9.	Fit of garment.	100	99	0	1
10.	Comfort of garment.	88	94	12	5
11.	Type workmanship exemplified in garment.	73	76	10	19
12.	Fiber(s) from which garment is made.	69	70	23	29
13.	Texture of material in garment.	77	75	19	22

[a]Twenty-six students were from Mississippi State College for Women and 86 students were from Oklahoma State University.

TABLE XXXVII

CLOTHING SELECTION, CONSTRUCTION, AND CARE PRACTICES 112 STUDENTS CAN PERFORM SATISFACTORILY AND THOSE THAT WOULD REQUIRE ADDITIONAL HELP[a]

Responses in Per Cent MSCW Students				Responses in Per Cent OSU Students	
Col. I[b]	Col. II[c]			Col. I[b]	Col. II[c]
85	15	1.	Choose clothes suitable for personality	80	20
88	11	2.	Choose clothes suitable for individual's various activities.	93	7
85	15	3.	Choose becoming and appropriate colors.	81	19
54	46	4.	Choose becoming clothes with best lines for figure.	49	51
69	31	5.	Interpret intelligently information on labels.	43	54
64	36	6.	Take no more than one person's share of the family clothing budget.	56	44
69	31	7.	Select pattern suitable for figure type.	51	48
54	46	8.	Select materials suitable for pattern chosen.	58	42
23	73	9.	Make pattern alterations when body measurements differ from those of the pattern.	37	61
73	27	10.	Place pattern pieces correctly on material.	69	31
81	19	11.	Follow directions on guide sheet.	64	36
64	36	12.	Select appropriate pattern markings.	50	50
50	50	13.	Determine when staystitching should be used.	53	46
34	65	14.	Properly locate and make machine buttonholes.	33	67
50	50	15.	Use acceptable method of applying zipper.	51	47
50	50	16.	Set in sleeve and ease in fullness.	55	45
34	65	17.	Apply various types of collars to garments.	42	58
42	57	18.	Apply appropriate hems to various types of garments.	36	44
23	73	19.	Line a garment.	30	70
15	85	20.	Remake garments.	42	58
27	73	21.	Alter garments.	36	64
88	11	22.	Take proper care of wash clothes.	84	16

[a] Twenty-six students were from Mississippi State College for Women and 86 students were from Oklahoma State University.

[b] Column I gives practices students said they could do without help.

[c] Column II gives practices students said they could not do without help.

TABLE XXXVIII

PRACTICES 112 STUDENTS FOLLOWED IN CARING FOR CLOTHING BEFORE ENTERING COLLEGE[a]

TYPE OF CARE	Consistency of Practice in Per Cent					
	Regularly		Occasionally		Rarely	
	MSCW	OSU	MSCW	OSU	MSCW	OSU
1. Hang clothes up after wearing them.	77	87	23	7	0	1
2. Brush and air clothes to be worn again.	23	28	50	62	27	10
3. Wash underwear daily.	38	43	42	43	12	14
4. Repair rips and frayed seams.	35	34	50	60	15	6
5. Sew on buttons, snaps, hooks, etc.	31	44	54	51	12	5
6. Launder washable dresses, blouses and skirts.	42	79	27	9	27	6
7. Wash sweaters when they need it.	69	74	15	15	12	6
8. Press skirts made of wool and blends.	58	60	31	35	8	5
9. Polish shoes made from different materials.	35	49	42	27	12	55
10. Remove wrinkles from velveteen and corduroy.	8	42	31	23	50	31
11. Store "out of season" clothes.	69	71	19	17	8	12
12. Patch and reweave clothing.	15	8	27	27	58	52
13. Determine when to use syndets or neutral soaps in laundering.	8	28	27	35	58	37
14. Bleach nylons and other synthetics.	4	6	15	23	77	64
15. Make and use starch for clothing.	15	30	42	30	42	33
16. Determine when to use dry and steam iron in caring for clothing.	46	72	35	18	12	7
17. Determine when to send clothing to commercial cleaner.	65	81	19	12	12	2
18. Send clothing to cleaner when needed.	58	88	19	8	8	0
19. Remove different spots and stains.	12	35	73	33	54	28

[a]Twenty-six students were from Mississippi State College for Women and 86 were from Oklahoma State University.

APPENDIX C

CHECK LIST OF OBJECTIVES AND TIME ALLOTMENTS

SOME OBJECTIVES FOR A CLOTHING UNIT

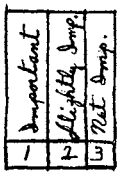
The following clothing objectives have been consolidated from the clothing units of the secondary homemaking teachers' guides of Mississippi and Oklahoma; Home Economics 101, Mississippi State College for Women; and clothing section, Home Economics 114, Oklahoma State University.

In this study an investigation is being made to see if evaluation techniques based upon common objectives, taken from the four sources mentioned above, can be satisfactorily constructed and used in different types of institutions to appraise selected clothing competencies for freshman college students.

DIRECTIONS:

Will you please give your judgment of the objectives by placing a check (x) in the appropriate column according to the directions given below.

In Column 1 check objectives you think are important.
In Column 2 check objectives you think slightly important.
In Column 3 check objectives you think are not important.



1. To acquire knowledge concerning the construction of clothing.
2. To develop some skill in the construction of clothing.
3. To develop judgment concerning good and poor workmanship in clothing construction.
4. To acquire knowledge concerning the selection of clothing and accessories for individuals.
5. To skillfully apply the principles and elements of design to clothing selection for individuals.
6. To develop the ability to use appropriate principles in wardrobe planning and clothing selection.
7. To be cognizant of the psychological, sociological and economic factors that affect clothing selection.
8. To apply some psychological, sociological, and economic principles when selecting clothing.
9. To acquire knowledge concerning the proper care of clothing.
10. To use appropriate principles in caring for clothing.
11. If there are other objectives which you consider important in your clothing units, please list these on the back of this sheet.

POSSIBLE TIME ALLOTMENT FOR CONTENT AREAS IN CLOTHING

DIRECTIONS: On the chart below, check (x) the possible time allotment you consider best.

1. If you agree with the possible time allotment given in Column 1, check at the bottom of Column 1.
2. If you agree with the possible time allotment given in Column 2, check at the bottom of Column 2.
3. If you agree with the possible time allotment given in Column 3, check at the bottom of Column 3.
4. If you agree with the possible time allotment given in Column 4, check at the bottom of Column 4.
5. If you do not agree with any of the possible time allotments given, list the allotment you would suggest for each of the content areas in the last column on the right.

OPTIONAL: If you care to indicate, in the column you have already checked (on the broken lines under each of the three content areas), the approximate per cent of time you would devote to each sub-area (these are listed as A, B, C, and D).

	PERCENTAGE OF TIME ALLOTTED THE THREE AREAS				
Columns	1	2	3	4	YOURS
I. SELECTION AND PURCHASE OF CLOTHING	60%	40%	35%	25%	
A. Recognition and application of elements and principles of design					
B. Recognition and consideration of individual's characteristics					
C. Use of principles in wardrobe planning and clothing selection including accessories					
D. Awareness of and application of psychological and socio-economic principles in clothing selection					
II. CONSTRUCTION OF CLOTHING	35%	50%	60%	70%	
A. Development of preconstruction skills, such as pattern alteration					
B. Development of construction skills					
C. Improvement of Judgment of workmanship					
III. CARE OF CLOTHING	5%	10%	5%	5%	
A. Recognition of importance of proper care of clothing					
B. Application of appropriate principles in care of clothing					
GRAND TOTAL (Check here)	100%	100%	100%	100%	100%

APPENDIX D

CLOTHING PLACEMENT TEST AND ANSWER SHEET

OKLAHOMA STATE UNIVERSITY, 1959

CLOTHING PLACEMENT TEST

Directions: This test is designed to be taken with a separate answer sheet. You are to record your answer in the spaces provided beside the questions on the answer sheet. Your administer will tell you how much time you have for the test.

Part I

Indicate multiple-choice answers by making a check mark. On matching questions, follow directions as stated in the test question.

1. When placing pattern pieces on the fabric in preparation for cutting, one should:

   a. locate and pin pattern grain line markings on straight of fabric.
   b. pin the corners of the pattern.
   c. pin along the sides of the pattern.

2. In pressing waistline darts in both bodice and skirt, one would generally press inside darts:

   a. toward the center front or center back.
   b. toward the side seams.
   c. in either direction.

3. Sue is a short girl who is considered to be slightly overweight. Select from the list below the items that Sue should choose in order to look more slender in her clothes.

   a. wide belts and sashes.
   b. large plaids and prints.
   c. greyed or more subdued colors.
   d. details that form horizontal movement in design.
   e. contrasting colors.
   f. gored or slightly flared skirts.
   g. bulky fabrics.
   h. closely fitted garments.
   i. small design motifs in fabric.

