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A STUDY OF TEACHING EFFECTIVENESS OF A COTTON  
FABRIC SELECTION UNIT WITH NINTH GRADE  
HOMEMAKING STUDENTS

by

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4688

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D. M. A.

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## CHAPTER I

### INTRODUCTION AND REVIEW OF RELATED LITERATURE

One of the requirements of the first year homemaking course planned by the North Carolina Department of Public Instruction is a unit based on the construction of a cotton dress. The requirements of the unit as given in the Guide to the Teaching of Homemaking in North Carolina Schools,<sup>1</sup> emphasize certain factors pertaining to the selection of cotton fabrics. Many of these factors deal with the aesthetic properties of the fabric. Little opportunity is given for instruction in the physical characteristics of the fabric that will make it a good or a poor purchase.

Practically every high school girl buying a dress fabric is aware that the fabric should be decoratively suitable for the style of garment selected and for the occasion for which the garment will be worn. Few students acquire any appreciation of the factors that will contribute to the serviceability of the fabric and thus influence the satisfaction they will receive from the garment.

A review of the literature pertaining to home garment construction and to the wise buying of textile products indicates a definite need for increased emphasis on the durability factors in fabrics whether purchased as yard goods or as ready-to-wear.

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<sup>1</sup> Dennis, Catherine T., Lacey, Mabel L., and Lowe, Louise. A Guide to the Teaching of Homemaking in North Carolina Schools. Raleigh, North Carolina. State Superintendent of Public Instruction.

Professional home economists and textiles and clothing personnel everywhere are fostering the interest of home sewing and its associated activities. In February, 1945, it was reported in the Textiles and Clothing Division of Association Business in the Journal of Home Economics that "the practice of home sewing is undoubtedly increasing. Many persons who had become accustomed to buying all or a part of their family's clothing ready-made are now making at least a part of it."<sup>2</sup>

Swann found in her study of consumer education for the high school girl that " . . . the only type of garment which was usually made for over 50 per cent of the girls was cotton school and house dresses."<sup>3</sup> Brier reported in her study of fabric selection of college home economics freshmen that "There are few if any records with respect to freshmen fabric buying habits and fabric selections,"<sup>4</sup> but that the study made by Thomas on fabrics used at the University of Tennessee " . . . indicated a definite need for increased knowledge of fabric selection on the part of home economics students."<sup>5</sup>

In her study of the qualities considered in the selection of dress material, Swann reported that "None of the girls mentioned fiber

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<sup>2</sup> Textiles and Clothing Division. "Association Business," Journal of Home Economics, 37:108, February, 1945.

<sup>3</sup> Swann, Louise. Need for Consumer Education Relating to Clothing by High School Girls in Marion, Kentucky. Masters Thesis. Iowa. Iowa State College, p. 38.

<sup>4</sup> Brier, Sarah Elizabeth. A Study of Fabric Selection of Home Economics Freshmen at The University of Tennessee. Masters Thesis. Tennessee. University of Tennessee. p. 1.

<sup>5</sup> Ibid., p. 2.



content of the material,"<sup>6</sup> and that " . . . 84 per cent of the freshman girls, a higher percentage than in the other classes, selected materials for garments made for them and since the majority used only one guide, color, to any extent in the selection of materials, it seems there is a need for help with the selection of materials."<sup>7</sup>

Mackensen found in her study related to consumer buying practices that "Consumers are very dependent upon sales service for assistance in the selection of dress fabrics."<sup>8</sup> She also found that

. . . in the selection of dress fabrics, factors which influence quality are ranked rather low. In the selection of cotton, the kind of weave, the closeness of the weave, mercerization, and sanforization are all ranked as less important than the trade name born by the material.<sup>9</sup>

Swann also found that the majority of reasons, given by the girls in her study, for needing advice in selection of ready-made dresses " . . . implied lack of experience, ability and knowledge required to purchase wisely."<sup>10</sup> She is of the opinion that "Since buying materials and making garments is usually considered an economical practice, . . . possibly as much, if not more, thought and planning are required in planning and making a dress that is satisfactory when finished, than buying

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<sup>6</sup> Swann, Louise, op. cit., p. 86.

<sup>7</sup> Ibid., p. 87.

<sup>8</sup> Mackensen, Kathryn Robbins. An Analysis of Consumer's Habits and Their Relation to the Organization of Teaching Units in Consumer Buying Problems. Masters Thesis. Louisiana: Louisiana State University, 1937. p. 38.

<sup>9</sup> Ibid., p. 68.

<sup>10</sup> Swann, Louise, op. cit., p. 74.



a ready-made dress."<sup>11</sup> She concludes that the data she collected warranted:

These girls need more fundamental knowledge about materials so they may be better able to evaluate and make the most of what salespersons and others can, and do, tell them about clothes they buy.<sup>12</sup>

Even with the high percentage of persons buying ready-made clothes, it is reported from "The Consumer Speaks"<sup>13</sup> project of the American Home Economics Association that there is increasing interest in fabric properties. In 1946, of the women voting on the characteristics they wanted pertaining to 46 items related to house dresses, approximately one-third of the votes had to do with the fabric characteristics. In 1948, of the votes for factors related to dress materials totaled, approximately two-thirds were cast in behalf of the fabric itself.<sup>14</sup>

A high school reference book used frequently by home economics students states that "within the last few years, interest in the problems of consumption of clothing has been shown by a group of intelligent people. They have felt that the consumer of today was not a well-informed person."<sup>15</sup>

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<sup>11</sup> Ibid., p. 61.

<sup>12</sup> Ibid., p. 119.

<sup>13</sup> Sundquist, Alice and Whitelock, Mary C. "The Consumer Speaks about House Dresses," Journal of Home Economics, 38:562, November, 1946.

<sup>14</sup> Whitelock, Mary G. and Mack, Pauline Beery, "The Consumer Speaks Again on House Dresses," Journal of Home Economics, 40:180, April, 1948.

<sup>15</sup> Ryan, Mildred Graves. Your Clothes and Personality. New York: D. Appleton-Century Co., 1942. p. 103.

In an article directed toward the strengthening of consumer education in clothing, McAdams and others declare that

Every normal high school girl is interested in dress. Many of them assume some responsibility for the selection of their wardrobes. High school clothing courses, therefore, offer an unusual opportunity for successful education in consumer buying centered around strong interests and student experiences with clothing purchases.<sup>16</sup>

Mendenhall reports that "both elementary and high school pupils are very active as consumers in respect to spending money."<sup>17</sup>

Wingate states that "more than ever before, consumers are interested in obtaining information about textiles that will help them to get their money's worth," and also that "consumers want to know of what raw materials fabrics are made, how they are constructed, what performance to expect from fabrics in use, and how to care for textile articles."<sup>18</sup>

With such conclusive evidence of the fact that there is a great lack of knowledge pertaining to fabric selection, this study was undertaken as an attempt to incorporate the presentation of factors influencing fabric selection into the unit based on the construction of the cotton dress. A unit on cotton fabric selection was planned and taught to 13 students of first year homemaking at Denton School, in the Piedmont section of North Carolina, to determine the teaching effectiveness of such subject matter when presented to students of this age level.

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<sup>16</sup> McAdams, Laura E. and others. "Strengthening Consumer Education in Clothing," Journal of Home Economics, 39:575, November, 1947.

<sup>17</sup> Mendenhall, James E. and Harap, Henry. Consumer Education. New York: D. Appleton-Century Co., 1943. p. 330.

<sup>18</sup> Wingate, Isabel B. Textile Fabrics and Their Selection. New York: Prentice Hall, Inc., 1942. p. vii.

In order to measure the effectiveness of the teaching of the fabric selection unit, another group of 13 first year homemaking students was used as a control group. Throughout the remainder of the study, the class to which the fabric selection unit was taught will be referred to as Class A. The control group will be referred to as Class B.

Pre-tests and questionnaires were used as the means of obtaining information about the girls' previous knowledge and experience in fabric selection. Re-tests and questionnaires were used to measure any knowledge and perceptiveness acquired through the experiences of each class and, as in the case of Class A, through class instruction in the unit.

The differences in the responses to these tests and questionnaires and the verbal and written comments made by the students during the time the study was in progress were used to measure the effectiveness of the teaching of the cotton fabric selection unit. It is thought that success in the presentation of such a unit would have great influence upon the fabric selection practices of the group when purchasing the fabrics for their cotton dresses. The facts learned at this time might also be associated with future problems in the purchasing of fabrics or ready-made clothing.

