

THE EFFECTIVENESS OF FILMS IN SUMMARIZING
FOOD UNITS FOR HOME MAKING CLASSES

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FOOD UNITS FOR HOMEMAKING CLASSES

THESIS

Presented to the Graduate Council of the
North Texas State College in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

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August, 1952

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INTRODUCTION

The growing interest in films as a means of teaching has aroused educators to study the effectiveness of motion pictures for various types of classroom teaching.

A study to determine the most effective way of using instructional films was made by Sumstine (1918)¹ in the Peabody High School, Pittsburgh, Pennsylvania. The investigator used three groups in the study with about 120 students in each group. "Farming with Du Pont Dynamite" was taught to the first group by means of a film which had no verbal continuity, to the second group by lecture and the film, and to the third group by the lecture method alone. Tests were given to the three groups at the end of twenty-four hours, at the end of ten days, and at the end of three months. Results indicated that the group which saw the motion picture had approximately 20 per cent gain at the end of three months. Sumstine's study shows the recall value of the film after a period of time, when the film is used to teach new subject matter. The study does not show the effectiveness of the film in summarizing a unit.

¹D. R. Sumstine, "Educational Research and Statistics-- A Comparative Study of Visual Instruction in High School," School and Society, VIII (1918), 253-58.

The purpose of the investigation undertaken by Jayne (1936)² was to determine how much more students gained from films which have been integrated with the teaching unit than they do from non-integrated films. Seventy-nine sixth-grade and eighty ninth-grade students of Stoughton, Wisconsin, participated in the study. The first group was shown the film two weeks before the unit of work was started; the second group was shown the film at the beginning of the unit; and the third group was shown the film after the unit was under way. Results of the pre- and post-tests indicated an advantage in showing the film at the beginning of the unit.

The value of the motion picture in teaching scientific facts was investigated by Baker (1943)³ in Wittenberg College. In one group of students, the film was used without preparation; the second group was prepared for the film before it was shown; the third, or control group, had a study period and did not see the film. The groups were tested for factual information, for understanding of scientific terms, and for ability to make application of the facts and principles studied. The film group showed a gain over the study period group, and the film with preparation over the non-preparation group. At the end of the

²C. D. Jayne, "The Integrated Versus the Non-Integrated Use of Motion Picture in the Classroom," Journal of Experimental Education, V (1936), 7-17.

³W. Kenneth Baker, "An Experimental Study of Effectiveness of Motion Picture in Teaching General Science," Educational Screen, XXII (1943), 27-30.

study, the students wrote a summary paragraph. The motion picture summary indicated that the film was more effective than the teacher-pupil summary.

In a study undertaken to determine how much a selected group of Shakespearean films may affect the attitudes of an English class chosen at random, Hirsch (1947)⁴ instructed experimental and control groups of approximately sixty students for eight weeks at the San Francisco High School in California. To determine any change in attitudes of the students during the study, the Thurston scale was administered to them before and after the study of Shakespeare. The experimental group which was nearly neutral in attitudes at first, shifted to a degree which left no doubt about an improvement of attitudes. The shift was very slight, and the tests did not show whether the students liked the subject or not. Since one of the highest grades was made by a student with an unfavorable attitude toward Shakespeare, Hirsch concluded that some students can dislike a subject and still make a good grade. He pointed out that the motion picture appeared to be one of the best tools a teacher could use to achieve success in the stimulation and motivation of students toward a more favorable attitude.

Brown (1950)⁵ made a study in the Andrews High School, Andrews, Texas, to determine the effect of group relationship

⁴Richard S. Hirsch, "Moving Attitudes with Motion Pictures," Educational Screen, XXVIII (1947), 446-60.

⁵Mary A. Brown, "Effect of Relationship Films on Attitudes of Homemaking Girls," (Unpublished Master's Thesis, Department of Home Economics, North Texas State College, 1950).

films on the attitude of thirty-two homemaking girls. The Herrington attitude scale was given to five homemaking classes to determine the attitudes of the students toward various group relationships. Using films for instructional purposes, each of the five homemaking classes planned and carried out a unit in group relationships. Herrington's attitude scale was given again at the end of the units. Statistical treatment of data showed no significant difference in attitudes before and after the unit.

To establish the possible value of the sound film as compared with the demonstration, Clark (1931)⁶ made a study with three hundred students studying physical science in the New York University from January, 1931 to February, 1932. The students were divided equally between the experimental groups and the control groups on the basis of Army Alpha Test and O'Conner Vocabulary Test. Students were rotated between the experimental and control groups so that they would have the learning experiences offered in each group. The demonstration used with the control groups resembled as nearly as possible the film shown to the experimental group. Classes were taught by the regular teachers. The results showed the film gains to be 7 per cent and the demonstration gains to be 4 per cent. Clark judged these figures to indicate that sound films have a slight advantage in stimulating interest and sustaining

⁶Clarence C. Clark, "Sound Motion Pictures As An Aid in Classroom Teaching," School Review, XL (1932), 669-81.

attention. This fact suggests that films might be used effectively to summarize homemaking units.

In 1951 Phillips⁷ conducted a study using films in the Gaston High School, Joinerville, Texas. The purpose of this study was to determine the comparative effectiveness of educational sound films and the demonstration method in teaching the quick-mix method of cake making. The first and second year homemaking girls were divided into two equal groups, experimental and control, with nineteen in each group. Pre-tests were given to determine the extent of previously acquired knowledge of the subject. Through demonstrations and discussion in one group, and films in the other, the two groups learned methods of mixing cakes. At the end of the unit, each student baked a cake and compared it in appearance, texture, and flavor with other cakes baked. Results of the final tests and of the scored cakes indicated that the film was as effective in teaching the quick cake-mix method as the demonstration method. All groups preferred the demonstration method at the beginning of the study. One third of the group expressed preference for films at the close of the experiment. Phillip's investigation showed that a teacher may teach cake-making as effectively by films as by demonstrations.

Experiments have been conducted to determine the results of using films in changing attitudes, in giving demonstrations,

⁷Joe Marie Phillips, "The Film Versus the Demonstration Method in Teaching Cake Mixing to High School Girls," (Unpublished Master's Thesis, Department of Home Economics, North Texas State College, 1951).

and in teaching facts. The conclusions drawn from these studies provide a growing source of information which is valuable to the investigator who is contemplating the use of films or who is already using them.

Only two of the studies summarized here used films in the teaching of homemaking classes. It is the purpose of this study to compare the effectiveness of the film method with the pupil-teacher discussion method for summarizing certain food units.

PROCEDURE

The data for determining the effectiveness of the film in summarizing units were obtained from students of Homemaking I, II, and III at the Seymour High School, Seymour, Texas, during the school year 1951-1952.

First-, second-, and third-year homemaking classes were divided into two groups with an equal number of students in each group. The groups were equated on the basis of personal background, homemaking achievement, homemaking training, and school achievement.

Guidance records of each student were consulted to obtain information concerning nationality and language spoken in the home. Six Bohemian girls were paired with each other in the freshman class.