4. When measuring for pattern size, hip measurement should be taken:

   a. seven inches below the waist.
   b. twelve inches below the waistline.
   c. five inches below the waistline.

5. The yarns which are parallel to the selvage of the fabric are the:

   a. filling yarns
   b. warp yarns
   c. bias yarns

6. Select the fabrics listed below which may melt or stick to the iron if pressed at a high temperature:

   a. acetate
   b. cotton
   c. nylon
   d. rayon
   e. linen
   f. blend - 65% dacron, 35% cotton
   g. orlon
   h. acrilan
   i. wool
   j. silk

7. The part of the machine which moves the fabric along as the stiches are made is called:

   a. the presser-foot
   b. the plate
   c. the feed dog

8. To shorten a blouse pattern one inch, which method is correct?

   a. take a horizontal tuck of one inch
   b. take a vertical tuck of one inch
   c. take a horizontal tuck of one-half inch
   d. take a vertical tuck of one-half inch

9. When making a garment, the recommended procedure is to press the seams:

   a. after basting and before stitching
   b. after stitching and before crossing them with other seams
   c. after the garment is finished

10. The basic weaves are listed to the right. Select the weave that is used in making each fabric:

    a. Powder Puff Muslin
    b. Sailcloth
    c. Percale
    d. Corduroy
    e. Gabardine
    f. Denim
    g. Taffeta
    h. Cotton broadcloth
    i. Cotton satin
    j. Gingham

    (1) Plain
    (2) Twill
    (3) Satin
    (4) Pile

11. The length of a buttonhole should be the:

    a. exact length of the diameter of the button
    b. diameter of the button plus the thickness of the button
    c. diameter of the button plus one-fourth inch

12. Figure types by which patterns may be purchased are listed to the right. Select the type each girl should purchase to get the one best suited for her figure.

    a. Mary is 5'2" in height and has a small high bust, a short waist, narrow shoulders and slightly full hips.
    b. Sue is 5'6" in height and has a fully developed figure with normal shoulders, waist, and bust.
    c. Jane is 5'4" in height and has a high, fully developed bust, rounded hipline, and a small, short waist.

    (1) Teen
    (2) Junior
    (3) Misses
    (4) Half-size)

13. When cutting strips on the true bias:

    a. Fold the fabric so that lengthwise yarns of fabric run parallel with crosswise yarns
    b. Fold fabric so that the fold follows the lengthwise yarns of the material
    c. Fold fabric so that the fold follows the crosswise yarns

14. From the group of fabrics listed, select those that should have the pattern pieces placed so that all pieces will be in the same direction.

    a. Pique
    b. Corduroy
    c. Satin
    d. Velveteen
    e. Shantung
    f. Velvet
    g. Wool gabardine
    h. Suede cloth
    i. Faille
    j. Poplin

15. The number of stitches per inch on a fine, closely woven fabric when compared with the number of stitches per inch on coarser fabric should be:

    a. approximately the same
    b. more per inch
    c. less per inch

16. Select the statement which applies correctly to the principles of staystitching.

    a. stitch around all seam edges of the garment
    b. stitch only the seam edges which are cut on the straight of the fabric
    c. stitch the seam edges that are curved or on the bias

17. Four color schemes are listed below. Select the costume combination that best describes each color scheme:

a. accented neutral	(1) light blue blouse with darker blue skirt
b. analogous	(2) grey sweater and skirt with a red belt and scarf
c. complementary	(3) dark green suit, yellow green blouse, with orange bag and shoes
d. monochromatic	(4) yellow dress with purple cummerbund
	(5) black dress with grey collar and cuffs

18. Mary plans to buy material for a fall school dress which will need to be durable, and although laundered frequently, will retain its original freshness. Which fabric would be best for Mary to select?

a. butcher rayon
b. cotton gingham
c. cotton jersey
d. cotton sateen

19. A correct sewing machine stitch will have:

a. loops from the top thread showing on the wrong side of fabric
b. stitches which look the same on both sides of fabric
c. loops from the bobbin thread showing on the right side of fabric

20. Jane is making a white organdy dress. Which one of the marking devices listed would be best for her to use?

a. tailor's tacks
b. tailor's chalk
c. tracing wheel and tracing paper

21. Pins holding a seam for hand basting should be placed:

a. parallel to the seam edge
b. at right angles to the seam edge
c. at a slanting angle

22. In turning a corner which machine stitching, one should:

a. stitch around the corner without stopping
b. stop, raise presser foot and turn fabric with needle remaining in the fabric
c. stop, turn corner with needle raised out of fabric

23. Ann is making a cotton broadcloth blouse with a scoop neckline. Select the method that should be used to treat the neckline seam before the facing is turned to the wrong side.

    a. trim seam and clip at intervals
    b. trim seam and turn and press smooth
    c. trim seam and cut out wedges

24. In attaching straight seam tape to the top of a hem in a rayon skirt which is slightly flared, one should:

    a. ease the tape and hold the top of the hem taut
    b. hold the tape taut and ease in fullness at top of hem
    c. hold the tape and top of the hem with equal tension

25. When stitching side seams of a garment, the bulk of the fabric should be:

    a. to the left side of the presser-foot
    b. to the right side of the presser-foot
    c. to either side depending upon kind of fabric being sewn

26. Mary is making a taffeta dress by a pattern which has a high round neckline. She has decided to change the pattern and make a scoop neckline. Which of the methods listed would be best for Mary to select for facing the neckline?

    a. finish the neckline with a one-inch bias strip
    b. cut a fitted facing pattern for back and front neckline of blouse and cut facings on the same grain of fabric that blouse is cut.
    c. cut a fitted facing pattern for back and front neckline of blouse and cut facings with center front and center back placed on the bias of the fabric

27. When pinning or basting the shoulder seam of a cotton dress without a back shoulder dart, one should:

    a. ease the front shoulder seam of the dress and hold the back taut
    b. ease the back shoulder seam of the dress onto the front
    c. hold the back and front shoulder seams with equal tension

28. Which of the seam finishes listed to the right would you select to finish the seams of the following garments?

    a. the side seams of a nylon sheer blouse
    b. the seams of a tailored shirt
    c. the seams of a cotton sailcloth skirt
    d. the seams of an unlined linen jacket
    e. the seam of a pointed yoke in the front of a blouse

    (1) flat felled seam
    (2) french seam
    (3) lapped seam
    (4) plain seam, bound
    (5) plain seam, pinked
    (6) piped seam

29. When basting or pinning a sleeve into the armhole for the first fitting, one should:

    a. distribute the same amount of fullness throughout the armhole seam
    b. ease more fullness toward the back after notches have been matched
    c. match notches and top of sleeve cap with shoulder seam, then distribute fullness evenly

30. Select the statement which applies correctly to selecting materials for interfacing a garment.

    a. the interfacing should generally be heavier than fabric being interfaced
    b. the interfacing should be the same weight as fabric being interfaced
    c. the interfacing should generally be lighter in weight than fabric being interfaced

31. Mary plans to make a four-gore fitted skirt. Her waist measurement is 26 inches and her hip measurement is two inches larger than hip measurement indicated for a 26-inch waist skirt pattern. Should she:

    a. buy a size 26 inch skirt pattern and alter to fit hips?
    b. buy a 26 inch waist size and add an extra gore to take care of fullness needed?
    c. buy a 26 inch waist size and take smaller seams through the hips to take care of fullness needed?