## CHAPTER II

### METHOD OF PROCEDURE

To study the teaching effectiveness of the cotton fabric selection unit upon the fabric selection practices of ninth grade homemaking students, a cotton fabric selection unit was planned to be taught to a ninth grade homemaking class. In order to make the study more accurate, it was felt that a comparison of the fabric selection practices of a group instructed in the unit should be made with the fabric selection practices of a group not instructed in the unit.

The selection of ninth grade homemaking students was thought to be the most reliable group with which to make this study because they would be in their first year of homemaking education with no previous formal instruction in cotton fabric selection.

The textile unit was limited to cotton fabric selection since first year homemaking students work primarily with cotton fabrics during their clothing construction. The fabric selection was planned as a sub-unit of the clothing area and was taught as the introductory part of the clothing unit.

It was felt that not more than five short lessons should be taught in order that student interest might be retained throughout the unit and to prevent their possible desire to purchase fabrics before the completion of the unit. The objectives of the unit were set up with regard to ninth grade levels of learning and understanding.

The unit was planned to attempt to attain the following objectives:

To develop in the students:

1. An awareness of the factors contributing to quality in cotton fabrics.
2. An understanding of the effect of the fiber, weave, and finish upon the fabric.
3. Some ability to judge quality in a cotton fabric.
4. Some ability to detect poor construction, deceiving finishes, and undesirable design in cotton fabrics.
5. An ability to select fabrics for the purpose of their use.
6. A desire to use the information gleaned from the unit in the purchase and care of cotton fabrics.

The five lessons were planned to meet the needs of first year homemaking students for consumer information before purchasing fabrics for garment construction. Each lesson was planned to present only those points which were felt basic to cotton fabric selection for ninth grade girls, and does not attempt to present a detailed study of the subject matter.

Each of the five lessons presented in the unit was planned with definite objectives in mind. Plans of the five lessons are shown in Exhibits 1, 2, 3, 4, and 5 in the Appendix.

Lesson I was planned to develop student knowledge of the relation of cotton fibers to the construction of cotton yarns and to gain student interest in the relation of the yarn to the fabric.

Lesson II was planned to develop the ability to recognize simple weaves and to associate the characteristics of these weaves with the qualities desired in fabric performance.

Lesson III was planned to develop student awareness of the factors

contributing to color in fabrics and to the desirability of fastness of colors.

Lesson IV was planned to develop an appreciation for the characteristics the finish gives to the fabric and to enable the students to identify several cotton fabrics.

Lesson V was planned to be taught as a summarization of the unit and to direct emphasis on the students' developing an ability to select fabrics which are best suited to the purpose for which the fabric is employed.

Responses of the class and individual students were to be observed closely, and all incidents indicating unusual student reactions were to be carefully noted.

In order to study the teaching effectiveness of the cotton fabric selection unit with ninth grade girls, it was necessary to obtain information from each student concerning her knowledge of fabrics before being instructed in the unit. A pre-test composed of a total of fifteen questions was planned to indicate this basic information of the students before the teaching of the unit. The pre-test consisted of two parts:

- (1) ten general questions pertaining to fabrics and fabric selection with the major emphasis upon factors important in the use of cotton;
- (2) five questions applied directly to actual cotton fabrics which were used with the test. The actual pre-test given to the students of both ninth grade groups is shown as Exhibit 6 of the Appendix.

To obtain further information concerning the students' previous fabric experience and their knowledge of factors pertaining to the fabrics they had last purchased, a questionnaire entitled "Information on the Last Fabric You Purchased" was constructed. (Exhibit 7 in the



Appendix). For comparison with the pre-tests and first questionnaires, a re-test and final questionnaire were planned to measure the effectiveness of the unit. The re-test was the same as the pre-test. The final questionnaire, based on the fabrics purchased for class use, differed slightly from the original questionnaire dealing with fabric purchases. (Exhibit 8 in the Appendix).

The twenty-six students used in the study were members of two sections of first year homemaking. Each section was scheduled to meet at a different class period. Each section included thirteen girls enrolled in their first year of homemaking education. The ages varied from 14 to 16 years in one section (only one student was 14 years of age) and from 15 to 16 in the other section.

For differentiating the two groups, they will be referred to as Class A, the section instructed in the unit, and Class B, the control group, or the section not instructed in the unit. The unit was taught to Class A in five lessons of fifty minutes each from March 16, 1951 to March 22, 1951.

On March 15, 1951 the pre-test was given to both Class A and Class B. No preliminary announcement of the pre-test or discussion of the subject was given either class. The only explanation made was that the teacher wanted to determine what the girls needed to know before they selected fabrics for the dresses to be made in class. The directions given for taking the pre-test were to answer questions which they knew, leave unanswered those which they did not know, and to refrain from guessing. Both classes were assured that the test would have no bearing on their class grades.

As each student completed her pre-test, she was given the



questionnaire, "Information on the Fabric You Last Purchased," and was asked to complete it, following the same directions that were given with the pre-test. After all students had completed the pre-tests and questionnaires, several voluntary comments of the students from both classes were noted but were not carried into class discussion in the class periods.

Following the testing period, the fabric selection unit was taught to Class A. During this time Class B was studying grooming, a subunit related to clothing and planned to be taught at this time so that Class B would be in the same general instruction area but not receiving the fabric selection instruction.

After the unit was taught to Class A, a re-test which was the same as the pre-test was given to both classes on the same day.

When the students of both classes had brought to class the fabrics which they had purchased, each student was given a second questionnaire entitled, "Information on Fabric Purchased for Class."

Information from these tests and questionnaires were compiled and will be discussed in Chapter III.

### CHAPTER III

#### PRESENTATION OF DATA AND FINDINGS OF THE STUDY

The data collected from the teaching experiences and from the 26 ninth grade homemaking students were compiled and studied to determine the differences in knowledge and experiences of the 13 students in Class A as compared with the 13 students in the control group, Class B, following the teaching of the cotton fabric selection unit.

As explained previously, the pre-test and first questionnaire were given to both classes before the unit on fabric selection was taught to Class A. The re-test was given to both classes after the fabric selection unit was taught. The second questionnaire was given to both classes after the fabric for the cotton dress to be made in class had been purchased.

#### Results of the Pre-tests

A total of 15 questions was included in the pre-test. (Exhibit 6 in the Appendix). Two of the questions required more than one answer, question number 3 requiring two answers and question number 8 requiring three answers. This made a total of 18 answers. For the 13 tests that were given to each class, the total number of possible answers was 234. (13 students x 18 total answers). The results of the total number of answers in the pre-test of each class are shown in Table I.

TABLE I Summarization of the Responses to the  
Pre-Tests Given Classes A and B

Total Number of Responses Given	Class A	Class B
Correct Answers	39	45
Incorrect Answers	20	46
Answers Not Given	175	143
Total Number of Possible Answers	234	234

Slight differences were noted in the total number of correct answers in the pre-tests given to Class A and Class B. The total number of correct answers given by Class B was slightly greater than the number of correct answers given by Class A. Class B also exceeded Class A in the total number of incorrect answers given, having a total of 26 more incorrect answers than Class A.

The total number of answers not given in each group, 175 in Class A and 143 in Class B, was much greater than the total numbers of both correct and incorrect answers in each class. These totals of questions unanswered were a positive indication that the students had little knowledge of the facts to be presented in the five lessons of the unit. These totals were also an indication that the students had followed the instructions given and refrained from guessing.

Table II shows the responses of each class to the individual questions given in the pre-test.

None of the students in Class A attempted to answer question number 1. Only one student from Class B gave a correct answer to question number 1. Only three students gave incorrect answers. These were

TABLE II Responses to Individual Questions  
of Pre-tests Given Classes A and B

Total Responses to Questions						
Question Number	Class A			Class B		
	Correct	Incorrect	Not Answered	Correct	Incorrect	Not Answered
1	0	0	13	1	3	9
2	0	1	12	0	1	12
3 1 part	4	1	3	4	3	1
2 parts	1	0	8	1	0	8
4	0	2	11	0	3	10
5	3	0	10	4	1	8
6	0	1	12	0	5	8
7	12	0	1	13	0	0
8 1 part	0	0	1	1	0	0
2 parts	1	0	0	0	1	0
3 parts	0	0	12	0	0	12
9	1	3	9	4	2	7
10	3	1	9	4	3	6
11	0	0	13	0	3	10
12	3	2	8	2	6	5
13	1	4	8	1	7	5
14	2	2	9	1	4	8
15	6	3	4	8	3	2

also from Class B.