In order to determine the number of years of homemaking the students had completed, the permanent high school records were used. The forty-three students in the first year homemaking classes were freshmen without previous homemaking experience. With the exception of four girls who were juniors, the thirty students in the second year homemaking classes were sophomores, with one year's experience. The fourteen students in the third year homemaking class were juniors with two years' experience.

It was necessary to select instructional units that would lend themselves well to an investigation of the effectiveness of films for summarizing a unit. Such units needed to be definite in scope, exact in content, and adequately treated by available films. The matter of providing films presented an additional problem. Films had to be selected on the basis of their availability for the class schedule, and their suitability for this study, as well as on the basis of cost.

Three available films in the field of high school home-making were selected for use in the present study: (1) "Cookery Terms", (2) "Cookery Measurements", and (3) "Home Cookery of Fish". Evaluation was made of the films through the use of Dale's standards for evaluating audio-visual materials. These standards are: the content gives a true picture of the facts; the materials contribute meaningful content to the topic under study; the material is appropriate for the age, intelligence, and experience of the learners.

Since standardized tests² of cookery terms, cookery measurements, and fish cookery were not available, questions

¹Edgar Dale, Audio-Visual Method in Teaching, p. 500.

²See Appendix A, Appendix B, and Appendix C.

were constructed to cover the exact content of these units. Sources of subject matter for the questions were a preview of the films and instructional material which accompanied the films. These tests which contained fifty true-false statements covered the following principles, processes, and factual content:

1. Cookery terms - cream, stir, stiffly beaten egg whites, fold, frosting, broil, sear, soft ball stage, knead, stew, simmer, dredge, braise, roast, marinate, marinade, white sauce, scald, scallop, au gratin, jelly test, glossary, and appendix.

2. Cookery measurements - liquid, fat, dry ingredients, measuring equipment, and accurate measurements.

3. Fish cookery - selecting and care of fish; preparing fish for cooking; boiling, broiling and baking.

Before the opening of school, the two homemaking teachers and the principal had met in conferences to decide on the major units which were to make up the semester's work. Food and nutrition, child development, interior decoration, clothing and related arts, and crafts were the units chosen. After the program had been blocked into units of work, the teachers decided together which units each would teach.

Since students are regularly scheduled for a whole year of homemaking, they were given their choice of the units for the first semester. At the beginning of the second semester,

they changed teachers and units. After the students made their selection of units, the student's interests and needs were determined by means of conferences and by their written preferences. The teacher discussed the proposed units with the mothers in order to determine that the units selected by the teacher and principal would contribute to the major objectives of the home. With the use of these suggestions, the year's outline of units was revised, and the semester's work was started.

Teacher's goals: In order to insure a constant program of work, each teacher set up goals for her area before the semester's work was outlined. These goals were: to provide experiences that would solve individual problems; to make unit content practical; to maintain classroom procedures that would encourage cooperation and independent thinking; to plan unit content that would contribute to the overall objectives of the home and the school.

Student's goals: At the beginning of the semester, the pupils and the teacher discussed the purposes and values of homemaking. To give further stimulus to the year's program, reports and talks were given by the third-year girls to the freshmen. The second-year girls reviewed the preceding year's units and pointed out the strength and weaknesses of the program. With this background, the students and the teacher planned goals for the semester. Some of these goals were:

1. Not to complain if I sometimes have to do more than my share of the work.

2. To plan my work so I can finish on time.
3. To look up the answers to questions I do not know, instead of asking the teacher.
4. To give some one else a chance to talk.
5. To overcome prejudices.
6. To work willingly.
7. To learn new skills in homemaking.

For the food units, the classes divided themselves into five family-size groups who worked and studied in the five unit kitchens. The general approach to the class activities was the problem-solving method. All of the students participated in each unit.

In order to have the overall program achieve the student's goal for the semester, the units on fish cookery, cooking terms, and cookery measurements were planned as integral parts of certain units. This made it possible to carry on this study and at the same time enrich the content of the related units.

At the beginning of the study, the teacher explained to the classes that, as a basis for her thesis, she needed to make a scientific study, and that the problem chosen for this study was that of finding out whether a film would summarize a unit as effectively as the technique of pupil-teacher discussion. She further explained that the units cookery terms, cookery measurements, and fish cookery would be studied.

The plan of procedure was worked out with each class. The students understood that during the course of each unit

they would work with cookery terms, cookery measurements, and fish cookery. Thereafter, each time a minor unit of work was outlined, plans were made for including the terms and measurements that were applicable. The development of the unit was guided in such a manner that every term and measurement under investigation was used sometime during the period allotted to the study.

The teacher's block plan for Homemaking I, presented in Appendix D, shows how cookery terms and measurements were introduced during the period of the study. It further shows the relation of the problems investigated to the units selected at the beginning of the semester.

Course content for Homemaking I and II: Before giving the tests, the teacher explained to the students that a pre-test would be administered to determine what previous knowledge they had of cookery terms and measurements. The results of the test would show which terms and measurements they needed to study. Furthermore, since some of the information in the units on cookery terms and measurements overlap, plans were made to give the pre-test on cookery terms to the class on the second day following the pre-test on measurements.

After the pre-test was given, the units on cookery terms and measurements were studied. Each group selected twelve questions from the pre-test which they wanted to consider during a planned study period. At the end of a study period, a volunteer from each group demonstrated a method of measuring chosen

ingredients or defined a term. After planning the menus of each lesson, the group selected cookery terms and measurements that would be used in preparing the meal. Two students from each group explained the correct terms and measurements selected from the menu. While the luncheon menu was being prepared, the teacher observed the class to determine whether or not the students used proper measuring techniques and correct terms.

Upon the completion of the unit, a student showed the film "Cookery Measurements" to the experimental group in the dining room. At the same time, in the classroom, the control group and the teacher summarized the unit by discussing correct methods to use in measuring certain ingredients. After they had viewed the film, the experimental group was brought back to the classroom. The tests on cookery measurements which had been given previously were administered again to both groups.

The same procedures employed in summarizing the unit and giving the test on cookery measurements were used to summarize and test the unit on cookery terms. During the study of the units on cookery terms and cookery measurements, the Homemaking I students prepared a luncheon for several teachers, a luncheon for a selected family, a thirty minute oven meal, baked quick breads, and prepared vegetable salads.

Appendix D shows the relationship of the units to the semester's work.

Except for some changes in class projects, the content of the units on cookery terms and measurements for Homemaking II was essentially the same as that for Homemaking I. The first semester students entertained a third grade class, planned and prepared a luncheon for a four year old boy, baked cream pies, prepared and baked yeast breads, prepared fruit salads, and prepared a thirty minute oven dinner. An outline of the units for Homemaking II is presented in Appendix E.

With a few exceptions, the first and second semester of Homemaking II used the same program of work. Instead of entertaining the third grade, the second semester class used the same menu for a children's party. Instead of a Halloween party, they planned a Valentine party. Finally, instead of entertaining the Future Homemakers of America district meeting, they served the School Board dinner. This project required as much planning, preparation, and responsibility as the one used the previous semester.