32. Mary is making a fitted wool flannel skirt which will have a two and one-half inch hem. From the methods listed below, select the <u>two</u> that would be best for finishing the hem:

    a. turn the edge under one-half inch and stitch hem in by hand
    b. pink hem edge, machine stitch along edge and catch stitch hem in place
    c. stitch hemming tape along edge, and stitch hem in by hand
    d. bind hem edge with bias tape and tack at intervals

33. Mary is making a cotton shirtwaist dress with a fly-front closing. She decided to eliminate the fly and use horizontal buttonholes. How should she locate the buttonholes in relation to the center front?

    a. locate the buttonholes to the right of the center front
    b. locate the buttonholes to extend one-eighth inch beyond the center front line toward the folded edge
    c. locate the buttonhole with its center exactly on the center front line

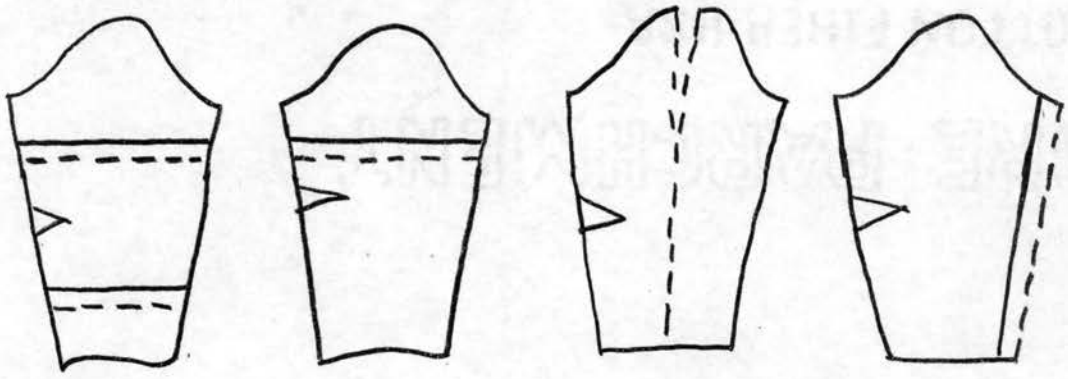
34. In setting a sleeve into the armhole:

a. have the sleeve turned right side out, the waist wrong side out
b. have the sleeve turned wrong side out, the waist wrong side out
c. have the sleeve turned wrong side out, the waist right side out

35. Art principles are listed on the left and explanations of the principles are listed on the right. Match each art principle with its correct explanation.

a. balance	(1) gives an impression of unity among elements
b. harmony	(2) gives movement to the design
c. proportion	(3) concerns the relation of one part of an object to another part
d. emphasis or dominance	(4) centers attention around one element or feature of a design
e. rhythm	(5) maintains an equilibrium and stability in design
	(6) gives an impression of naturalism in designs

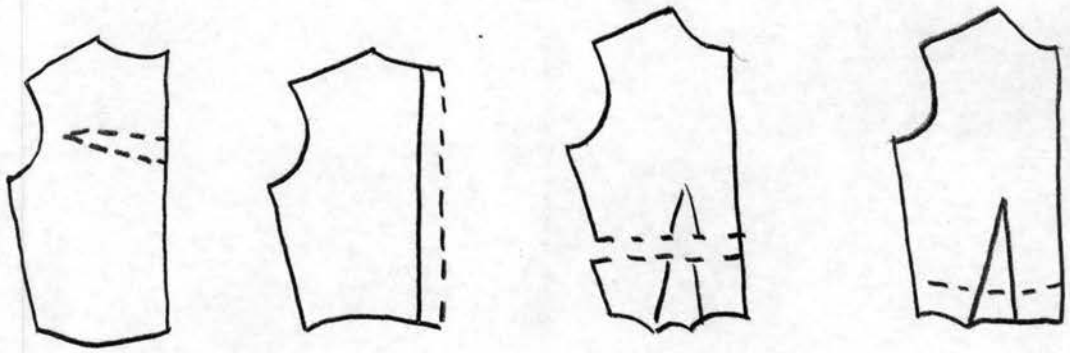
36. From the alternatives given below, select the best method for the pattern alteration problems listed.



1 2 3 4

a. Sleeves too long

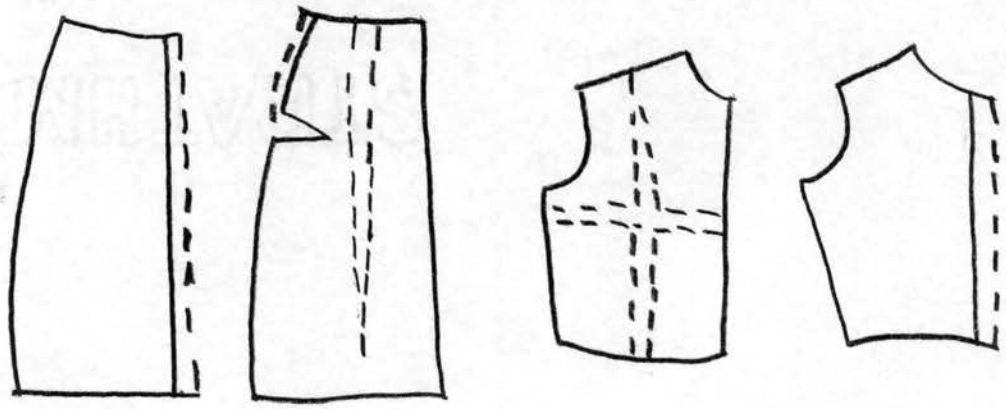
b. Large upper arms



5 6 7 8

c. Round shoulders

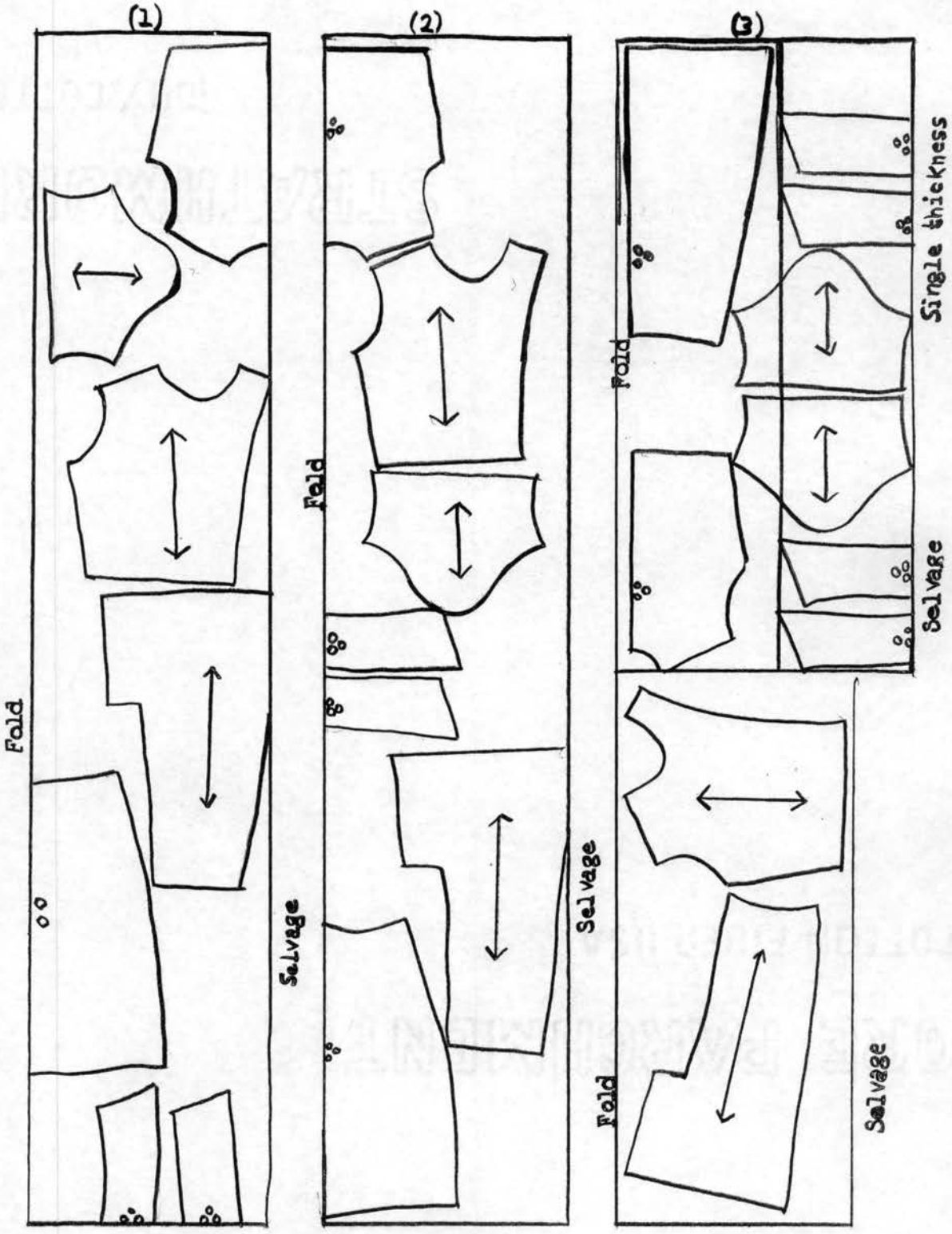
d. Waist too short



9 10 11 12

e. Large hips

f. Full bust


(1)
Fold
Selvage
(2)
Fold
Selvage
(3)
Fold
Selvage
Single thickness
Fold
Selvage

37. When making a garment which has a plaid design, one should:

    a. cut out the garment and try to match the plaids as seams are pinned and stitched
    b. place pattern pieces on the material, so that the plaid design will match as the seams are pinned and stitched
    c. match the plaid design by pinning the seams with the garment on someone

Part II

The drawings on the opposite page show three different layouts for placing a pattern on dress material. The dress illustrated has a seam in the back of the skirt but no seam in the front. There are two parts to this problem.