The results were exactly the same from both classes for question number 2, two parts in question number 3 and three parts in question number 8.

Questions 7 and 15 show the largest number of correct answers from both classes. From Class B, 13 gave correct answers, and from Class A, 12 gave correct answers to question number 7. This question referred to the fading of colors which are not colorfast, and it was expected only to determine the students' awareness of colorfastness of fabrics. From Class B, eight gave correct answers and from Class A, six gave correct answers to question number 15.

The questions with the next largest number of correct answers were numbers 3 (one part), 5, 9, and 10 with a total of four each from Class B. Class A had only one question, number 3 (one part), with four correct answers. All other questions from both classes had fewer than four correct answers, ranging from three to none.

#### Results of Questionnaire I

The questionnaire, "Information on the Last Fabric You Purchased," included 15 questions referring to the fabric each student had last purchased, with space provided for comments with some of the questions. Only key information points from the questionnaires were used in the tabulation of the number of students with experience or knowledge in the factors listed on Table III.

Table III indicates that in Class A all students had purchased fabric before. Only two had purchased it alone. In Class B, nine students had purchased fabric before; four had purchased it alone.

No one in either class knew the weave or the type of finish of

TABLE III Summarization of the Responses of  
Classes A and B to Questionnaire I,  
"Information on the Last Fabric You Purchased"

Key information points from questionnaire	Number of persons with experience in or knowledge of the factors listed	
	Class A	Class B
1. Purchased fabric previous to this date . . . . .	13	9
2. Purchased fabric alone . .	2	4
3. Knowing fiber content of fabric . . . . .	7	4
4. Knowing name of fabric . .	8	5
5. Knowing weave of fabric. .	0	0
6. Distinguishing between firm and loose weave . . .	9	7
7. Aware of design in fabric.	10	6
8. Knowing type of finish of fabric. . . . .	0	0
9. Knowing how color was applied to fabric . . . . .	0	2
10. Aware of color fastness. .	6	6
11. Knowing that fabric was pre-shrunk . . . . .	2	5
12. Knowing that fabric had a label. . . . .	8	4



the fabric. Only two students, both from Class B, knew how color was applied, listing it as "dyed."

Only two students in Class A knew whether the fabric had been pre-shrunk. Five students in Class B knew that their fabric had been pre-shrunk.

Seven students from Class A knew the fiber content of the fabric as compared with four students in Class B knowing the fiber content. Five from Class A gave the fiber content as "cotton" and two as "wool." Of the four students in Class B who knew the fiber content, three listed it as "cotton" and one as "part wool and part rayon".

Eight students from Class A answered that they knew the name of their fabrics, listing them as gingham, corduroy, taffeta, pique, organdy, bastiste, percale, and Indianhead. The five of Class B who answered that they knew the fabric names listed them as gabardine, pique, chambray, gingham, and dotted swiss. Pique and gingham were the only two listed by both classes.

Of the seven in Class A who knew the fiber content of the fabric, only two also knew the name of the fabric. Five knew the fiber content but not the name, and six knew the name but not the fiber content.

Of the four students in Class B who knew the fiber content of the fabric, two also knew the name of the fabric. This was the same number knowing both the name and fiber content as in Class A. Two knew the fiber content but not the name, and four knew the name but not the fiber content.

Nine students distinguished between a firm and loose weave in Class A as compared with seven students in Class B. All other students who did not distinguish this weave difference left the question unanswered.



The answers to the question, "What type of design was used on the material?", were listed, by all who answered, as a type of artistic or decorative design. The answers were tabulated as the number of students who were aware of the design of any type in the fabric. In Class A there were four who listed the design as "checked." One listed "flowers", one "stripes," and one "plain." Three stated that there was no design in their fabrics. In Class B there was one who listed it as "checked," one, "plaid," one, "solid," one, "dots," and one as "harmonized in with material."

Of the two in Class A who knew that the fabric was pre-shrunk, it was questionable whether they actually knew that the fabrics were pre-shrunk before purchasing since their knowledge was based on their statements "did not shrink" and "because it does not draw up." Three of the five in Class B who gave positive answers seemed to be more reliable in their source of information, basing it on "pre-shrunk," "tag," and "label." The other two were "does not shrink when washed" and "because it did not shrink."

It was also questionable whether the six in Class A who answered that their fabrics were colorfast knew that they were colorfast before purchasing. Their comments to the question were: "did not fade," "does not fade," "was a good grade of material," and one other answering "yes" made no comment as to how she knew.

Two of the six in Class B who answered that the fabric was colorfast seemed to be somewhat more reliable in knowing whether the fabric was colorfast before purchasing than did the remaining four. Their information was based on "the saleslady said so" and "clerk told me." The remaining four were questionable, basing their information on "does

not fade when washed" and "it was Sanforized." Two made no comment. All others left the question unanswered.

Two students in Class A answered that their fabrics were colorfast to light. One student answered that her fabric was not colorfast to light, but her actual knowledge was questionable because her comment was based on "it was dark material."

Of the eight students in Class A who knew whether the fabric had a label, five answered that it did and three answered that it did not. Of the five positive answers, four answered that they did not read them, and one answered that she did read it and that it contained the information "colorfast" and "will not shrink."

Four students in Class B knew whether the fabric had a label. Two students reported that it did not have a label. The other two, answering that it did have a label, had also read the label, commenting in one case that the information was "Sanforized" and "colorfast." In the other case, the student stated the "kind of material and pre-shrunk."

From the summarization of the results of the pre-tests and the first questionnaires, the knowledge and fabric experience of both classes showed no great variance. Class B had a total of six more correct answers on the pre-tests than did Class A. Class A showed a similar increase in experience and knowledge of the fabrics they had purchased with only three information points showing a smaller total than in Class B.

#### Description of the Responses of Class A to Each Lesson in the Unit

##### Lesson I

The objectives of the first lesson were: (1) to develop student knowledge of the relation of cotton fibers to the construction of cotton

yarns; (2) to gain student interest in the relation of the yarn to the fabric.

The lesson was introduced by class discussion of a bulletin board display entitled, "This Little Cotton Goes to Market." This consisted of simple illustrations showing the processes of manufacturing from the raw cotton to the finished yarns. Several of the students commented that they had never given thought to the way yarn was made. All of the students showed much interest in untwisting a yarn, raveled from the fabric, until they could pull it apart with hardly any force. One student asked why the fibers were white when she broke her yarn for the original yarn was yellow. It was interesting to note that the same student commented during Lesson III that this yarn was probably taken from a piece dyed fabric.

#### Lesson II

This lesson was planned to develop the ability to recognize simple weaves and to associate the characteristics of these weaves with the qualities desired in fabric performance.

The lesson was introduced with a demonstration of the interlacing of yarns to form cloth on a homemade cigar box loom. The students showed interest in this demonstration. They began to show much more interest when they were divided into groups in which each student interlaced yarns on a weave-it loom to form the plain and twill weaves.

The plain and twill weaves were the only two weaves shown in this lesson because it was felt that these would be the two weaves that the students would most likely encounter during their fabric selection and construction. It was explained, however, that there were other weaves, and should they buy cotton dress fabrics for class construction with

other than the plain or twill weave they could classify them as figure or novelty weaves until they had the opportunity to study additional weaves.

Almost immediately after the demonstration of the plain and twill weaves on the weave-it looms, the students began voluntarily examining garments they were wearing to try to identify the weaves used. Some of the students commented that they did not know that there were any differences in weaves.

While part of the students were waiting to weave on the weave-it looms, others began to study the firmness of a voile swatch as compared with a swatch of firmly woven chambray. One student became so much aware of the loosely woven voile that she found that she could separate the yarns by rubbing it between her forefinger and thumb.

At the end of the class period, some of the students asked whether they could "weave" again the next day. This comment alone indicates the student interest in the activity planned for the lesson. When the learning obtained through this activity was applied to the examination of fabrics and to their own garments, the objectives of the lesson were accomplished satisfactorily.

### Lesson III

The third lesson was planned to develop student awareness of the factors contributing to color in fabrics and to the desirability of fastness of colors.