Fish cookery, Homemaking I and II: The first and second year students studied the same unit on fish cookery. Identical methods were employed in giving the pre-test for this unit as for the other units. The class studied the principles of cooking fish, and on the following day they prepared the fish and evaluated their work.

Lessons on three ways of preparing fish proved inadequate for learning the processes of fish cookery. Since time

was limited and the students needed to study meat cookery, the next unit was planned to include cooking methods for meats which were applicable to fish. As the unit progressed, the classes compared the preparation of meat with the preparation of fish.

The unit on fish cookery was summarized in the same manner as the other units. Following the summarizations, the post test was given. The plans for fish cookery units are presented in Appendix D and Appendix E.

Food units, Homemaking III: The third-year homemaking girls were organized as an experimental group set up by the teacher and the principal. They did not follow the general procedure used in the classes in Homemaking I and II, but followed a weekly procedure similar to the one given in Figure 3.

The girls divided themselves into groups of four, each group using one of the unit kitchens. Each girl set up goals for herself as she worked independently toward joint group projects. The major projects centered about meal preparation and table service.

When the students were ready to cook, they pooled their individual dishes and served a luncheon at noon in the dining room. In this way, each saw how her own dish was related to a complete meal.

The students discussed their immediate problems with the teacher in individual conferences; then they prepared a

written work plan for the preparation of the food they were planning to cook. The teacher checked these plans from the standpoint of appropriateness to the menu, cost, and method of preparing. After completing a problem, the student wrote a summary of her work.

The procedure used in summarizing the units on cookery terms and cookery measurements, and in giving the respective tests was the same as that used in Homemaking I and II.

During the study of the fish cookery unit, the girls prepared fish by the three methods suggested in the unit. A pre- and post test was given at the beginning and end of this unit. The unit was summarized with the experimental group by using the film "Home Cookery of Fish", and for the control group by pupil-teacher discussion.

Monday	Tuesday	Wednesday	Thursday	Friday
Individual or group conference with teacher.	Planning. Gathering information.	Complete plans. Check plan with teacher. Preparation of luncheon.	Prepare and serve luncheon.	Write up summary of luncheon.

Fig. 1.--Typical week for a third-year class.

Statistical procedures used: Statistical treatment of the data included the calculation of the mean score, the difference between the means of the test scores, the standard

deviation of the scores from the means, the standard error of the mean, and the significance of a difference between the means.

The pre- and post tests contained fifty true and false statements. Each statement was given the value of one, the highest possible score being fifty. After the tests had been scored, it was necessary to use statistical methods to determine if the difference between the means of the pre- and post tests were real or statistically significant. The term "statistically significant" is used to mean that there is a difference between tests, groups, and compared classes which is due to factors other than chance.

The use of the raw score of the tests was used to compute the mean score. The mean score was found by adding the scores, and dividing the total sum by the number in the group. The formula is $M = EX/N$, where M is the mean, E is the total or sum of scores, X is the score, and N is the number of subjects.

The difference between the means of the two tests referred to as the "mean difference", was determined by subtracting the mean of the second test from the mean of the first.

$$Md = M_1 - M_2$$

M_1 is the mean of the post test, and

M_2 is the mean of the pre-test.

The standard deviation of the score difference between two groups of tests was determined by the following formula:

$$S = \sqrt{\frac{Ed^2}{N} - M_d^2}$$

where d = the difference between two paired scores.

Here E_d^2 is the sum of the squared pre- and post test score differences. From the result obtained by dividing this sum by N , a correction factor, the square of the mean difference M_d^2 , was subtracted. The square root of the remainder constitutes the standard deviation.

The standard error of the mean for a group was computed by dividing the standard deviation by the square root of $N - 1$. The formula used was:

$$S_m = \frac{S}{\sqrt{N - 1}}$$

This means that the standard deviation is divided by the square root of the number of subjects in the group less one.

The critical ratio, or t value, was computed to show whether a difference between two means was significant. This statistic was determined by dividing the difference between the means of the pre- and post tests by the standard error of the mean difference for these tests. The formula is:

$$C R = t = M_d / S_m \quad \text{Here } M_d \text{ is the difference between the pre- and post test means.}$$

The standard error of the difference between the means of two groups was determined by extracting the square root of the sums of the squares of the standard errors of the groups being compared.

$$S_D = S_{D_{M_1}} - S_{D_{M_2}} = \sqrt{S_{M_1}^2 + S_{M_2}^2}$$

$S_{M_1}^2$ = standard error of experimental group

$S_{M_2}^2$ = standard error of control group.

The critical ratio, or t value, to show the significance of a difference between the means of two groups, was found by dividing the difference between the means of the two groups by the standard error of the difference between their means.

$$C R = t = \frac{D}{S_D}$$

$D = M_2 - M_1 =$ Difference between the means of the experimental and control groups

After the t value had been computed, Fisher's "Table of F and T" was used to determine whether the difference between the groups being compared was large enough to be statistically significant. If the critical ratio was as large as Fisher's³ 5 per cent value for t, the difference between the groups was considered significant; if it was as large as the 1 per cent value, it was judged highly significant; and if it was less than 5 per cent, it was questionable.

³R. A. Fisher, Statistical Method for Research Workers, p. 89.

RESULTS

Table 1 shows the mean difference, the standard error of the difference, and the critical ratio for pre- and post test scores made by the three groups of homemaking students on the three units, cookery terms, cookery measurements, and fish cookery.

The control group of Homemaking I, in the unit on cookery terms, shows a mean difference of 10.24, a standard error of 1.930, and a critical ratio of 5.305 for the pre- and post tests. The critical ratio, which was greater than Fisher's t^1 value for seventeen subjects, indicated that this control group made significant gains in their knowledge of cookery terms. In Homemaking II, the control group had a mean difference of 16.43, a standard error of 2.220, and a critical ratio of 7.400 on the pre- and post test comparison. Since this critical ratio was greater than Fisher's t value of 2.131 for sixteen subjects, progress in learning made by this group was judged highly significant. Homemaking III, in the control group, had a mean difference of 7.14, a standard error of 1.576, and a critical ratio of 4.531. According to Fisher's t value of 2.447 for seven subjects, this ratio indicated a significant gain.

¹R. A. Fisher, Statistical Method for Research Workers, p. 89.