Part A - Indicate on the answer sheet the number of the pattern layout which is correct.

Part B - The statements below concern the pattern layouts shown on the following page. If the statement is true, write the word "yes" in the blank numbered to match, the statement; if the statement is false, write the word "no".

1. In layout (1) the skirt patterns are placed correctly.
2. In layout (1) the blouse back is placed correctly.
3. In layout (1) the blouse front is placed correctly.
4. In layout (1) the sleeve is placed correctly.
5. In layout (1) the collar is placed correctly.

6. In layout (2) the skirt patterns are placed correctly.
7. In layout (2) the blouse back is placed correctly.
8. In layout (2) the blouse front is placed correctly.
9. In layout (2) the sleeve is placed correctly.
10. In layout (2) the collar is placed correctly.

11. In layout (3) the skirt patterns are placed correctly.
12. In layout (3) the blouse back is placed correctly.
13. In layout (3) the blouse front is placed correctly.
14. In layout (3) the sleeve is placed correctly.
15. In layout (3) the collar is placed correctly.

CLOTHING PLACEMENT TEST
ANSWER SHEET

Name _____

Part I

1. a_____
   b_____
   c_____

2. a_____
   b_____
   c_____

3. a_____
   b_____
   c_____
   d_____
   e_____
   f_____
   g_____
   h_____
   i_____

4. a_____
   b_____
   c_____

5. a_____
   b_____
   c_____

6. a_____
   b_____
   c_____
   d_____
   e_____
   f_____
   g_____
   h_____
   i_____
   j_____

7. a_____
   b_____
   c_____

8. a_____
   b_____
   c_____
   d_____

9. a_____
   b_____
   c_____

10. a_____
    b_____
    c_____
    d_____
    e_____
    f_____
    g_____
    h_____
    i_____
    j_____

11. a_____
    b_____
    c_____

12. a_____
    b_____
    c_____

13. a_____
    b_____
    c_____

14. a_____
    b_____
    c_____
    d_____
    e_____
    f_____
    g_____
    h_____
    i_____
    j_____

15. a_____
    b_____
    c_____

16. a_____
    b_____
    c_____

17. a_____
    b_____
    c_____
    d_____

18. a_____
    b_____
    c_____
    d_____

19. a_____
    b_____
    c_____

20. a_____
    b_____
    c_____

21. a_____
b_____
c_____

22. a_____
b_____
c_____

23. a_____
b_____
c_____

24. a_____
b_____
c_____

25. a_____
b_____
c_____

26. a_____
b_____
c_____

27. a_____
b_____
c_____

28. a_____
b_____
c_____
d_____
e_____

29. a_____
b_____
c_____

30. a_____
b_____
c_____

31. a_____
b_____
c_____

32. a_____
b_____
c_____
d_____

33. a_____
b_____
c_____

34. a_____
b_____
c_____

35. a_____
b_____
c_____
d_____
e_____

36. a_____
b_____
c_____
d_____
e_____
f_____

37. a_____
b_____
c_____

Part II

A. 1_____
2_____
3_____

B. 1_____
2_____
3_____
4_____
5_____
6_____
7_____
8_____
9_____
10_____
11_____
12_____
13_____
14_____
15_____

APPENDIX E

BATTERY OF CLOTHING PLACEMENT DEVICES

CLOTHING PLACEMENT TEST

General Instructions for Written Placement Test: The answers for the written part of this Clothing Placement Test are to be recorded on an answer sheet given to you. Do not place your answers on the test. If you want to change an answer, be sure to completely erase the first answer.

There are four parts to this test. You will find specific directions preceding each part. Be sure to read each set of directions carefully before you begin to answer the questions in each part.

Part I. Matching

Directions: Each of the six problems below are made up of two columns which are appropriately labeled. From Column II choose one word which you think matches each word or phrase in Column I. Place your answer in the proper space following the number which corresponds to the number in Column I. Give your choice by blackening in

answer space 1 if you think that this word from Column II is the correct answer.

answer space 2 if you think that this word from Column II is the correct answer.

answer space 3 if you think that this word from Column II is the correct answer.

answer space 4 if you think that this word from Column II is the correct answer.

answer space 5 if you think that this word from Column II is the correct answer.

Problem I.

Some of the weaves are given in Column I below. Column II contains a list of fabrics which are examples of various weaves. Choose one fabric which is made from each of the weaves and record your answers on the answer sheet.

I. Weaves	II. Fabrics
1. Plain	1. Corduroy
2. Pile	2. Gabardine
3. Basket	3. Monk's cloth
4. Twill	4. Percale
	5. Sateen

Problem II.

Choose the color scheme which best exemplifies the costume description given below and record your answers on the answer sheet.

I. Costume Descriptions	II. Color Schemes
5. Light blue blouse, darker blue skirt with navy shoes and handbag.	1. Accented neutral
6. Gray sweater and skirt with red belt and scarf.	2. Analogous
7. Dark green suit, yellow green blouse with orange handbag and shoes.	3. Complementary
8. Yellow dress with purple cummerbund.	4. Double complementary
	5. Monochromatic

Problem III.

Different types of garments and various seams and seam finishes are listed below. Match the seams you would use on the various types of garments and record your answers on the answer sheet.

I. Types of Garments	II. Seams and Seam Finishes
9. Cotton sail-cloth skirt	1. French seam
10. Unlined linen jacket	2. Lapped seam
11. Pointed yoke in front of a blouse	3. Piped seam
	4. Plain seam, bound
	5. Plain seam, pinked

Problem IV.

Match the art principles given below with the phrase which best describes each principle. Record your answers on the answer sheet.

I. Description of Art Principles	II. Art Principles
12. Gives an impression of unity among elements.	1. Emphasis
	2. Harmony
13. Concerns the relation of one size or space of an object to another.	3. Proportion
14. Centers attention around one element or feature of a design.	4. Rhythm
	5. Unity

Problem V.

Patterns may be purchased which are proportioned for various figure types. Match the pattern types with the descriptions in the space provided on the answer sheet.

I. Description of Figure Types	II. Types of Patterns
15. Designed for the rather short youthful figure which is fully developed.	1. Half-size
16. Designed and shaped to fit the partially developed, growing figure which is short-waisted and narrow in the shoulders.	2. Junior Miss
17. Designed for the youthful and fully developed, rather tall figure.	3. Misses
	4. Teen

Problem VI.

Hand sewing plays an important role in the construction of a garment. Match the hand stitches given below with their descriptions. Record your answers on the answer sheet.

I. Description of Stitches	II. Stitches
18. A stitch usually used on facings and hems when there is a raw edge that has been pinked.	1. Basting
19. Temporary stitch used to hold two or more thicknesses of fabric together.	2. Catch stitch
20. A stitch frequently used for invisible sewing on hems and facings.	3. Overcasting
	4. Overhanding
	5. Slip stitching

Part II. Multiple Choice

Directions: Read each of the following statements and questions carefully. Select one answer which you think best completes each statement or answers each question. Place your answer in the proper space following the number which corresponds to the number placed in front of the statement or question. Give your choice by blackening in

answer space 1 if you consider this the best answer.

answer space 2 if you consider this the best answer.

answer space 3 if you consider this the best answer.

answer space 4 if you consider this the best answer.

21. A tall, thin girl should choose a fabric for a dress whose texture is

    1. very bulky.
    2. medium weight.
    3. thin and flimsy.
    4. soft and clinging.

22. More fabric may be needed than is called for on a pattern layout when one uses fabric with

    1. small design having no up-and-down design.
    2. no design.
    3. an uneven plaid.
    4. an even plaid.

23. To shorten a blouse pattern one inch, one would

    1. take a one-inch horizontal tuck in the pattern.
    2. take a one-inch vertical tuck in the pattern.
    3. take a one-half inch horizontal tuck in the pattern.
    4. take a one-half inch vertical tuck in the pattern.

24. The length of a buttonhole should be the

    1. length of the diameter of the button.

    2. length of the diameter of the button plus one-fourth inch.

    3. diameter of the button plus the button's thickness.

    4. none of these lengths.

25. One of the best methods for finishing a two and one-half-inch hem in a straight wool flannel skirt would be to

    1. turn edge under one-half inch and stitch hem in by hand.

    2. bind hem edge with bias tape and tack at intervals.