After the class had looked at a piece of red Indianhead, they were led into a discussion of the dyeing and printing of fabrics. During the discussion, one student commented that she thought all materials had a right and wrong side. All students seemed pleased that after the

discussion they could distinguish between dyed and printed fabrics. In some cases, they were able to recognize yarn dyeing as is used in making chambrays and gingham.

The students were most interested in a garment shown to them and compared with a swatch of the original fabric. The garment had been laundered one time and had faded objectionably during laundering. One student commented, "You wouldn't even know it was the same material."

The washing of a piece of red costume cambric with a piece of white bastiste was then demonstrated. The cambric discolored the water to a bright red and colored the white bastiste to a definite pink. The cambric swatch was used to illustrate the teaching point quickly and in such a way that the students could see readily the results of the bleeding of colors not fast to laundering.

For illustrations of colors fast to light, the students were shown a blue spun rayon dresser scarf which had faded by the exposure of one side to sunlight. Much evidence of light fading could be seen by comparing the faded side with the unexposed side.

A black rayon blouse was used to show color changes from under-arm perspiration. This garment had turned slightly pink at the under-arm sections of the sleeve and blouse.

The two rayon illustrations were used because they were the best examples of colors not fast to light and perspiration available at the time the unit was taught. The students were told that the fiber content was rayon rather than cotton. They were also told why the substitution was made and that the same effects might be found in some cotton fabrics.

#### Lesson IV

Additional swatches were studied to develop an appreciation for



the characteristics the finish gives to the fabric and to enable the students to identify several cotton fabrics.

The class was shown swatches of the same materials before and after one laundering to illustrate the permanence of the finishes. The students showed more real interest in this lesson than in the previous lessons. They were most interested in learning to discern those finishes which were not permanent, especially excessive sizing and embossed designs. A student said that she had wanted to buy a piece of that material (picolay) last summer, but her mother had said that the design would not stay in. She had wondered why.

Several of the students expressed the belief that crease-resisting fabrics would be very desirable in their summer clothes.

Most of the students were familiar with the term "Sanforizing," but not one was able to tell the percentage shrinkage guaranteed. Most of the students were surprised at the amount of shrinkage they calculated in a yard of fabric which had been marked for shrinkage and laundered beforehand. The amount of shrinkage calculated in this case was  $\frac{1}{4}$  inch to the six inch swatch or  $1\frac{1}{2}$  inches to one yard of fabric.

It was thought advisable that the students be able to identify several cotton fabrics by name. Since no separate lesson was prepared for this, it was included in Lesson IV. Seventeen fabric swatches were numbered and a description of each fabric was given on a mimeographed sheet. The students had no difficulty in identifying the fabrics with the descriptions. They were familiar with the descriptive terms used and had been using the fabric names with each illustrative swatch shown in previous lessons. After the mimeographed sheets were collected, each student was asked to identify several swatches at random. They did so

easily and with almost complete accuracy.

#### Lesson V

Lesson V was taught as a summarization of the unit and to direct emphasis on students' developing an ability to select fabrics which are best suited to the purpose of their use.

The class discussed the amount of "wear and tear" which would be made on a summer party dress, a school dress, and shorts; those three chosen for the probable gradation in amount of strain during wear.

To conclude the unit, the class discussed the desirability of finding and reading fabric labels. Each student was given several actual labels, tags, and stickers obtained from bolts of fabric at a local department store. The students studied these and looked for information concerning the fabric. Each student discussed the value of the information she found on her labels.

As the final assignment, the class was asked to select and purchase a cotton fabric suitable for a school dress to be made in this class. The same assignment was given to Class B on the same day. Each class was asked to have their fabrics purchased and brought to class by the date specified, allowing one week for selecting and purchasing the fabric.

#### Testing and Questioning Following the Teaching of the Unit

The day following the completion of the unit, Class A and Class B were given the re-test on the unit. No preliminary announcement of the re-test was made to Class A in order to avoid a possible relaying of information to Class B.

One week later, after the students had brought their fabrics to class, a questionnaire entitled "Information on Fabric Purchased for



Class" was given to Class A to obtain information from each student concerning her acquired knowledge of fabrics after being instructed in the unit and purchasing her fabric.

The same questionnaire was given to Class B to obtain information from each student concerning any knowledge that she may have acquired from other students or through the purchasing of her fabric, though not instructed in the unit.

After the questionnaire was given to Class A, there was a general class discussion about the selection of the students' fabrics focused at these three questions:

1. What did you look for in the fabric?
2. What did you ask the salesperson? What did she tell you?
3. What did you learn from this class that you used when selecting your fabric?

After the questionnaire was given to Class B, this class also had a general discussion on the same topic, omitting question 3. Comments made by individuals in each class were noted.

#### Results of the Re-tests

The re-tests were exactly the same as the pre-tests and are tabulated in the same manner as the pre-tests.

Table IV indicates a marked difference in the total number of correct answers, incorrect answers, and answers not given from the re-tests of Class A as compared to those of Class B. Class A had a total of 224 correct answers. This was 175 more correct answers than the 49 correct answers given by Class B.

Class A had fewer incorrect answers than Class B as shown in the totals of nine incorrect answers in Class A and 44 incorrect answers

TABLE IV Summarization of the Responses to the  
Re-tests Given Classes A and B

Total Number of Responses Given	Class A	Class B
Correct Answers	224	49
Incorrect Answers	9	44
Answers Not Given	1	141
Total Number of Possible Answers	234	234

in Class B.

In the groups giving no answers, Class A far excelled Class B. In Class A, there was only one answer not given as compared with 141 answers not given in Class B.

Table V shows the results of individual responses to the 15 questions of the re-tests of Class A and Class B.

Referring to Table V it will be seen that of the 15 questions on the re-test, eight questions were answered correctly by all students of Class A. No question was answered correctly by all students of Class B.

In Class B the two questions with the largest number of correct answers were number 7, answered correctly by 12 students, and number 15, answered correctly by nine students.

In Class A there were no questions with no correct answers, and in Class B there were six questions with no correct answers.

The question having the fewest number of correct answers in Class A was number 4, having 10 correct answers. This question referred to mercerization, a chemical process which adds luster and strength to

TABLE V Responses to Individual Questions  
of Re-tests Given Classes A and B

Total Responses to Questions						
Question Number	Class A			Class B		
	Correct	Incorrect	Not Answered	Correct	Incorrect	Not Answered
1	13	0	0	1	1	11
2	13	0	0	0	1	12
3	13	0	0	2	2	0
1 part	13	0	0	1	1	9
2 parts	13	0	0	0	1	12
4	10	3	0	0	1	7
5	13	0	0	5	1	6
6	12	1	0	0	7	1
7	12	1	0	12	0	0
8	0	0	0	3	0	0
1 part	0	0	0	0	3	9
2 parts	0	0	0	0	1	7
3 parts	13	0	0	0	1	8
9	12	1	0	5	0	10
10	13	0	0	5	3	7
11	11	1	1	0	3	7
12	12	1	0	3	5	8
13	12	1	0	1	4	0
14	13	0	0	1	4	0
15	13	0	0	9	4	0

fabrics. There were four questions in Class B having only one correct answer.

In Class A there were six questions with only one incorrect answer and one question with three incorrect answers. There was only one question not answered and by only one student. This question referred to the name of the weave of a specific fabric shown with the test. In Class B there were 13 questions that had incorrect answers. There were 13 questions that were not answered by part of the students.

#### Results of Questionnaire II

The questionnaire "Information on Fabric Purchased for Class" had the same general information points as the first questionnaire, but some of the questions were stated in a slightly different form so as to apply to the fabrics purchased. The information from the questionnaire was tabulated in the same manner as the first questionnaire. The results are shown in Table VI.

Table VI shows that in Class A all students purchased their fabrics alone, and in Class B only seven purchased their fabric alone. It also indicates that all students in Class A knew the fiber content and the name of the fabric. Only six in Class B knew the fiber content. It is believed that the seven in Class B who did not know the fiber content were not familiar with the term since they had been asked only to purchase cotton fabric for class use. Of the six who knew the fiber content, four also knew the name. Three students knew the name but not the fiber content.