TABLE 1

MEAN DIFFERENCE, STANDARD ERROR OF DIFFERENCE, AND CRITICAL RATIO FOR PRE- AND POST TEST SCORES OF HOMEMAKING CLASSES DURING THREE UNITS

Units of Work	Groups	Homemaking I			Homemaking II			Homemaking III		
		M_d	S_{d_M}	CR	M_d	S_{d_M}	CR	M_d	S_{d_M}	CR
Cookery terms	Control	10.24	1.930	5.305	16.43	2.220	2.400	7.14	1.576	4.551
	Experimental	15.64	1.152	13.593	13.50	1.840	7.303	10.28	1.178	8.641
Cookery Measurements	Control	12.47	1.011	12.334	7.73	1.519	5.088	7.00	1.667	4.199
	Experimental	12.57	1.534	8.194	10.53	1.700	6.194	7.71	1.615	4.773
Fish Cookery	Control	11.94	1.131	10.557	12.80	1.321	9.682	6.14	1.301	4.704
	Experimental	13.35	1.369	9.751	11.53	1.120	10.294	8.29	1.803	7.645

Results show that each control group made significant gains in the knowledge of cookery terms. Homemaking II students had the greatest mean difference with Homemaking I students having greater mean differences than Homemaking III. The third year's lesser gain was probably due to previous lessons on cookery terms.

According to the t value, the experimental group made significant gains in the unit on cookery terms. For the Homemaking I class, the experimental group had a mean difference of 15.64, a standard error of 1.152, and a critical ratio of 13.593. This last value was also greater than the 1 per cent level of confidence.

The experimental group in Homemaking II, which had a critical ratio of 7.303, made gains comparable to Homemaking I. The experimental group in Homemaking III, with a mean difference of 10.28, a standard error of 1.178, and a critical ratio of 8.641, also made significant gains. With the exception of Homemaking II, the other two experimental groups had slightly greater mean differences than the control groups.

In the unit on cookery measurements, the control group, Homemaking I, had a mean difference of 12.47, a standard error of 1.011, and a critical ratio of 12.334. Since the critical ratio was greater than Fisher's t value,² the indicated gain was significant. Homemaking II, in the control group, had a mean difference of 7.73, a standard error of 1.519, and a critical ratio of 5.088. Since this was higher than 2.145, Fisher's

²Ibid.

5 per cent t value for fifteen subjects, the gain was considered significant. In Homemaking III, the mean difference between test scores was 7.00, the standard error, 1.667, and the critical ratio, 4.199. Since the critical ratio was greater than Fisher's t value,³ the gain was considered significant.

Results similar to those of the control groups were found for the experimental groups. The mean differences were small and were in favor of the experimental groups.

In the unit "Cookery Measurements", the gain of the experimental group in each of the classes was considered significant. Each group learned cookery measurements. Homemaking I, in this unit, had the highest mean difference with Homemaking III still having the smallest mean difference. The experimental group for Homemaking I which had a mean difference of 12.57, a standard error of 1.534, and a critical ratio of 8.194, made a significant gain in learning cookery measurements. In the same unit, the Homemaking II experimental group had a mean of 10.53 and a critical ratio of 6.194. This higher rate of gain was considered highly significant. The experimental group of Homemaking III with a critical ratio of 4.773 registered similar progress.

The mean difference of scores made in fish cookery by the control group, Homemaking I, was 11.94, the standard error was 1.131, and the critical ratio was 10.557, a very significant

³Ibid.

gain when compared with Fisher's 1 per cent value. In Homemaking II, the control group had a mean difference of 12.80, a standard error of 1.321, and a critical ratio of 10.557. When compared with Fisher's t value,⁴ this indicates significant progress in learning in this unit. The control group in Homemaking III had a mean difference of 6.14, a standard error of 1.301, and a critical ratio of 4.704. This "t" value was highly significant.

Homemaking II, the experimental group, with a mean difference of 11.53, a standard error of 1.120, and a critical ratio of 10.294, made significant gains on this same fish cookery unit. The critical ratio, 9.751, for the Homemaking I experimental group, was almost as large as the one for Homemaking II, and the critical ratio, 7.645, for the Homemaking III experimental group, although not as large as for the preceding groups, was still large enough to be high significant according to Fisher's t value. All three groups gained in knowledge of fish cookery. With the exception of Homemaking II, the experimental groups had slightly greater mean differences than the control groups.

In Table 2, there was a mean difference of 5.40 between the experimental and control groups in Homemaking I in the unit on cookery terms. When the standard error and the critical ratio were determined for this difference, it was found that the standard error of the difference was 2.011, and the critical ratio, 2.685. Since the latter figure was greater than the t.05 value,

⁴Ibid.

the gains made were considered highly significant. The lower mean score for the control group indicates that the experimental group made a greater gain.

In Homemaking II, the mean difference between the groups was 2.93, the standard error, 2.885, and the critical ratio, 1.019. Since this critical ratio was less than the 5 per cent t value, no significant gain was made on the part of either the control or the experimental group.

The experimental group in Homemaking III, showed a difference of 3.14, a standard error of 1.651, and a critical ratio of 1.901. The critical ratio was smaller than the t value 2.447, hence no significant gain was made for either group.

Statistics for the unit on cookery measurements show that the Homemaking I groups had a difference of 0.10, a standard error of 1.761, and a critical ratio of 0.057. Since this ratio was smaller than the t value, it was not considered to be significant.

In Homemaking II, the difference between the groups was 3.80, the standard error was 2.236, and the critical ratio was 1.252. The latter figure was smaller than the 5 per cent t value and the difference between the groups were insignificant.

The difference between the groups in Homemaking III was 0.71, the standard error was 2.292, and the critical ratio was 0.309. This ratio was smaller than the 5 per cent level of confidence.

TABLE 2

DIFFERENCE, STANDARD ERROR, AND CRITICAL RATIO SHOWING
THE SIGNIFICANCE OF THE MEAN DIFFERENCE BETWEEN
THE EXPERIMENTAL AND CONTROL GROUPS

Units	Statistical Terms	Homemaking I Control Vs. Experimental	Homemaking II Control Vs. Experimental	Homemaking III Control Vs. Experimental
Cookery terms	D	-5.40*	2.93	-3.14*
	S _d	2.011	2.885	1.651
	C R	2.685	1.019	1.901
Cookery measure- ments	D	-0.10*	-3.80*	-0.71*
	S _d	1.761	2.236	2.292
	C R	0.057	1.252	0.309
Fish cookery	D	-1.41*	1.27	-2.15*
	S _d	1.758	1.732	1.635
	C R	0.864	0.733	1.378

*A negative figure indicates that the experimental group had the higher mean.

In fish cookery, Homemaking I groups had a difference of 1.41, and a standard error of 1.758. Since the critical ratio of 0.864 was smaller than the t.05 value, the gain was not significant.

A difference of 1.27, a standard error of 1.732, and a critical ratio of 0.773 was found between the experimental and control group in Homemaking II. The critical ratio,

when compared with the 5 per cent t value was very insignificant.

The difference between the Homemaking III experimental and control groups was 2.15, the standard error, 1.635, and critical ratio, 1.378. This critical ratio was smaller than the 5 per cent level of confidence and was not significant.

A third comparison was made to determine if the differences in the class gains between Homemaking I, II, and III groups were significant. These gains were the combined gains of the experimental and control groups of each class. Comparisons of classes in the three units are shown in Table 3.