    3. stitch hemming tape along edge and stitch hem in by hand.

    4. stitch the raw edge and then roll the hem.

26. A suitable facing for finishing a scooped neckline would be a

    1. fitted facing which has the same grainline as the neckline.

    2. bias strip one and one-half inches wide.

    3. fitted facing which was cut on the bias of the fabric.

    4. any of these.

27. To set a sleeve into an armscye, have

    1. waist turned wrong side out and the sleeve right side out.

    2. both sleeve and waist turned wrong side out.

    3. sleeve turned wrong side out, waist right side out.

    4. both sleeve and waist turned right side out.

28. In cutting strips of material on the "true bias" fold the fabric so that the

    1. lengthwise yarns of the fabric run parallel with crosswise yarns.

    2. fold in the fabric follows the lengthwise yarns of the fabric.

    3. fold in the fabric follows the crosswise yarns.

    4. none of the methods mentioned above are correct.

29. Which of the following fabrics would you expect to melt or stick to the iron if pressed at a high temperature?

    1. cotton.

    2. dacron.

    3. linen.

    4. rayon.

30. Pins holding a seam for hand basting should be placed

    1. at a diagonal angle.

    2. at right angles to the seam edge.

    3. parallel to the seam edge.

    4. at none of these positions.

31. Staylines, used to keep grain lines true, are applied to

    1. all seam edges of the garment.

    2. all seam edges cut on the straight of the fabric.

    3. all seam edges that are curved.

    4. none of the seam edges mentioned above.

32. A finish applied to a fabric which will change the surface appearance is

    1. crease-resistent.

    2. mildew-resistant.

    3. moth repellent.

    4. napping.

33. Which of the following fabrics will more likely show lines after changing the hemline?

    1. cotton tweed.

    2. cotton voile.

    3. rayon jersey.

    4. velveteen.

34. The skipping of stitches in machine sewing may be caused by

    1. bent needle.

    2. incorrectly threaded machine.

    3. needle too small for thread.

    4. all of the practices mentioned above.

35. Which of the following fabrics has a grainline so set that it cannot be changed?

    1. printed linen.

    2. rayon-acetate herringbone.

    3. resin-treated cotton print.

    4. wool flannel.

36. When a pocket is sewed on the bodice of a dress and a second pocket, which is larger, is sewed on the opposite side of the skirt, balance is obtained by placing

    1. both pockets the same distance from the center front of the garment.

    2. the large pocket farther away from the center front than the smaller pocket.

    3. the large pocket closer to the center front than the small pocket.

    4. the small pocket farther away from the center front than the large pocket.

37. Which of the following costumes will produce the most pleasing silhouette for a short, stocky girl?

    1. dress with dolman sleeves, very full skirt, and a shawl neckline.

    2. dress with slightly flared skirt, conventional set-in sleeves, and a collarless V-neckline.

    3. dress with very flared skirt, sloping shoulder line, and kimona sleeves.

    4. dress with tubular skirt, long, tight fitted sleeves and a round, high neckline.

38. The most satisfactory method for transferring pattern marks to a sleazy fabric would be

    1. tailor's chalk.

    2. tailor's tacks.

    3. tracing paper and tracing wheel.

    4. pins.

39. Before the garment is tried on for fit the first time, be sure that

    1. darts and tucks are stitched.

    2. seams are stitched.

    3. sleeves are basted to the blouse.

    4. none of these processes may be completed.

40. To reduce the tendency toward drawn and rippled seams in nylon

    1. Use nylon thread.

    2. shorten the machine stitch.

    3. use the finest machine needle available.

    4. use all of the practices mentioned above.

41. Why do individuals wear some of their clothes almost constantly and allow other clothes to hang in the closet unworn?

    1. because the individual likes the color of the clothes.

    2. because the individual likes the "lines" of the clothes.

    3. because the garment fits the individual.

    4. because of all the factors mentioned above.

42. Consumers may expect to pay more for clothes purchased in a speciality shop because of the cost involved in

    1. handling of more "exclusive" clothing.

    2. taking care of charge accounts.

    3. providing for the delivery and return of clothing.

    4. all of the services mentioned above.

43. Which of the following combinations would best exemplify emphasis?

    1. a blue-green silk print princess dress with self-covered buttons.

    2. a royal blue faille dress with a light blue crepe collar.

    3. a black crepe dress with a white satin collar.

    4. a black-and-white shepherd's checked suit with a ruby-and gold lapel pin.

44. The most suitable seam to use on a tailored shirt would be

    1. flat felled.

    2. French.

    3. lapped.

    4. piped.

45. Which of the following materials is most unsuitable for making a pleated skirt?

    1. acetate and cotton pongee print.

    2. crease-resistant cotton print.

    3. dacron sheer print.

    4. Dan River combed cotton.

Part III. True-False

Directions: Read each statement or practice carefully. On the answer sheet place your answer in the proper space following the number which corresponds to the number placed in front of the statement. Give your choice by blackening in

answer space 1 if you think that the practice or statement is usually true.

answer space 2 if you are uncertain about the practice or statement.

answer space 3 if you think that the practice or statement is usually false.

46. If a woman buys a dress at "a bargain" but it is not in fashion, she has made a poor buy.

47. In buying a ready-made dress, if one must choose between a garment that needs altering in the shoulders and another one that needs altering in the hips, one would do well to choose the former.

48. The consumer may decide that parts of a garment are cut "off-grain" if one sleeve sets well in the garment but the other one does not.

49. A dressmaker-type garment is usually chosen for wearing to ball games and other sport events.

50. The tall, slender person can wear full-belted coats better than the short, plump one.

51. Persons with short necks can wear collars that are high and turn up in the back.

52. Before attempting to correct the tension on the sewing machine, one should check the threading of the machine.

53. The best way to get a good fit in a sweater is to try it on.

54. When buying needles for general sewing, one usually chooses "sharps."

55. As a rule, a coat made from a low-grade virgin wool would be a better buy than one made from a high quality of reprocessed wool.

56. When buying stockings, choose those with a high denier and gauge if you want strong, thick ones.

57. For best results in laundering, do not press acetates until they are thoroughly dry.

58. Wooden beads would make a satisfactory accessory for a heavy wool tweed dress.

59. Gathers across the cap of a sleeve, intended to be a plain, smooth-fitting one, may be caused by having a sleeve cap too wide for the arm.

60. Heavy-set girls may wear all shades of red to decrease their apparent size.

61. The wearing of subdued blues and greens tend to emphasize one's apparent size.

62. Cotton garments that are to be stored for a season should be washed to remove the soil and starch.

63. When matching even plaids in a garment, all pattern pieces must be placed going in the same direction if the fabric has a right and a wrong side.

64. Cowl necklines will help conceal long, thin necks.

65. Wearing a straight-brimmed sailor hat would aid in camouflaging a round face.

66. An individual's ankles may appear thinner if shoes with straps across or around the ankles are worn.

67. Cutting small wedges partially through the seam allowance before turning round collars will help remove bulkiness and help the collar lie flat.

68. Where there is little strain in fastening two pieces of a garment together, hooks and eyes are used instead of snaps.

69. When cutting a dress, it may facilitate transferring pattern markings if the material is folded wrong side out before the pattern is placed on the material.

70. A zipper will fit more smoothly in a side placket of a dress if the bodice and skirt seams are completely finished before the zipper is sewn into the garment.

71. Usually the double layers of material in a pocket facing will lie down better if they are understitched.

72. Grease stains can be removed from a garment by sponging the spot with cold water and a liquid soap.

73. Tiered skirts are one example of rhythm.

74. When taking body measurements to determine what size pattern to buy, the hip measurement is taken approximately ten inches below the waist line.

75. White garments being stored may be wrapped in colored tissue paper because white tissue may cause the formation of yellow spots on the garments.

Part IV. Application of Principles

Directions: Read each of the following problems carefully. Assume that the underscored statement at the end of each problem is the correct conclusion. Following each problem there are ten statements. Read each statement carefully. Then decide whether the statement supports the underscored conclusion or does not support the conclusion. Place each answer in the proper space on the answer sheet corresponding to the number placed in front of the statement. Give your choice by blackening in

answer space 1 if you would use the statement to support the underscored conclusion.

answer space 2 if you would not use the statement to support the underscored conclusion.

Problem I.

Susie, a high school senior, is short, has a full bust and a thick waist. She is making a new spring dress. When she tried it on for the second fitting, the sleeves seemed to drop off the shoulders. She wants her garment to fit properly. How can she alter the dress to make it fit better? Susie decided to rip the shoulder seams halfway, add a dart in the front, and let the back seam extend into the armhole.