All students of Class A knew the name of the weave of their fabrics, 12 listing them as "plain" and one listing it as "figure." Only two students of Class B knew the weave of their fabric, listing

TABLE VI Summarization of the Responses of  
Classes A and B to Questionnaire II,  
"Information on Fabric Purchased for Class"

Key information points from questionnaire	Number of persons with experience in or knowledge of the factors listed	
	Class A	Class B
1. Purchased fabric alone . .	13	7
2. Purchased fabric with help . . . . .	0	6
3. Knowing fiber content of fabric . . . . .	13	6
4. Knowing name of fabric . .	13	7
5. Knowing weave of fabric. .	13	2
6. Distinguishing between firm and loose weave . . .	13	7
7. Aware of design in fabric.	12	10
8. Knowing type of finish of fabric. . . . .	13	0
9. Knowing how color was applied to fabric . . . .	13	1
10. Aware of color fastness .	13	6
11. Knowing that fabric was pre-shrunk . . . . .	12	2
12. Knowing that fabric had a label. . . . .	12	9

them as "plain."

All students of Class A distinguished between the firmness and looseness of the weave, and seven students in Class B made this distinction. Six students from Class A commented that they knew this "by looking through it," and two students answered "can hardly see through it." One other student answered "hold it before the light," and two students did not answer how they knew. In relation to this same question, five students from Class B who distinguished this weave difference commented "by looking through it." Two other students who distinguished between the firmness and looseness of the weave did not answer how they knew.

The question "What type of design does the material have?" was tabulated in the same way as in the first questionnaire. Both classes listed the type of design much the same as in the first questionnaire. Two students in Class A commented that the design was printed straight on the fabric. No one in Class B commented on the design.

All students of Class A were aware that their fabrics were colorfast to washing, but only ten answered that they were colorfast to light. Three students did not answer this part. Six students answered that they knew the fabrics were colorfast by reading the label. Four students washed a sample. One student read the label and washed a sample. Three students gained this information from the saleslady. Of the three who listed the saleslady as their source of information, it was noted that two students answered that the fabric had no label. The other student made no comment on the question pertaining to labels. It was also noted that the four students who washed a sample made no comment concerning colorfastness pertaining to information found on the label.



Six students of Class B were aware of colorfastness to washing. Four of these six also answered that the fabrics were colorfast to light. Only one of the six comments telling how they knew that it was colorfast indicated that the information came from the label. The remaining five made no comment on "How do you know?" It was noted that two of these students stated that the fabric had a label, and two, that the fabric had no label. None of the four made a comment on the question "What did the label tell you?" One student did not attempt to answer the question on labels.

Twelve members of Class A knew whether the fabric was pre-shrunk. One did not answer. The reasons for the question "How do you know?" were "label," "saleslady said so," "saleslady's experiment," "Sanforized," "washed sample and tag said so," and "it can be washed." Of the two who commented that the "saleslady said so" both answered that the fabric had no label. One of the two who answered "by saleslady's experiment" did not mention shrinkage on the question "What did the label tell you?" Of the six who answered "label," five listed that the term "Sanforized" was found on the label. The one student who answered "it can be washed" did not answer the question.

Two of Class B knew that their fabrics were pre-shrunk. One listed her source of information as "label" and the other made no comment, answering that her fabric had no label.

In Class A, 12 knew whether the fabric had a label. Ten of these answered that the fabric had a label and two answered that the fabric had no label. One person did not answer the question pertaining to the presence of a label on the fabric. All of the ten who had a label on their fabrics answered "yes" when questioned as to whether they had



read it and whether the information was of value to them in the selection of their fabrics.

In this class, the factors listed in "What did the label tell you?" were "Sanforized," "permanent finish," "colorfast," "type of finish," "guaranteed satisfactory," "mercerized," "pre-shrunk," "washable," "shrinkage," "fiber content," and "will not shrink more than one per cent."

In Class B, nine students knew whether the fabric had a label. Four students did not answer the question. Of the nine, only two answered that the fabric had a label, and stated that it was of value in selecting their fabrics. The remaining seven answered that the fabric had no label. The only factor listed by this class in "What did the label tell you?" was "pre-shrunk."

#### Comparisons of the Pre-tests and Re-tests

In comparing the results of the pre-tests and re-tests of the two classes, as shown in Table VII, several facts were noted.

TABLE VII Comparison of the Summarization of Responses of Classes A and B to the Pre-tests and Re-tests

Total Number of Responses	Class A		Class B	
	Pre-test	Re-test	Pre-test	Re-test
Correct Answers	39	224	45	49
Incorrect Answers	20	9	46	44
Answers Not Given	175	1	143	141
Total Number of Possible Answers	234	234	234	234

No great differences were shown in the pre-tests of Class A and Class B. There was a marked difference in the results of the re-tests of Class A and Class B. There were 175 more correct answers in Class A than in Class B. There were only nine incorrect answers in Class A and 44 incorrect answers in Class B. Only one answer was not given in Class A as compared with 141 answers not given in Class B.

There was not a great difference shown in the pre-tests and re-tests of Class B. The greatest differences were shown in the pre-tests and re-tests of Class A. There were 185 more correct answers, 11 fewer incorrect answers, and 174 fewer answers not given in the re-tests than in the pre-tests.

One of the most unusual results in answers was noted in questions number 7, pertaining to the fading of colors, and number 15, pertaining to the raveling of fabrics (both commonly encountered factors). They did not show a marked difference in the total number of correct answers in the pre-tests and re-tests of either Class A or Class B.

In Class A there were more correct answers for every question in the re-tests than in the pre-tests with one exception. This question had the same number of correct answers in both tests.

In Class B there were only six questions having more correct answers in the re-tests than in the pre-tests. The increase in number of correct answers of the six questions ranged from one to two.

#### Comparisons of Questionnaires I and II

The results of Questionnaires I and II from Class A and Class B are shown in Table VIII. In comparing the results of Questionnaires I and II, Table VIII shows not a great difference in Questionnaire I of Class A and Class B. At this time neither class had received any textile

TABLE VIII Comparison of the Responses to  
Questionnaires I and II Given Classes A and B

Key Information Points	Number of Responses to Questionnaire I		Number of Responses to Questionnaire II	
	Class A	Class B	Class A	Class B
1. Purchased fabric. . . . .	13	9	13	7
2. Purchased fabric alone. . . .	2	4	13	7
3. Knowing fiber content . . . .	7	4	13	6
4. Knowing name of fabric. . . .	8	5	13	7
5. Knowing weave of fabric . . .	0	0	13	2
6. Distinguishing between firm and loose weaves. . . . .	9	7	13	7
7. Aware of design in fabric. . . . .	10	6	12	10
8. Knowing type of finish of fabric . . . . .	0	0	13	0
9. Knowing how color was applied to fabric . . . . .	0	2	13	1
10. Aware of colorfastness. . . .	6	6	13	6
11. Knowing that fabric was pre-shrunk. . . . .	2	5	12	2
12. Knowing that fabric had a label . . . . .	8	4	12	9

instruction. Numbers 1, 7, and 12 of the key information points show that Class A had more students with these particular experiences than Class B. Four more students in Class A had purchased fabrics previous to the teaching of the unit than in Class B. Four more students in Class A were aware of design in the fabric, and four more students knew whether the fabric had a label than in Class B.

Numbers 9 and 11 of the information points show that Class B had two more students knowing how color was applied to the fabric, and three more students knowing whether the fabric was pre-shrunk than did students of Class A before receiving fabric instruction.

Table VIII also shows a great difference in the responses to Questionnaire II of Class A and Class B. Class A showed more positive results in each information point listed than Class B.

No one in Class A had help in purchasing their fabrics as compared with six persons receiving help in Class B. Numbers 7 and 12 show the most comparable results in the two classes. Twelve students in Class A were aware of design and ten students in Class B were aware of this. All members of Class A knew whether the fabric had a label, and nine members of Class B knew this.

From Class B, there was a slight increase in the number of students giving positive answers to six questions in Questionnaire II over Questionnaire I. The largest increase shown was that of number 12, pertaining to labels. In this case there were five more students aware of labels after their purchase of fabrics. It was probable that they became aware of the label during the purchasing of their fabrics, since no instruction had been given them. Several of the students from both Class A and Class B purchased their fabrics from the same store. It is

probable that the salespersons became aware of the students from Class A desiring label information, therefore, relaying this same information to students of Class B.

Table VIII also shows that from Class B the same number of students were aware of weave differences and colorfastness during their purchase of fabrics for class as were aware of these during their previous purchases.

There were fewer students answering numbers 1, 9, and 11 from Questionnaire II than answering these in Questionnaire I.