The mean difference for the comparative gains in knowledge of cookery terms made by Homemaking I and II students was 2.47, the standard error was 3.356, and the critical ratio was 0.378. The results between the classes in cookery measurements showed a difference of 3.70, a standard error of 2.828, and a critical ratio of 1.308. In fish cookery, the statistics for these same items were 0.14, 2.449, and 0.057, respectively. The critical ratios, in each instance, were less than the t value and indicated that no significant difference in gains was found.

In the unit on cookery terms, the difference between Homemaking II and III was 0.21, the standard error was 3.162, and the critical ratio was 0.066. The figures for the unit in cookery measurements were 3.09, 3.290, and 0.937 for the mean difference, standard error, and critical ratio, respectively.

TABLE 3

DIFFERENCE, STANDARD ERROR, AND CRITICAL RATIO SHOWING
THE SIGNIFICANCE OF THE MEAN DIFFERENCE BETWEEN
HOMEMAKING CLASSES ON THREE UNITS

Units	Statistical Terms	Homemaking I Versus Homemaking II	Homemaking II Versus Homemaking III	Homemaking I Versus Homemaking III
Cookery terms	D	2.47	-0.21*	2.26
	S _d	3.356	3.162	2.596
	C R	0.738	0.066	0.870
Cookery measure- ments	D	-3.70*	3.09	-0.61*
	S _d	2.828	3.200	2.871
	C R	1.308	0.937	0.211
Fish cookery	D	0.14	-0.88*	-0.64*
	S _d	2.449	2.380	2.310
	C R	0.057	0.369	0.272

*A negative figure indicates that the mean difference is in favor of the more advanced class.

Similar results for the unit on fish cookery showed a difference of 0.88, a standard error of 2.38, and a critical ratio of 0.369. Comparison of the three ratios with significant t values indicated that they were all smaller than the 5 per cent level of confidence.

A similar comparison was made between the gain of Homemaking I and III classes. In the unit on cookery terms, the

mean difference between the classes was 2.26, the standard error was 2.596, and the critical ratio was 0.870. Results for the unit on cookery measurements showed that the classes had a difference of 0.61, a standard error of 2.871, and a critical ratio of 0.211. In the unit on fish cookery, the figures were 0.64, 2.310, and 0.272, for the mean difference, the standard error, and the critical ratio, respectively. These critical ratios, in each instance, were smaller than the 5 per cent t value, and showed that differences in gain between Homemaking I and III were insignificant.

The comparisons of the gains of the various classes were generally consistent. The fact that none of the classes made greater gains than another class in these units, is probably due to the limited scope of both the units and the tests. This lack of progressively greater achievement at higher levels may also be due to the fact that this limited amount of course content was developed over a comparatively long period of time. These factors would cause the spread of test items to be too limited in scope and too elementary to show successive gains at the second and third year level.

Similar results were found for Homemaking II. The attitudes of these students and their class discussions indicated that the failure of either the experimental or the control group to excel the other may have been due to their lack of interest in films.

SUMMARY

The purpose of this study was to determine the effectiveness of films in summarizing the three food units taught Homemaking I, II, and III classes in the Seymour High School. Eighty-four homemaking students in the three classes were divided equally into an experimental and control group. The results of the statistical analysis of the three units indicated that both the experimental and control groups made significant gains in the three units taught. The gains were related to the knowledge of cookery terms, the correct use of measuring procedures, and to knowing how to prepare fish dishes.

The experimental group in Homemaking I made the only significant gain over its paired control group. This gain was in the unit on cookery terms. The critical ratio of 2.685, when compared with the t value showed the mean gain of 5.40 to be highly significant. There were no other significant gains made by the other experimental groups in the other classes.

A comparison of class gains indicated that none of the classes made greater gains than the class with which it was compared.

The results given in this limited study show that the film summary was as effective as the pupil-teacher summary, but that it was not superior. It is recommended that further studies

be made before the effectiveness of the film in summarizing units can be determined.

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APPENDIX

APPENDIX A

Name _____

Class _____

Date _____

TEST ON COOKERY MEASUREMENTS

Write "True" or "False" at the left of the following statements:

- _____ 1. For accurate measurement of flour mixtures, pack flour into the cup.
- _____ 2. A standard measuring cup contains eighteen table-spoons.
- _____ 3. The flat side of the knife may be used to level measurements.
- _____ 4. The side of the spatula is used to level off ingredients.
- _____ 5. When measuring a cupful of liquid, one should have the cup at eye level.
- _____ 6. All measurements should be heaped unless the recipe states otherwise.
- _____ 7. When making a sponge cake, measure the egg whites in a measuring cup.
- _____ 8. Sift whole wheat flour before measuring.

- _____ 9. To measure one cup of milk accurately, fill the cup until it overflows.
- _____ 10. Regardless of the material from which it is made, a standard measuring cup will hold 16 tablespoons.
- _____ 11. If used carefully, any plastic or glass beverage cup may be used for measuring hot liquids.
- _____ 12. Graduated sets of cups are ideal for measuring shortening.
- _____ 13. Measure flour before sifting.
- _____ 14. Flour becomes aerated as it stands in package or bin.
- _____ 15. Measure 1-1/2 tablespoons of melted fat for one tablespoon of solid fat.
- _____ 16. Shortening is packed into the measuring cup to force out any air pockets.
- _____ 17. In measuring flour, spoon the flour lightly into the cup.
- _____ 18. After heaping the cup full of flour, shake it down before leveling it.
- _____ 19. A packed cup of flour may have one-fourth to one-third cup of extra flour.
- _____ 20. When measuring granulated sugar, pack it into the cup before leveling.
- _____ 21. If granulated sugar is lumpy, sift before measuring.
- _____ 22. In measuring brown sugar, sift before measuring.
- _____ 23. Pack brown sugar into cup so it will hold its shape when it is turned out.

- _____ 24. When brown sugar holds its shape, all space is filled.
- _____ 25. In measuring eggs, measure in a measuring cup for accuracy.
- _____ 26. A liquid cup should be filled on a slanting surface.
- _____ 27. The rim above the one cup line makes it possible to carry a full cup of liquid without spilling.
- _____ 28. In measuring baking powder, dip the measuring spoon into the container and level off.
- _____ 29. In measuring shortening in water, the desired amount of shortening is obtained when the water reaches the specified mark.
- _____ 30. Pack shortening firmly into the cup.
- _____ 31. Firmly packed shortening contains no air bubbles.
- _____ 32. In measuring for accuracy, you may use any handy cup or spoon if you use it carefully.
- _____ 33. A tea cup holds sixteen tablespoons.
- _____ 34. An extra one-fourth to one-third cup of flour will improve the cake.
- _____ 35. Weighing is an accurate way of measuring.
- _____ 36. In measuring syrup, dip the spoon into the syrup.
- _____ 37. When using portions of egg for small recipes, count 3-1/2 tablespoon for an average egg.
- _____ 38. In measuring grated cheese, pack the grated cheese into the cup.