Statements:

76. Susie could have prevented this dress alteration if she had bought her pattern in the correct size.

77. Some people say that it is better to trim off the shoulder seams when the sleeves drop off the shoulders.

78. The use of darts is one means of making an alteration when sleeves seem to drop off the shoulders.

79. In correcting this fitting problem, care must be taken to see that the blouse is smooth across the chest and that the shoulder line is straight across the shoulder.

80. If Susie had realized that the sleeves would drop off the shoulders, she could have made the pattern alteration before the garment was cut.

81. Often garments do not fit well because they are not cut "on-grain."

82. Wrinkles across the chest and across the shoulder back are usually due to the shoulders not sloping as much as the pattern.

83. In the book, The Clothes You Buy and Make, the author shows that using darts is one way of alleviating the problem of sleeves that extend too long over the shoulder.

84. In altering a pattern piece, it is better to slash and spread the piece rather than adding to the outer edge of the pattern.

85. Frequently fitting problems may be solved by changing or adding darts or tucks.

Problem II.

Mrs. Brown is making her daughter a white organdy party dress. She took every precaution to cut each piece of the garment "on-grain." Now she is ready to transfer the construction details to the garment pieces. This lady has had experience in using wax chalk, colored pencils, colored chalk, tailors' tacks and dressmaker's carbon and tracing wheels for transferring pattern markings. Since she has the equipment and "know how" for all these methods, which should she use for this organdy dress? She decided the tailors' tacks would be the best method for transferring the pattern markings.

Statements:

86. Just as ancient builders used a plumb line to guide in their building and keeping their lines straight, the dressmaker can use tailors' tacks to keep construction details straight on the garment.

87. Some of the pattern markings that need to be transferred to the material are: location of center front and center back at the neckline and waistline, and location of buttons and buttonholes.

88. The color of fabric and type of fabric used help determine the most satisfactory method to use in transferring the pattern markings to the fabrics.

89. Tailors' tacks are often used for transferring construction markings to transparent, white, and light-colored materials.

90. Tailors' tacks are suitable for transferring pattern markings to white organdy.

91. Darning cotton is often used for making tailors' tacks because it clings in place better than mercerized thread.

92. Wax chalk is suitable for transferring pattern markings to white rayon crepe.

93. To make a tailor's tack, put a small knot in the end of the double thread.

94. Lewis and the other authors of Clothing Construction and Wardrobe Planning give a detailed description on how to make tailors' tacks.

95. Lead pencils are very appropriate for transferring pattern marks to facings and other conspicuous spots.

Problem III.

Mary is making her first blouse. She has chosen a piece of blue floral dacron shantung which seems to stretch rather easily. Her [illegible] teacher has helped her in carefully placing the grainline of the pattern on the grainline of the fabric and in cutting the garment pieces accurately. What is the next step Mary needs to follow to retain the original shape of each garment piece? She needs to staystitch those edges of the garment which are likely to stretch.

Statements:

96. Just as a stay is useful in holding a gathered skirt in place at the waistline, staystitching is useful in holding a curved or bias edge in place.

97. Staystitching helps preserve the lines and grain of the fabric and prevents stretching.

98. Everyone should know that curved edges of a garment should be staystitched.

99. Staystitching is done with a lengthened machine stitch in a contrasting color of thread.

100. Careful placement of the grainline of the pattern on the grainline of the fabric helps retain the original shape of each garment piece.

101. One of Mary's classmates has suggested that she staystitch every edge of the garment.

102. Staystitching should proceed from the wide to the narrow part of the garment piece.

103. The Iowa Manual, Unit Method of Construction of Clothing, recommends staystitching to prevent stretching of individual pattern pieces.

104. To help retain the shape of each pattern piece, one usually carefully cuts from the narrow to the wide area of each pattern piece.

105. Just as basting serves as a temporary stitch for holding two or more pieces of material together, staystitching serves as a temporary stitch to prevent stretching of pattern pieces.

Problem IV.

Sally, a sixteen-year old, olive brunette, had a difficult time choosing between two ensembles this spring. One included a warm beige wool suit, a brown straw hat, and bone-colored leather shoes and handbag. The other included a lavender wool suit, a powder blue straw hat, and black patent shoes and handbag. Considering Sally's coloring, which ensemble would be more suitable? She chose the warm beige suit, the brown hat, and the bone-colored shoes and handbag.

Statements:

106. Just as care is given in choosing suitable color schemes for rooms with certain exposures, so should care be given to choosing suitable color schemes for individuals with certain coloring.

107. As a rule, warm colors are becoming to brunettes with warm skin tones.

108. Cool colors which have been neutralized and have a slight warm feeling may be worn by the olive brunette too.

109. When an individual is not sure whether certain colors look well on her, she may either try on clothes in these colors or hold swatches of fabric near her face to determine their effects.

110. As a rule, most blondes wear cool colors well.

111. Ryan and Phillips in their book, Clothes for You, recommend that olive brunettes wear warm colors either deep and rich or grayed.

112. Some of the current magazines carried articles saying that a person with Sally's coloring should wear the beige outfit.

113. It really does not matter what colors one combines in an ensemble so long as the wearer likes the combination.

114. Warm beiges and browns are very becoming colors for olive brunettes.

115. Sun tanned individuals may emphasize their coloring by wearing cool pastels.

Problem V.

You have just finished a unit on consumer problems in your homemaking class. To help evaluate the effectiveness of the unit, your teacher has asked you to examine two sweaters and decide which would be the better buy. Since both are so much alike in feel and appearance, you turn to the labels on each to discover the discriminating characteristics. The labels give this information:

Label #1	Label #2
This garment is a WINNER for spring	Pill-resistant 100% virgin orlon
Made from matchless material	Charcoal gray
Guaranteed by Good Housekeeping	Size 38
Courture black	Wash-and-wear
$9.09	$6.47
J. T. Brown Manufacturer (well-known company; you have worn products made by them before)	T. C. Green (an unknown manufacturer to you)

After carefully examining the labels and pondering the information given, which sweater do you think would be the better buy? You decide to choose the sweater with the second label.

Statements:

116. A salesperson in a store would recommend the sweater made by a well-known manufacturer.

117. The higher the price paid for a product the better the quality.

118. Just as the name "Bach," attached to a musical composition, brings high quality to music, so the name of a well-known clothing manufacturer brings the highest quality to clothing products.

119. Oerke's book, Dress, indicates that good labeling gives informative statements about materials and garments.

120. It is a fallacy to believe that by buying the same brand of an article each time you get a garment, you will be assured of identical quality.

121. Mail-order houses have adopted an informative labeling program.

122. One should expect to pay more for an informative label because of the expense involved in testing the garment to get this information.

123. More factual information is given on the second label than on the first one.

124. The wise consumer must learn to judge when information on a label is really helpful and when it just appeals to the emotions.

125. Just as consumers expect canned food to have informative labels, they expect ready-to-wear garments to have informative labels too.

KEY FOR WRITTEN TEST

Matching Items

1. -- 4	6. -- 1	11. -- 2	16. -- 4
2. -- 1	7. -- 2	12. -- 2	17. -- 3
3. -- 3	8. -- 3	13. -- 3	18. -- 2
4. -- 2	9. -- 5	14. -- 1	19. -- 1
5. -- 5	10. -- 4	15. -- 2	20. -- 5

Multiple-Choice Items

21. -- 2	26. -- 1	31. -- 3	36. -- 4	41. -- 4
22. -- 3	27. -- 1	32. -- 4	37. -- 2	42. -- 4
23. -- 3	28. -- 1	33. -- 4	38. -- 1	43. -- 3
24. -- 3	29. -- 2	34. -- 4	39. -- 4	44. -- 1
25. -- 3	30. -- 2	35. -- 3	40. -- 4	45. -- 2

True-False Items

46. -- 1	56. -- 1	66. -- 3
47. -- 3	57. -- 3	67. -- 1
48. -- 1	58. -- 1	68. -- 3
49. -- 3	59. -- 1	69. -- 1
50. -- 1	60. -- 3	70. -- 1
51. -- 3	61. -- 3	71. -- 1
52. -- 3	62. -- 1	72. -- 3
53. -- 1	63. -- 3	73. -- 1
54. -- 1	64. -- 3	74. -- 3
55. -- 3	65. -- 3	75. -- 3