The greatest differences are shown in the results of Questionnaires I and II of Class A and of Questionnaire II of Class A and Class B. There were more positive answers to all numbers in Questionnaire II than in Questionnaire I of Class A. There were also more positive answers in Questionnaire II of Class A than in the same questionnaire of Class B. The most outstanding difference seen in the first and second questionnaire of Class A and Class B were in numbers 5 and 8. Both classes had no students knowing the weave of the fabric or the type of finish of the fabric in Questionnaire I. Responses of Questionnaire II showed that Class A had 13 students knowing the weave of the fabric as compared with two students knowing this in Class B. Class A also had 13 students knowing the type of finish, as compared with no students in Class B knowing the type of finish of their fabrics.

#### Observations Made During the Questioning and Teaching Period

After the pre-tests and first questionnaires were given to Class A and Class B, voluntary comments of the students from each class were noted. There was no organized class discussion after the tests and questionnaires were given, and answers to questions concerning facts



about fabrics were not given at that time.

The general comments after the pre-tests and first questionnaires of both Classes A and B held primarily the same information. Students from both classes seemed to realize their lack of awareness of fabrics and fabric quality. A few of the comments noted most often were:

"I found out that I didn't know as much about materials as I thought I did."

"I found out that I had to learn a lot more about materials before I start sewing."

"There is a lot more to the material than I thought there was."

"I just didn't know anything about materials."

"I didn't think there was much to know about materials, but I found out that I had a lot to learn."

The voluntary comments noted after the re-tests indicated that students from Class A felt that they had learned more about fabrics than they had known before the unit was taught. A few of the comments noted most often were:

"Easier than before; I knew more about material."

"I didn't know anything about material before; I do now."

"Easier because we had studied it and learned more about materials."

"Much easier than the first test; we know something about it now."

"I've learned to look at materials better."

"I know more about materials now than I did last time."

Voluntary comments noted after the re-tests of Class B indicated that the students felt that they still knew little about fabrics.

"I don't know any more about this now than I did before."

"I got a few more this time because Mother and I bought some material Saturday."



"I don't know a thing about materials."

"We have still got a lot to learn about fabrics."

Students from Class A verbally verified that they had learned several factors from the unit which they used when selecting their fabrics. During the class discussion about the actual selection of students' fabrics, all fabric qualities listed in Questionnaire II were mentioned as characteristics they had looked for when selecting their fabrics. In addition to those, several other points mentioned were:

"To test the fabric before buying."

"If it fitted the purpose I would use it for."

"To see if the design were printed straight on the material."

"How to get a good grade of material."

"To feel the material."

"If the material was embossed."

Discussion of the Results of the Pre-tests, Questionnaires, Re-tests, Observations, and Comments of Class A and Class B

The results of the pre-tests from Class A and Class B were similar, but indicate that Class B had a slightly greater knowledge of the questions asked. Class A had a slightly lower number of correct answers and about half as many incorrect answers as did Class B.

Responses of the re-tests of Class A showed a marked increase in the number of correct answers, a total of 195 more correct answers than those of their pre-tests. They also showed a decided decrease in the number of incorrect answers and answers not given.

The re-tests of Class A also showed a total of 185 more correct answers than those of Class B. There were only nine incorrect answers from Class A and 44 incorrect answers from Class B. Only one answer was

not given in Class A as compared with 141 answers not given in Class B.

The second questionnaire of Class A showed a marked increase in the total knowledge of the fabrics purchased for class with that of fabrics they had previously purchased. Questionnaire II of Class A also showed a great difference over Questionnaire II of Class B with regard to this same information.

There was no great difference shown in the response of the first and second questionnaire of Class B.

The compilation of comments of Questionnaire II of Class A showed a considerable improvement in their use of fabric terms over those used in Questionnaire I. They were also superior to those comments used by Class B in Questionnaire II.

There was no great difference seen in the type of comments used in the second questionnaire of Class B than in the first questionnaire of the same class. The greatest difference seen in the second questionnaire of Class B was the less learned use of fabric terms as compared with those used in the second questionnaire of Class A.

The voluntary comments from both classes, noted after the pre-tests were similar in most cases. The voluntary comments noted after the re-tests indicated that students from Class A felt that they had learned more about fabrics than they had known before the unit was taught, and that students from Class B felt that they still knew little about fabrics.

The comments noted from the class discussions concerning the three questions asked after the second questionnaire shows a marked difference in Class A over Class B. Class A included all ten factors pertaining to the fabric itself, which had been used in the questionnaire. Furthermore, they added several characteristics to those they had looked

for in the fabric when purchasing it. Several of these additional factors that were stated are: "bad or torn places," "Sanforized," "mercerized," "yarn dyeing," "too much sizing," "crease resistance," "width of material," "price," "if material raveled easily," "permanent finish," "amount of shrinkage," and "if fabric would launder and iron good."

Class B had only one student to mention "design, finish, colorfast, and easy to wrinkle" in what she looked for in her fabric. One other student who mentioned "permanent finish, colorfast, and shrinkage" had purchased her fabric with a student from Class A. "Cotton" was mentioned twice and "shrinkage" once in the remaining discussion of the questions in Class B.

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

To study the teaching effectiveness of a cotton fabric selection unit upon the fabric selection practices of ninth grade homemaking students, a cotton fabric selection unit was planned and taught to 13 ninth grade homemaking students at Denton School in the Piedmont section of North Carolina.

In order to make the study more accurate, a comparison of Class A, the group instructed in the unit, was made with Class B, a group of ninth grade homemaking students not instructed in the unit.

Five short lessons were planned to teach those points which were felt basic to cotton fabric selection for ninth grade girls. The unit was planned to attempt to meet the needs of first year homemaking students for consumer information before purchasing fabrics for garment construction.

The major objective of the unit was to increase the girls' ability and judgment in selecting and purchasing cotton fabrics.

Recognizing the importance of using students' interests and experiences to motivate learning, each lesson included demonstrations, student participation in class activities, and class discussions.

Lesson I was planned to develop student knowledge of the relation of cotton fibers to the construction of cotton yarns, and to gain student interest in the relation of the yarn to the fabric.

Lesson II was planned to develop the ability to recognize simple

weaves and to associate the characteristics of these weaves with the qualities desired in fabric performance.

Lesson III was planned to develop student awareness of the factors contributing to color in fabrics and to the desirability of fastness of colors.

Lesson IV was planned to develop an appreciation for the characteristics the finish gives the fabric and to enable the students to identify several cotton fabrics.

Lesson V was planned to be taught as a summarization of the unit and to direct emphasis on the students' developing an ability to select fabrics which are best suited to the purpose of their use.

In order to study the teaching effectiveness of the unit, it was necessary to obtain information from each student concerning her previous knowledge of fabrics before the unit was taught.

A pre-test consisting of 15 questions pertaining to cotton fabrics and a questionnaire inquiring into the students' previous experience and knowledge of factors pertaining to the fabrics they had last purchased were given to both classes before the unit was taught.

The results of the pre-tests from Class A and Class B were similar. This indicates that before the unit was taught, both classes held primarily the same information. The responses of the first questionnaire indicated that Class A had slightly more knowledge in some of the factors pertaining to fabric selection, and that Class B had slightly more knowledge in other factors, but with not too great a difference in the total results.

After the pre-tests and first questionnaires were given, voluntary comments made by the students from both classes concerning their

knowledge of facts pertaining to fabrics were noted. The comments from both classes were similar in most cases. Those made by students of both classes after the pre-tests and first questionnaires indicated that the students themselves were aware of their personal shortcomings concerning fabric knowledge.

The unit was taught only to Class A. Responses of the class and individual students were observed closely and all instances indicating unusual student reactions were carefully noted. Verbal inquiries and comments about fabric qualities and students' active participation in the fabric study during the unit showed the keen interest aroused in the students of Class A. Observations made in each lesson of the fabric selection unit indicated that the students had acquired a knowledge and appreciation of the factors presented in the unit.

For comparison with the pre-tests and first questionnaires, a re-test on the unit and a final questionnaire pertaining to the fabric purchased for class, were given to measure the effectiveness of the unit.

There was not a great difference shown in the pre-tests and re-tests of Class B. The greatest differences were shown in the pre-tests and re-tests of Class A. From a total of 234 possible answers there were 185 more correct answers, 11 fewer incorrect answers, and 175 fewer answers not given in the re-tests than in their pre-tests.