- _____ 39. When measuring cake flour, spoon the flour directly from the box or sack into the measuring cup and level off.
- _____ 40. A spoon should be slightly damp when measuring dry ingredients.
- _____ 41. When sifting flour for measuring, sift on paper.
- _____ 42. When packing fat into a measuring cup, wet the cup before packing.
- _____ 43. A damp measuring cup has the one cup level even with the top.
- _____ 44. Empty measuring equipment completely to be sure the full measurements of each ingredient goes into the bowl.
- _____ 45. Pyrex measuring cups are suitable for measuring hot liquids.
- _____ 46. One-fourth cup contains four tablespoons.
- _____ 47. Fine granulated sugar packs down almost as much as flour.
- _____ 48. Sift cornmeal before measuring.
- _____ 49. In substituting one cup of fruit juice for milk, increase the fruit juice one-fourth cup.
- _____ 50. One square of chocolate is equivalent to eight tablespoons of cocoa.

APPENDIX B

Name _____

Class _____

Date _____

TEST ON COOKERY TERMS

At the left of each statement, write "true" or "false".

- _____ 1. To cream butter, add two tablespoons of whipping cream.
- _____ 2. A strong fork is suitable for creaming small amounts of fat.
- _____ 3. Stirring means to mix the ingredients with a circular motion.
- _____ 4. Stiffly beaten egg whites are saturated with air.
- _____ 5. Folding involves two motions: cutting vertically and turning over.
- _____ 6. Stiffly beaten egg whites lose their elasticity.
- _____ 7. The purpose of folding is to get rid of as much air as possible.
- _____ 8. Frosting prevents the cake from losing moisture.
- _____ 9. When water is boiling, the bubbles rise and burst on the surface.

- _____ 10. The boiling point of water is 312° F. at sea level.
- _____ 11. Searing causes the surface of the meat to brown.
- _____ 12. Frosting is a cover for a cake.
- _____ 13. When the candy ball flattens between the fingers, the candy is at the "soft ball" stage.
- _____ 14. In kneading, the pressing motion is accompanied by folding and stretching.
- _____ 15. Pastries are kneaded before rolling out.
- _____ 16. To stew meat, fill the sauce pan three-fourths full of water.
- _____ 17. The less tender cuts of meat may be stewed.
- _____ 18. To make the "soft ball" test, drop a spoonful of the candy in a cup of lukewarm water.
- _____ 19. In simmering, the water should be boiling vigorously.
- _____ 20. In dredging meat, the meat is coated with flour.
- _____ 21. In preparing meat for braising, cut several gashes in the meat.
- _____ 22. Flour is the only substance used in dredging meat.
- _____ 23. To braise meat, add water to the roaster.
- _____ 24. When roasting meat, use one-half inch of water in the bottom of the pan.
- _____ 25. In the roasting process, the meat is placed in an uncovered pan.
- _____ 26. Roasting is cooking with dry heat.
- _____ 27. In the searing process, the meat is exposed to intense heat.

- _____ 28. Meat is cut in small pieces before searing for stew.
- _____ 29. When searing meat on top of the stove, allow twenty or thirty minutes for the total searing time.
- _____ 30. Marinate means to saturate in a marinade.
- _____ 31. In order to sear a roast in the oven, the roaster is covered.
- _____ 32. Marinade is a spice used for seasoning meat.
- _____ 33. White sauce is used only for escalloped dishes.
- _____ 34. Heating milk until a scum forms on the surface is called "scalding".
- _____ 35. Milk is scalded at 212° F.
- _____ 36. Scalloping refers to cutting the food in half circles to make it more attractive.
- _____ 37. Au gratin is a Chinese food term.
- _____ 38. Cheese, bread, or crackers are used in au gratin dishes.
- _____ 39. White sauce is made of flour, salt, butter, and milk.
- _____ 40. Au gratin is a term applied only to scalloped dishes.
- _____ 41. In jelly making, fruit juices are cooked down to a concentrated consistency.
- _____ 42. The jelly test refers to tasting the jelly to see if it has enough sugar.
- _____ 43. Two drops of jelly shed from the spoon when the jelly has cooked enough.

- _____ 44. A glossary is a dictionary section found in most cookbooks.
- _____ 45. The glossary is found in the front of most cookbooks.
- _____ 46. The appendix is found in the back of most cookbooks.
- _____ 47. The less tender cuts of meat come from the least used part of an animal carcass.
- _____ 48. The "soft ball" stage on the candy thermometer is 235° F.
- _____ 49. Baking and roasting are two different methods of cooking.
- _____ 50. To prevent the loss of meat juices, sear the meat.

APPENDIX C

Name _____

Class _____

Date _____

TEST ON FISH COOKERY

At the left of the statements, write "true" or "false".

- _____ 1. Wash the whole fish inside and out under cold water.
- _____ 2. Cold water will remove the fish smell from the fish.
- _____ 3. Fresh fish has a characteristic odor which is un-
mistakable.
- _____ 4. Fillet is the side of the fish.
- _____ 5. Fresh fish will retain a dent when pressed with the
hand.
- _____ 6. Large pieces of fish may be broiled.
- _____ 7. Frozen fish should be slightly thawed when purchased
in the market.
- _____ 8. Only fat fish may be broiled.
- _____ 9. When boiling fish, keep the water just below the
boiling point.
- _____ 10. When preparing fish for boiling, tie it up in a
square of cheesecloth.
- _____ 11. An egg or tartar sauce is a suggested seasoning for
boiled fish.

- _____ 12. Salt the fish when it is ready to serve.
- _____ 13. Boil the fish twenty or thirty minutes per pound.
- _____ 14. Skewers are used to hold the baked fish off the bottom of the pan.
- _____ 15. Cutting gashes in the baked fish will cause it to shrink.
- _____ 16. Either fat or lean fish may be fried.
- _____ 17. Frozen fish is unsatisfactory unless fried.
- _____ 18. Cuts most frequently broiled are fillets and slices of fish.
- _____ 19. Boiled fish is served without garnish or sauce.
- _____ 20. Oil the rack before putting the fish on it.
- _____ 21. Fillets are full of bones.
- _____ 22. When broiling the fish, turn the skin side down.
- _____ 23. To prevent the fish from drying out, brush with oil.
- _____ 24. Broiling one side of a fish steak requires about eight minutes.
- _____ 25. The broiling rack is placed eight inches below the source of heat.
- _____ 26. The fish should be turned several times during the broiling process.
- _____ 27. Baste the fish after it has been turned.
- _____ 28. The fish may be basted several times with melted butter or cooking oil.