APPLICATION OF PRINCIPLES

76. -- 2	86. -- 1	96. -- 1	106. -- 1	116. -- 2
77. -- 2	87. -- 1	97. -- 1	107. -- 1	117. -- 2
78. -- 2	88. -- 1	98. -- 2	108. -- 2	118. -- 2
79. -- 1	89. -- 1	99. -- 2	109. -- 1	119. -- 1
80. -- 1	90. -- 2	100. -- 2	110. -- 2	120. -- 1
81. -- 2	91. -- 1	101. -- 2	111. -- 1	121. -- 2
82. -- 2	92. -- 2	102. -- 1	112. -- 2	122. -- 2
83. -- 1	93. -- 2	103. -- 1	113. -- 2	123. -- 2
84. -- 2	94. -- 1	104. -- 2	114. -- 2	124. -- 1
85. -- 1	95. -- 2	105. -- 2	115. -- 2	125. -- 1

Types of Answers		Total Items
Right generalizations	85, 97, 107, 124, 88	5
Wrong generalizations	84, 95, 115, 122	4
True analogy	86, 96, 106, 125	4
False analogy	105, 118	2
Acceptable authority	83, 94, 103, 11, 119	5
Unacceptable authority	77, 101, 112, 116	4
True, relevant	79, 89, 102, 120	4
True, irrelevant	81, 87, 100, 108, 110, 121	6
False, irrelevant	82, 92, 104	3
Acceptable practice	80, 91, 109	3
Unacceptable practice	93, 99	2
Popular misconception	76, 113, 117	3
Ridicule	98	1
Assumed conclusion	78, 90, 114, 123	4

DIRECTIONS FOR STATION-TO-STATION TEST

No talking please, unless you need to consult the instructor concerning the problem.

Name_____ Date_____ Section _____

There are seven stations set up in this room. During the hour you are to move to each station and answer the questions or solve the problem given to you. You will get a copy of the instructions at each station. Supplies for performing or solving each problem are available at the station.

At three of the stations you will be required to perform some manipulative and judgmental skills to solve the problem.

At the other four stations you are to use your judgment in solving the particular problem.

There should never be more than two persons at any station at one time.

Do your work as quickly and quietly as possible. If you do not understand any instructions, either raise your hand, or go to the instructor when she is not busy helping someone else.

Be sure to put your name on each problem that you solve; put it into your manila envelope and hand it to the instructor or leave it on the table by the door.

Time you completed the test _____.

PLACEMENT AND WIDTH FOR BUTTONHOLES

PROBLEM:

Mary is ready to make the buttonholes for her new blouse. She has decided that it needs three buttonholes, and she plans to work them by hand. Will you help with the placement and width for each buttonhole?

You will need some pins, a button, and a sample of material located here on the table.

Indicate where you would locate each buttonhole.

Use two pins to make the width you would make each buttonhole.

Be sure to write your name on the slip of paper and attach it with a pin to your strip of fabric.

Place finished sample in your manila folder and hand it in at the end of the hour.

Materials needed:

Folded strip of material with neckline curved and center front marked
Buttons
Ruler, tape measure, and/or gauge
Pins
Slips of paper for name tags

PATTERN ALTERATION

PROBLEM:

When Mary checked her new slim jims, blouse, skirt pattern, she discovered that it was 1-1/2 inches too short for her. Please take one of the pattern pieces here, use any equipment you need from the table, and alter the pattern piece for Mary.

Be sure to pin your name to the altered pattern piece.

Fold the completed pattern piece and place it in the manila folder. Hand it in at the end of the hour.

Materials needed:

Pattern for each student
Tissue paper for extension
Ruler, tape measure, and/or gauge
Pins
Scissors or shears
Slips of paper for name tags

CUTTING AND JOINING BIAS STRIPS

PROBLEM:

Bias is very versatile. It may serve as binding, facings, banding, piping, cording, or tubing for decorative purposes or to finish raw edges. Suppose that you need a bias strip for a facing to finish an armscye in a blouse.

Take a square of material on this table and cut and join with machine stitching a bias strip 12 inches long and 1-1/2 inches wide.

Be sure to take a slip of paper from this table and write your name on it and attach it with a pin to your completed bias strip.

Place your finished sample in your manila folder and hand it in at the end of the hour.

Put any material you have left back into your manila folder too.

Materials needed:

Six-inch squares of striped fabric
Scissors or shears
Pins
Tape measure, ruler, or gauge
Sewing machine threaded, scrap to test stitching
Iron and board nearby machine
Needles and thread available
Slips of paper for name tags

SUITABLE HEMS OR EDGE FINISHES

PROBLEM:

Hems are the most widely used edge finishes for garments. They need to be flat, true in line, and even in width. Many factors need to be considered when selecting and making a suitable hem or edge finish for a garment.

On this table you will find examples of five different types of garments. Two different hem finishes or edges are given for each example. Please examine each carefully and check (x) which of the finishes you think is better. Then indicate your reasons for making your choice.

Hem No. 1 - Housecoat. (fabric: rose and white cotton floral design)

_____ A. (One-inch hem with rayon tape; facing turned back before hem.)

__x__ B. (Three-inch hem, even in width; used no hemming tape. Hem turned up before facing turned back.)

Reasons for your choice:

Hem No. 2 - Flared skirt. (fabric: green and white rayon tweed)

__x__ A. (Two-inch hem with hemming tape; even hem and appropriate hemming stitch.)

_____ B. (Four-inch hem, puckered; uneven hem.)

Reasons for your choice:

Hem No. 3 - Full, gathered skirt. (fabric: delicate blue and white floral batiste)

__x__ A. (Four-inch hem with no hemming tape; even hem and appropriate hemming.)

_____ B. (Less than one-inch hem; used hemming tape which showed through the fabric.)

Reasons for your choice:

Hem No. 4 - Wool skirt with few pleats. (fabric: rust colored wool flannel)

__x__ A. (Two-inch even hem with tape; seams in hemline were pressed open and clipped; seams in hem and skirt matched. Used appropriate hemming stitch.)

_____ B. (Seams too wide. They were not pressed open; therefore, they were bulky. No hemming tape was used and the hem was bulky.)

Reasons for your choice:

Hem No. 5 - Blouse edge finish for a blouse to be worn inside a straight skirt. (fabric: white cotton broadcloth)

_____ A. (Hem was turned under three times to make it bulky. Hem was stitched on the machine.)

__x__ B. (Bottom of blouse was pinked; three rows of stitching about 1/8 inch apart prevented raveling.)

Reasons for your choice:

HOW DOES THIS MACHINE STITCHING RATE?

PROBLEM:

Before beginning to sew a garment, be sure to test the machine stitch on a doubled piece of the fabric you are using. Notice the general appearance of the stitch.

Examine the stitching on the three labeled pieces of fabric displayed here and check (x) whether you feel that it is satisfactory or whether it can be improved. Give reasons for your decisions. If you consider the stitching to be unsatisfactory, tell what you would do to improve it.

Sample No. 1. (A row of machine stitching was made on a doubled piece of unbleached muslin. The stitching was in two colors of thread.)

_____ Good stitching

__x__ Poor stitching

Reasons for your decision:

(Top tension was too tight. Bottom tension was too loose.)

If poor stitching, what would you do to improve it?

Sample No. 2. (A row of stitching was made on a piece of unbleached muslin. Stitching was done in two colors of thread. The stitching looked identical on both the top and bottom of the fabric.)

__x__ Good stitching

_____ Poor stitching

Reasons for your decision:

(The stitching appears the same on both the top and bottom of the fabric. The stitching is interlocked in the center of the fabric.)

If poor, what would you do to improve it?

Sample No. 3. (A row of stitching was made on a piece of unbleached muslin. Stitching was done in two colors of thread.)

_____ Good stitching

__x__ Poor stitching

Reasons for your decision:

(Bobbin thread is too tight and the top thread is too loose. This caused the top thread to form loops on the bottom side of the fabric.)

If poor, what would you do to improve it?

(First, tighten the top tension. If this does not remedy the situation, the bobbin tension may be loosened.)

SUITABLE FABRIC FOR BEGINNER'S FIRST GARMENT

PROBLEM:

Mary is making plans for constructing her first dress. Examine each of the fabrics on display here, and check (x) whether you feel each sample would or would not be suitable for a beginner to handle. Give reasons for each of your decisions.

Sample No. 1. (fabric: blue floral print with no design to match.)

__x__ Suitable

_____ Unsuitable

Reasons for your choice:

Sample No. 2. (fabric: red rayon and cotton faille.)

_____ Suitable

__x__ Unsuitable

Reasons for your choice:

Sample No. 3. (fabric: rust-colored wool fabric.)

_____ Suitable

__x__ Unsuitable

Reasons for your choice:

Sample No. 4. (fabric: rose-colored nylon in a checked design.)

_____ Suitable

__x__ Unsuitable

Reasons for your choice:

Sample No. 5. (fabric: rayon taffeta with bold, plaid design.)