There was also a great difference in the results of the re-tests of Class A and Class B. Class A had a marked increase in the total number of correct answers, a decided decrease in the total number of incorrect answers and answers not given over those of Class B. Class A had a total of 224 correct answers. This was 175 more correct answers than the 49 correct answers given by Class B.



After the re-tests were given, comments made by the students of both classes concerning their fabric knowledge were noted. The voluntary comments of both classes after the re-tests indicated that the students from Class A felt that they had learned more about fabrics than they had known before the unit was taught. Comments from students of Class B indicated that they felt they still knew little about fabrics.

The second questionnaire was given to Class A to obtain information concerning the knowledge each student had acquired from the unit and through the purchasing of her fabric.

The results of the second questionnaire given to Class A showed a marked difference over Class B in the total knowledge of the fabrics purchased.

The compilation of comments of Questionnaire II of Class A showed a considerable improvement in the use of fabric terms over those used in Questionnaire I. They were also superior to the comments used by Class B in Questionnaire II.

There was no great difference seen in the type of comments used in the second questionnaire of Class B than in the first questionnaire of the same class. The greatest difference seen in the second questionnaire of Class B was the less learned use of fabric terms as compared with those used in the second questionnaire of Class A.

The comments made by the students from both classes concerning the three questions discussed after the second questionnaire provided evidence of the success of the unit. Class A included all ten factors pertaining to the fabric itself, which had been used in the questionnaire. Furthermore, they added several characteristics to those they had looked for in the fabric when purchasing it. Several of these

additional factors that were stated are: "Sanforized," "mercerized," "yarn dyeing," "too much sizing," "crease resistance," "width of material," "price," "if fabric raveled easily," "permanent finish," "amount of shrinkage," and "if fabric would launder and iron good."

Class B had only one student to mention "design, finish, colorfast, and easy to wrinkle" in what she looked for in her fabric. One other student who mentioned "permanent finish, colorfast, and shrinkage" had purchased her fabric with a student from Class A. "Cotton" was mentioned twice and "shrinkage" once in the remaining discussion of the questions in Class B.

### Conclusions

It is concluded that the cotton fabric selection unit was effective in increasing the girls' judgment and ability in fabric selection and purchasing as was evidenced by:

1. The great improvement in the results of the re-tests over the pre-tests of Class A.
2. The improvement of the results of the re-tests of Class A over the re-tests of Class B.
3. The increase in knowledge shown by the results of the first and second questionnaires of Class A.
4. The greater knowledge shown in the second questionnaire of Class A than of Class B.
5. The more learned use of fabric terms used by Class A in Questionnaire II than those terms used by Class B in the same questionnaire.
6. The fact that Class A looked for more fabric properties during the selection and purchasing of the fabric than Class B.

7. The increased amount of knowledge used by Class A in consulting salespersons' information in selecting their fabrics over the knowledge used by Class B in selecting their fabric.
8. Verbal verification by the students of Class A of the information they had acquired from the unit in telling the facts they had learned from the unit used when selecting their fabrics.

Results of the study indicate that after the re-tests and second questionnaires were given, Class A had a better understanding of factors considered important in fabric selection than did Class B. Class A also showed a greater appreciation of fabric selection problems. They also recognized the characteristics of a fabric which would make it satisfactory or unsatisfactory.

Findings of the study also indicate that students receiving fabric selection instruction have more confidence in making their own selections without help than do students not receiving the same instruction. This was evidenced by all members of Class A purchasing their fabrics without help and by only seven members of Class B making their purchase without help.

The implications of the tests and questionnaires of Class B are that students not receiving fabric instruction do not gain the information considered necessary in fabric selection through the purchase of fabric alone.

Significant comments made by the students about the pre-tests and questionnaires indicated that these instruments were of value in motivating the girls' interest in learning fabric facts which they

realized that they did not know.

Several student reactions during the teaching of the five lessons of the unit emphasize the importance of focusing attention upon the teaching points by the use of various teaching tools and teaching methods. Demonstrations, student participation in class activities, display of actual fabrics, garments, and visual teaching aids were most helpful in attaining the goals of each lesson. They made the fabric selection unit effective and improved the fabric selection practices of these ninth grade girls.

The indications shown by the improvement in the responses of Class A to the tests and the questionnaires, along with the comments indicating improvement in selection and terminology, are direct evidence that it is possible to present such textile facts to students of ninth grade level with effective results.

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## APPENDIX

## EXHIBIT 1

## Plan of Lesson I

Teacher Objective	Problem and Activity
1. To develop student knowledge of the relation of cotton fibers to the construction of cotton yarns.	<p>1. How are cotton fibers made into yarns?</p> <p><u>Class Discussion:</u> Bulletin Board display: "This Little Cotton Goes to Market."</p> <p><u>Teacher Demonstration:</u></p> <ol style="list-style-type: none"> <li>Obtaining a single cotton fiber from raw cotton.</li> <li>Twisting raw cotton into a single strand.</li> </ol>
2. To gain student interest in the relation of the yarn to the fabric.	<p>2. How does the amount of twist of a yarn relate to its strength?</p> <p><u>Teacher Shows:</u></p> <ol style="list-style-type: none"> <li>The firm smoothness found in a tightly twisted yarn.</li> <li>The difficulty in breaking of a tightly twisted yarn.</li> <li>The softness and fuzzy ends found in a loosely twisted yarn.</li> <li>The ease in breaking of a loosely twisted yarn.</li> </ol> <p><u>Student Activity:</u></p> <ol style="list-style-type: none"> <li>Break a yarn before it is untwisted and one after it is untwisted. Determine which was harder to break; how the amount of twist affects the fabric.</li> <li>Compare a piece of batiste with a piece of gingham. Determine which has a finer texture.</li> <li>Compare a batiste yarn with a gingham yarn. Determine which is finer.</li> </ol>

## EXHIBIT 2

## Plan of Lesson II

Teacher Objective	Problem and Activity
1. To develop student ability to recognize: <ol style="list-style-type: none"> <li>plain and twill weaves and how they are constructed.</li> <li>characteristics of these weaves in relation to the expected performance of the fabric.</li> </ol>	1. What does weaving mean?  <u>Teacher Demonstration:</u> 1. Interlacing of yarns on a cigar box loom to form cloth.  2. How are the plain and twill weaves constructed?  <u>Teacher Demonstration:</u> 1. Interlacing of yarns on a "Weave-It" loom to form the plain weave. 2. Interlacing of yarns to form the twill weave.  <u>Student Activity:</u> 1. Divide into two groups. 2. Interlace yarns on "Weave-It" loom to form the plain weave. 3. Interlace yarns on "Weave-It" loom to form the twill weave.
2. To develop student appreciation of the qualities of firmly and loosely woven fabrics.	3. What relation does the firmness of the weave have upon the expected performance of the fabric?  <u>Student Activity:</u> 1. Compare the weaves of these two fabrics (tightly woven chambray, loosely woven voile). <ol style="list-style-type: none"> <li>Hold these fabrics between you and the light.               <ol style="list-style-type: none"> <li>Can you see through them?</li> <li>Are there any thick or thin places?</li> <li>Are there any knots or flaws in them?</li> </ol> </li> <li>Rub a needle point across the warp yarns.               <ol style="list-style-type: none"> <li>Can you separate the yarns?</li> <li>Do the yarns return to their original position?</li> </ol> </li> <li>Repeat this with the filling yarns.</li> <li>Which fabric would you say was firmly woven? loosely woven?</li> </ol>