- _____ 29. The broiling temperature depends on the size and shape of the fish.
- _____ 30. Turn the fish with a spatula or turner.
- _____ 31. Cooking the fish until well done produces a moist texture.
- _____ 32. The total broiling time will take from fifteen to twenty-five minutes.
- _____ 33. Soak the fish in salt water before cooking.
- _____ 34. If the fish is tender, omit basting during the baking process.
- _____ 35. Top the baked fish with bacon strips to improve the fish flavor.
- _____ 36. Bake a three or four pound fish for fifteen or twenty minutes.
- _____ 37. Dry fish will fall apart.
- _____ 38. Serve the baked fish on a cold platter.
- _____ 39. Fresh fish may be broiled.
- _____ 40. Pike, halibut, and whitefish are excellent for baking.
- _____ 41. Lemon juice or tartar sauce will toughen baked fish.
- _____ 42. Tooth picks may be used for skewers.
- _____ 43. The stuffed fish may be laced with string.
- _____ 44. Stuff the fish as you would chicken.
- _____ 45. In basting the fish, take neat stitches.
- _____ 46. To retain the shape of the baked fish, stuff it with paper.

- _____ 47. Basting will prevent the fish from drying out.
- _____ 48. Bake the fish in a deep pan.
- _____ 49. Fish is firm enough to turn easily.
- _____ 50. Bake the fish at 400° F.

APPENDIX D

UNIT OF WORK FOR HOME MAKING I

FIRST SEMESTER

<p>September 3</p> <p>"Coke" party Getting acquainted</p>	<p>September 4</p> <p>Analyzed purpose and value of homemaking.</p>	<p>September 5</p> <p>Planned class- room ettiquette.</p>
<p>September 10</p> <p>Food prejudice and breakfast survey.</p>	<p>September 11</p> <p>Make breakfast and food prej- udice survey chart.</p>	<p>September 12</p> <p>Computed calories needed for a freshman in a day. Planned to keep a record of food consumed in one day.</p>
<p>September 17</p> <p>Studied procedure in planning a breakfast.</p>	<p>September 18</p> <p>Continued lesson on planning a breakfast. Planned a break- fast to be prepared Thurs- day.</p>	<p>September 19</p> <p>Planned market order and work plan for break- fast.</p>

<p>September 6</p> <p>Conferences with students.</p>	<p>September 7</p> <p>Planned semester's work and goals.</p>
<p>September 13</p> <p>Checked given menu with basic seven.</p>	<p>September 14</p> <p>Evaluated the adequacy of food consumed in one day.</p>
<p>September 20</p> <p>Prepared and served breakfast.</p>	<p>September 21</p> <p>Selected ways of preparing eggs. Studied recipe for preparing popovers.</p>

<p>September 24</p> <p>Planned a breakfast. Made out market orders and work plan.</p>	<p>September 25</p> <p>Trip to grocery store.</p>	<p>September 26</p> <p>Prepared and served breakfast.</p>
<p>October 1</p> <p>Planned a brunch for guests.</p>	<p>October 2</p> <p>Preliminary preparation for brunch.</p>	<p>October 3</p> <p>Served brunch to superintendent and principal.</p>
<p>October 8</p> <p>Discussed the importance of accurate measurements. Students demonstrated correct measurements.</p>	<p>October 9</p> <p>Gave pre-test on cookery terms. Gathered flowers for T.S.T.A. meeting.</p>	<p>October 10</p> <p>Students defined cookery terms they knew. Studied cookery terms.</p>

<p>September 27</p> <p>Studied guides for planning lunches. Socio-drama on table manners.</p>	<p>September 28</p> <p>Made sandwiches for F.H.A. committee planning the district meeting.</p>
<p>October 4</p> <p>Explained the purpose of the study of films. Cleaned the cottage.</p>	<p>October 5</p> <p>Explained the purpose of pre-test. Gave cookery measurements pre-test.</p>
<p>October 11</p> <p>Studied characteristics of a successful party. Outlined duties of hostess and guests.</p>	<p>October 12</p> <p>Six weeks test.</p>

<p>October 16</p> <p>Planned teachers' luncheon. Explained correct use of terms and measurements encountered in preparing menu.</p>	<p>October 17</p> <p>Teachers' party. Homemaking teacher observed use of terms and measurements.</p>	<p>October 18</p> <p>Shell craft.</p>
<p>October 23</p> <p>Prepared and served luncheon.</p>	<p>October 24</p> <p>Worked on leather belts and shell craft.</p>	<p>October 25</p> <p>Studied pamphlet for preparing 30-minute oven meals. Made list of terms and measurements employed in preparing menu.</p>
<p>October 30</p> <p>Judged table decorations. Planned games</p>	<p>October 31</p> <p>Halloween party.</p>	<p>November 1</p> <p>Made cookies for homecoming. Worked on F.H.A. float.</p>

<p>October 19</p> <p>Studied parliamentary procedure to be used in class meetings.</p>	<p>October 22</p> <p>Selected luncheon menu for a family. Selected a family of different ages. Discussed terms and measurements used in menu.</p>
<p>October 26</p> <p>Prepared 30-minute oven meal. Consulted groups on use of terms and measurements.</p>	<p>October 29</p> <p>Planned a Halloween party. Displayed center pieces for Halloween.</p>
<p>November 2</p> <p>Served punch to homecoming guests. Worked on crafts.</p>	<p>November 5</p> <p>Selected quick breads to cook. Prepared outline for preparing and judging quick breads. Discussed cookery terms and measurements.</p>

<p>November 6</p> <p>Each group prepared griddle cakes or waffles. Judged breads. Observed use of terms and measurements.</p>	<p>November 7</p> <p>Prepared for FHA meeting.</p>	<p>November 8</p> <p>Continued preparations for FHA meeting.</p>
<p>November 13</p> <p>Finished planning salads. Discussed terms and measurements not previously studied.</p>	<p>November 14</p> <p>Prepared fruit and vegetable salads. Served salads during study period.</p>	<p>November 15</p> <p>Radio program on education week.</p>
<p>November 18</p> <p>Experimental group saw film, cookery terms. Control group summarized the unit through discussion. Gave post test.</p>	<p>November 21</p> <p>Gave pre-test on fish cookery. Shared previous experiences in cooking fish.</p>	<p>November 22</p> <p>Thanksgiving holiday.</p>

<p>November 9</p> <p>Continued preparation for District FHA meeting to be held November 10.</p>	<p>November 12</p> <p>Studied pamphlet <u>Art of Salad Making</u>. Discussed preparation of salads. Planned three salads.</p>
<p>November 16</p> <p>School nurse gave typhoid and tetanus shots. Worked on leather belts.</p>	<p>November 17</p> <p>Experimental group saw summary film on measuring. Control group summarized the unit by means of discussion. Gave post test.</p>
<p>November 23</p> <p>Holiday.</p>	<p>November 26</p> <p>Studied general procedure for cooking fish in <u>Better Homes and Gardens</u>. Planned to broil fish.</p>

<p>November 27</p> <p>Boiled perch fillet. Served with white sauce. Evaluated the product.</p>	<p>November 28</p> <p>Planned to broil fish.</p> <ol style="list-style-type: none"> 1. Preparation 2. Broiling 3. Serving. 	<p>November 29</p> <p>Broiled fish. Evaluated the broiled fish.</p>
<p>December 4</p> <p>Selected recipe for stewing meat. Compared stewing with boiling. Planned next lesson.</p>	<p>December 5</p> <p>Studied visual material on broiling pork chops. Planned to broil chops.</p>	<p>December 6</p> <p>Demonstrated broiling, compared broiled pork chops with boiled fish.</p>
<p>December 11</p> <p>Experimental group saw film on fish cookery. Control group summarized unit. Gave post test.</p>	<p>December 12</p> <p>Planned three lessons on candy making.</p>	<p>December 13</p> <p>Made cream candies.</p>