_____ Suitable

__x__ Unsuitable

Reasons for your choice:

SELECTION OF READY-MADE BLOUSE

PROBLEM:

Sally needs a new blouse for sports wear. Examine these two blouses which she is considering for her wardrobe. On this page check (x) which blouse you think would be the better buy and which one would be the poorer buy. Give reasons for your choices.

Blouse No. 1. (white pima broadcloth)

__x__ Better buy

_____ Poorer buy

Reasons for your choice:

Blouse No. 2. (blue-green stripped cotton; very sleazy)

_____ Better buy

__x__ Poorer buy

Reasons for your choice:

SCORE CARD FOR STATION-TO-STATION PROBLEMS

Problem 1 - Buttonhole Placement and Length

Yes	No		
___	___	1.	Space between buttonholes is equal?
___	___	2.	Is the distance between buttonholes in good proportion?
___	___	3.	Buttonhole 1 located in proper place in relation to center front?
___	___	4.	Buttonhole 2 located in proper place in relation to center front?
___	___	5.	Buttonhole 3 located in proper place in relation to center front?
___	___	6.	Buttonhole 1 is correct length in relation to button?
___	___	7.	Buttonhole 2 is correct length in relation to button?
___	___	8.	Buttonhole 3 is correct length in relation to button?
___	___	9.	Are buttonholes the proper width?

Problem 2 - Pattern Alteration

___	___	1.	Is alteration made at correct place?
___	___	2.	Is the extension of the correct width?
___	___	3.	Is the extension even in all places?

Problem 3 - Cutting and Joining Bias

___	___	1.	Length of strip satisfactory? 10-12 inches.
___	___	2.	Width of strip accurate?
___	___	3.	Cut on true bias?
___	___	4.	Stripes match in fabric?
___	___	5.	Joined correctly?
___	___	6.	Edges cut evenly, not gashed?
___	___	7.	Seam where joined is even and smooth?
___	___	8.	Seam lies flat?
___	___	9.	Threads tied securely?
___	___	10.	Seam comes out even where joined? Not cut off?

Problem 4 - Suitable Hem Finishes

Hem No. 1 - Housecoat

_____ A
_____ B

Reasons:

_____ 1. Hem about three inches wide.
_____ 2. Hem is even.
_____ 3. No hem tape is needed on cotton material.
_____ 4. Bottom of housecoat hemmed before facing is turned back.

Hem No. 2 - Gored skirt (flared) of rayon material

_____ A
_____ B

Reasons:

_____ 1. Suitable width hem (about two inches).
_____ 2. Used suitable hemming tape.
_____ 3. Hem is even in width.
_____ 4. The fullness has been shrunk out of the hem.
_____ 5. Used appropriate hemming stitch.

Hem No. 3 - Full skirt of batiste

_____ A
_____ B

Reasons:

_____ 1. Suitable width hem for material.
_____ 2. Hem is even in width.
_____ 3. Does not need hemming tape on thin material.
_____ 4. Used suitable hemming stitch.

Problem 4 (Continued)

Hem No. 4 - Wool skirt with pleat

_____ A
_____ B

Reasons:

_____ 1. Seams are pressed open.
_____ 2. Seams are clipped below hem and part has been cut away to avoid bulkiness.
_____ 3. Hem tape is used on this material.
_____ 4. Seams in skirt and hem match.
_____ 5. Suitable hemming stitch has been used.

Hem No. 5 - Finish for cotton blouse to be worn tucked into a straight skirt

_____ A
_____ B

Reasons:

_____ 1. Edge pinked to avoid bulkiness.
_____ 2. Several rows of stitching to prevent pulling out.
_____ 3. Material does not ravel easily, so okay to pink.

Problem 5 - Machine Stitching

Sample No. 1

_____ Good stitching
_____ Poor stitching

Reasons for decision:

_____ 1. Top thread lies on top of material.
_____ 2. Can see the bobbin stitch on top side of material.

Remedy:

_____ 1. Loosen top tension.
_____ 2. Tighten bottom or bobbin tension.

Problem 5 (Continued)

Sample No. 2

_____ Good stitching
_____ Poor stitching

Reasons for decision:

_____ 1. Appearance same on top and bottom of material.
_____ 2. Threads interlock between two thicknesses of material.

Sample No. 3

_____ Good stitching
_____ Poor stitching

Reasons for decision:

_____ 1. Bobbin thread lies on bottom side of fabric, or
_____ 2. Can see the top thread lying on botton of fabric; forms loops there.

Remedy:

_____ 1. Loosen buttom or bobbin tension, or
_____ 2. Tighten top tension.

Problem 6 - Suitable Fabric for Beginner to Use in Making a Dress

Sample No. 1 - Blue printed cotton fabric

_____ Suitable
_____ Not suitable

Reasons for choice:

_____ 1. No matching required.
_____ 2. Can easily detect right and wrong side of fabric.
_____ 3. No up-and-down design to cut going in one direction.
_____ 4. Firmly woven; does not stretch easily.

Problem 6 (Continued)

Sample No. 2 - Red rayon and cotton faille

_____ Suitable
_____ Unsuitable

Reasons for choice:

_____ 1. Ravels easily.
_____ 2. Shows imprint of machine stitching after stitching is removed.
_____ 3. Heavy; would be bulky and hard to handle.

Sample No. 3 - Rust-colored wool flannel

_____ Suitable
_____ Unsuitable

Reasons for choice:

_____ 1. Soft, difficult to handle.
_____ 2. Expensive for beginner to use.

Sample No. 4 - Rose-colored checked nylon

_____ Suitable
_____ Unsuitable

Reasons for choice:

_____ 1. Ravels and frays very easily.
_____ 2. Crawls and is hard to handle.
_____ 3. Seams pull.
_____ 4. Check not woven "true", and it is difficult to handle.

Sample No. 5 - Rayon taffeta in a bold plaid

_____ Suitable
_____ Unsuitable

Reasons:

_____ 1. Ravels easily.
_____ 2. Plaid needs to be matched.
_____ 3. Fabric crawls.

Problem 7 - Points to Consider in Buying a Ready-Made Blouse

Blouse No. 1 - White broadcloth

_____ Better
_____ Poorer

Reasons:

_____ 1. Good pearl buttons.
_____ 2. Neat, even, flat-fell seams.
_____ 3. Good quality fabric.
_____ 4. Good buttonholes, good width, even, etc.
_____ 5. Front opening has neat finish; stitching is uniform.
_____ 6. Bottom of blouse has neat finish.
_____ 7. Machine stitching tied or backstitched.
_____ 8. Blouse suitable for sports wear.

Blouse No. 2 - Blue-green striped cotton

_____ Better
_____ Poorer

Reasons:

_____ 1. Fabric is sleazy.
_____ 2. Buttonholes are poorly made.
_____ 3. Stitching throughout blouse is of varying lengths.
_____ 4. Part of machine stitching is chain locked.
_____ 5. Blouse has many loose threads not tied or backstitched.
_____ 6. Cheap buttons.
_____ 7. Lapels of collar not same length.
_____ 8. Mock flat-fell seams are of varying widths.

VITA

Mildred Rea Witt

Candidate for the Degree of

Doctor of Education in Home Economics

Thesis: THE REVISION AND DEVELOPMENT OF SELECTED EVALUATION DEVICES FOR APPRAISING CERTAIN CLOTHING COMPETENCIES OF COLLEGE FRESHMEN

Major Field: Home Economics Education

Biographical:

Personal Data: Born in Sherman, Mississippi, September, 1927, the daughter of Henry J. and Cordie Young Rea.

Education: Graduated from Sherman High School in 1945; attended Blue Mountain College, Blue Mountain, Mississippi, 1945-1947; received Bachelor of Science degree with a major in Home Economics from Mississippi State College for Women, June, 1949; received the Master of Science degree with a major in Home Economics from Mississippi State College in August, 1954; completed requirements for the Doctor of Education degree in Home Economics in August, 1961.

Professional Experience: Taught Vocational Home Economics, Falkner, Mississippi, 1949-1952; was instructor in Home Economics, Mississippi State College for Women, 1953; taught in Plantersville, Mississippi Elementary School, 1954; taught Vocational Home Economics, Sherman High School, 1955; was Assistant Professor of Home Economics, Mississippi State College for Women, 1956-1958.

Professional Organizations: American Home Economics Association, Mississippi Home Economics Association (Executive Board, 1955-1957), American Vocational Association, Mississippi Vocational Association, Mississippi Educational Association, American Association of University Women, Phi Kappa Phi, Kappa Delta Epsilon, and Phi Upsilon Omicron.