## EXHIBIT 3

## Plan of Lesson III

Teacher Objective	Problem and Activity
1. To develop student awareness of factors contributing to color in fabrics.	<p data-bbox="754 426 1307 451">1. How are colors applied to fabrics?</p> <p data-bbox="812 481 1016 506"><u>Teacher Shows:</u></p> <p data-bbox="812 510 1307 618">1. A piece of bright red Indian-head and asks class to look at it and tell what is first noticed about it.</p> <p data-bbox="812 654 1059 679"><u>Class Discussion:</u></p> <p data-bbox="812 683 1318 708">1. The types of dyeing of fabrics.</p> <p data-bbox="812 738 1323 763"><u>Teacher Shows Fabrics Illustrating:</u></p> <p data-bbox="812 767 1107 875">1. Dyeing a. piece dyeing b. yarn dyeing 2. Printing</p> <p data-bbox="812 912 1059 936"><u>Class Discussion:</u></p> <p data-bbox="812 940 1323 1049">1. The difference in dyeing and printing of fabrics. 2. The advantages or disadvantages of each method.</p> <p data-bbox="812 1083 1323 1108"><u>Teacher Shows Fabrics Illustrating:</u></p> <p data-bbox="812 1111 1307 1277">1. Designs that are printed straight on the length of the fabric. 2. Designs that are not printed straight on the length of the fabric.</p> <p data-bbox="812 1313 1059 1338"><u>Class Discussion:</u></p> <p data-bbox="812 1342 1323 1481">1. The desirability of having designs that are printed straight on the fabric with regard to pattern placement and construction.</p>
2. To develop student awareness of the importance of color fastness in a fabric.	<p data-bbox="762 1515 1287 1570">2. What does color fast in a fabric mean?</p>

## EXHIBIT 3 (Continued)

## Plan of Lesson III (Continued)

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Teacher Objective	Problem and Activity
	<u>Teacher Shows:</u> <ol style="list-style-type: none"><li data-bbox="799 448 1266 506">1. A dresser scarf illustrating colors not fast to light.</li><li data-bbox="799 506 1266 564">2. A blouse illustrating colors not fast to perspiration.</li><li data-bbox="799 564 1266 653">3. A garment and its original fabric illustrating colors not fast to laundering.</li><li data-bbox="799 653 1315 768">4. The bleeding of colors not fast to laundering by washing a piece of red costume cambric with a piece of white batiste.</li></ol> <u>Class Discussion:</u> <ol style="list-style-type: none"><li data-bbox="799 826 1315 911">1. The meaning and value of colors not fast to laundering, light, and perspiration.</li><li data-bbox="799 911 1241 942">2. The meaning of vat-dyeing.</li><li data-bbox="799 942 1260 1027">3. The information about color fastness which we desire on a label.</li></ol>

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## EXHIBIT 4

## Plan of Lesson IV

Teacher Objective	Problem and Activity
1. To develop student appreciation for the characteristics the finish imparts to the fabric.	1. What are some finishes most commonly found on cotton fabrics?
	<u>Teacher Shows Fabrics Illustrating:</u>
	1. Mercerizing before and after washing. 2. Sizing before and after washing. 3. Embossing before and after washing. 4. Crease resistance before and after crushing. 5. Sanforizing before and after washing.
	<u>Class Discussion:</u>
	1. The advantages or disadvantages of these finishes.
	<u>Teacher Shows:</u>
	1. A piece of fabric which had been marked for shrinkage testing and had shrunk $\frac{1}{4}$ inch per 6 inches of the warp yarns of the fabric.
	<u>Student Activity:</u>
	1. Calculate the amount of shrinkage in one yard of this fabric. 2. Approximate the amount of shrinkage in a dress of this fabric.
2. To develop student knowledge in fabric identification of several cotton fabrics.	2. What are certain characteristics of different fabrics which may help to identify them?
	<u>Student Activity:</u>
	1. Identify the fabrics on display by the descriptions on the mimeographed sheet.

## EXHIBIT 5

## Plan of Lesson V

Teacher Objective	Problem and Activity
1. To develop student ability to select fabrics which are best suited to the purpose of their use.	1. How does the use of a fabric determine its choice?  <u>Class Discussion:</u> 1. The amount of "wear and tear" which will be made on: a. summer party dress b. shorts c. school dress 2. The points we would look for in a fabric concerning: a. appearance b. durability c. comfort d. quality
2. To develop student appreciation for information which may be found on fabric labels.	2. How may we supplement our information about the fabric?  <u>Class Discussion:</u> 1. The desirability of finding and reading fabric labels. 2. The value of the information found on these labels, tags, and stickers which were obtained from bolts of fabric.  <u>Assignment:</u> Select and purchase a cotton fabric suitable for a school dress to be made in this class.

## EXHIBIT 6

Fabric Selection Test  
Home Economics I  
Denton High School

Name \_\_\_\_\_ Date \_\_\_\_\_

Fill in the blank (s) in each sentence with the word (s) which will make the statement true.

1. The method of cloth construction in which at least two sets of yarns are interlaced at right angles is called \_\_\_\_\_.
2. The yarn running parallel to the selvage is called \_\_\_\_\_.
3. Color is applied to cloth by the processes of \_\_\_\_\_ or \_\_\_\_\_.
4. A chemical process which adds luster and strength to fabrics is called \_\_\_\_\_.
5. The process of pre-shrinking a fabric guaranteeing a shrinkage of not more than one per cent is called \_\_\_\_\_.
6. To be serviceable the finish of a fabric should be \_\_\_\_\_.
7. When a fabric is color fast it will not \_\_\_\_\_.
8. A color of good quality is fast to \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
9. Fabrics purchased for a cool dress may have a \_\_\_\_\_ weave.
10. Fabrics which will have much strain should be \_\_\_\_\_ woven.
11. The name of the weave in this fabric is \_\_\_\_\_.
12. This fabric is \_\_\_\_\_ woven.
13. The name of this fabric is \_\_\_\_\_.
14. The color is applied to this fabric by \_\_\_\_\_.
15. This fabric is likely to \_\_\_\_\_ during cutting and constructing.

## EXHIBIT 7

Information on the Last Fabric You Purchased  
Home Economics I  
Denton High School

Name \_\_\_\_\_ Date \_\_\_\_\_

1. Have you purchased material for a garment before? \_\_\_\_\_.
2. Did you select the material alone? \_\_\_\_\_.
3. Did someone help you select the material? \_\_\_\_\_ Who? \_\_\_\_\_.
4. For what garment did you select the material? \_\_\_\_\_.
5. What kind of material was it? \_\_\_\_\_.
6. What was the name of the material? \_\_\_\_\_.
7. What was the weave of the material? \_\_\_\_\_.
8. Was the material firmly or loosely woven? \_\_\_\_\_.
9. What type of design was used on the material? \_\_\_\_\_.
10. Was the design good? \_\_\_\_\_. How do you know? \_\_\_\_\_.
11. What type of finish did the material have? \_\_\_\_\_.
- Was it permanent? \_\_\_\_\_. How do you know? \_\_\_\_\_.
12. How was the color applied to the material? \_\_\_\_\_.
13. Was the material color fast to washing? \_\_\_\_\_.
- Light? \_\_\_\_\_. How do you know? \_\_\_\_\_.
14. Was the material reliably pre-shrunk? \_\_\_\_\_.
- How do you know? \_\_\_\_\_.
15. Did the material have a label? \_\_\_\_\_. Did you read it? \_\_\_\_.
- What did it tell you? \_\_\_\_\_.

## EXHIBIT 8

Information on Fabric Purchased for Class  
Home Economics I  
Denton High School

Name \_\_\_\_\_ Date \_\_\_\_\_.

1. Did you select the material alone? \_\_\_\_\_.
2. Did someone help you select the material? \_\_\_\_\_ Who? \_\_\_\_\_.
3. What is the fiber content of the material? \_\_\_\_\_.
4. What is the name of the material? \_\_\_\_\_.
5. What is the weave of the material? \_\_\_\_\_.
6. Is the material firmly or loosely woven? \_\_\_\_\_.
7. What type of design does the material have? \_\_\_\_\_.
8. Is the design good? \_\_\_\_\_. Why? \_\_\_\_\_.
9. How is the color applied to the material? \_\_\_\_\_.
10. Is the material color fast to washing? \_\_\_\_\_.  
Light? \_\_\_\_\_. How do you know? \_\_\_\_\_.
11. What type of finish does the material have? \_\_\_\_\_.  
Is the finish permanent? \_\_\_\_\_. How do you know? \_\_\_\_\_  
\_\_\_\_\_.
12. Is the material reliably pre-shrunk? \_\_\_\_\_. How do you know?  
\_\_\_\_\_.
13. Did the material have a label? \_\_\_\_\_. Did you read it? \_\_\_\_\_.  
Was the information found with the material of value to you in  
selecting your material? \_\_\_\_\_. What did it tell you? \_\_\_\_\_  
\_\_\_\_\_.
14. Does your material ravel easily? \_\_\_\_\_. How can you tell? \_\_\_\_\_  
\_\_\_\_\_.
15. Is the material suitable for the dress you will make? \_\_\_\_\_.  
Why? \_\_\_\_\_.