<p>November 30</p> <p>Planned to bake fish. Chosen students made trip to market. Others outlined steps in baking fish.</p>	<p>December 3</p> <p>Baked fish. Served at noon. Discussed finished product.</p>
<p>December 7</p> <p>Round table discussion on baked chicken.</p>	<p>December 10</p> <p>Demonstrated the stuffing and baking of chicken. Compared baking fish and chicken.</p>
<p>December 14</p> <p>Made brittle candies.</p>	<p>December 17</p> <p>Made fudge.</p>

<p>December 18</p> <p>Made toys for small children.</p>	<p>December 19</p> <p>Continued toy making.</p>	<p>December 20</p> <p>Planned Christmas party.</p>
<p>January 3</p> <p>Planned ways to help little sister and brother play together.</p>	<p>January 4</p> <p>Demonstrated right and wrong way of arranging pictures.</p>	<p>January 7</p> <p>Class set up model and arranged a closet.</p>
<p>January 11</p> <p>Semester Final</p>		

<p>December 21 Christmas Party.</p>	<p>January 2 Studied telling stories to children. Told children stories.</p>
<p>January 9 Reviewed.</p>	<p>January 10 Semester final.</p>

APPENDIX E

UNITS OF WORK FOR HOME MAKING II

FIRST SEMESTER

September 3 "Shake Hands" Party.	September 4 Reviewed last year's	September 5 Conferences.
September 10 Studied china.	September 11 Field trip to visit local stores displaying china.	September 12 Students demonstrated care and selection of china.
September 17 Continued lesson on period furniture.	September 18 Continued lesson on dining room furniture.	September 19 Drew plan of dining room and arranged chosen furniture.

<p>September 6</p> <p>Planned aims and suggested units.</p>	<p>September 7</p> <p>Set up rules for working in kitchen. Straightened the kitchen.</p>
<p>September 13</p> <p>Examined and discussed table linen and silverware exhibit.</p>	<p>September 14</p> <p>Studied period dining room furniture.</p>
<p>September 20</p> <p>Continued lesson on planning the dining room.</p>	<p>September 21</p> <p>Summarized dining room unit.</p>

<p>September 24</p> <p>Showed film "Bathing the Infant".</p>	<p>September 25</p> <p>Showed film "Baby Learns to Walk".</p>	<p>September 26</p> <p>Summarized content of films shown.</p>
<p>October 1</p> <p>Selected cooking measurements to demonstrate. Demonstrated measurements.</p>	<p>October 2</p> <p>Gave cookery terms pre-test. Looked up and discussed cookery terms.</p>	<p>October 3</p> <p>Planned a party for a third grade class. Listed terms and measurements used in planning a party.</p>
<p>October 8</p> <p>Six Weeks Test</p>	<p>October 9</p> <p>Reports on feeding pre-school child. Selected a menu for a four year old child.</p>	<p>October 10</p> <p>Planned lunch for four year old child. Discussed terms and measurements to be used.</p>

<p>September 27</p> <p>Listed and studied rules for planning pre-school child's diet. Made food selection guide for pre-school child's diet.</p>	<p>September 28</p> <p>Explained investigation and purpose of pre-test. Gave cooking measurement pre-test.</p>
<p>October 4</p> <p>Baked four cakes. Final preparations for party.</p>	<p>October 5</p> <p>Party for third grade.</p>
<p>October 11</p> <p>Prepared and served luncheon for four year old.</p>	<p>October 12</p> <p>Discussed rules for baby sitting. Set up rules for baby sitting.</p>

<p>October 15</p> <p>Worked on leather belts.</p>	<p>October 16</p> <p>Planned lesson on pastry.</p> <ol style="list-style-type: none"> 1. Conventional method 2. Spry method. 	<p>October 17</p> <p>Planned score card for judging pies. Made pastries.</p>
<p>October 22</p> <p>Worked on leather belts and shell craft.</p>	<p>October 23</p> <p>Studied Junior Homemaking Degree.</p>	<p>October 24</p> <p>Socio-drama. Charming hostess at Halloween party.</p>
<p>October 29</p> <p>Planned score card for judging cakes. Used in judging Home Demonstration exhibit.</p>	<p>October 30</p> <p>Read and studied pamphlet <u>Art of Salad Making</u>. Planned three salads. Listed terms and measurements used in salads.</p>	<p>October 31</p> <p>Prepared salads. Discussed terms and measurements. Served salad during study period.</p>

<p>October 18</p> <p>Baked pie crust and made cream filling.</p>	<p>October 19</p> <p>Served hot chocolate and pie. Summarized terms and measurements used in preparing pie.</p>
<p>October 25</p> <p>Planned Halloween Party.</p>	<p>October 26</p> <p>Halloween Party.</p>
<p>November 1</p> <p>Arranged cottage for homecoming. Worked on float.</p>	<p>November 2</p> <p>Showed homecoming guests around school. Worked on leather belts and billfolds.</p>

<p>November 5</p> <p>Decided on types of yeast bread to cook. Made a work plan and planned a score card for yeast rolls.</p>	<p>November 6</p> <p>Prepared roll dough and stored in refrigerator. Volunteers explained terms and measurements used in making rolls.</p>	<p>November 7</p> <p>Baked and served rolls.</p>
<p>November 12</p> <p>Studied and listed procedures for cooking oven menu. Planned 30-minute meal.</p>	<p>November 13</p> <p>Prepared 30-minute oven menu.</p>	<p>November 14</p> <p>Summarized terms and measurements used in oven menu. Finished preparations for broadcast.</p>
<p>November 17</p> <p>Experimental group saw film "Cooking Measurements". Control group summarized unit. Post-test.</p>	<p>November 20</p> <p>Experimental group saw film "Cooking Terms". Control group summarized unit. Post-test.</p>	<p>November 21</p> <p>Gave pre-test on fish cookery. Discussed experiences in cooking fish.</p>

<p>November 8</p> <p>Finished scoring rolls. Prepared for District FHA. meeting.</p>	<p>November 9</p> <p>Continued preparations for FHA meeting.</p>
<p>November 15</p> <p>Worked on textile painting.</p>	<p>November 16</p> <p>Helped health nurse give typhoid and tetanus shots.</p>
<p>November 22</p> <p>Thanksgiving holiday.</p>	<p>November 23</p> <p>Thanksgiving holiday.</p>

<p>November 26</p> <p>Studied method of boiling fish. Planned next lesson.</p>	<p>November 27</p> <p>Prepared and served boiled fish luncheon. Evaluated meal.</p>	<p>November 28</p> <p>Planned broiling fish.</p> <ol style="list-style-type: none"> 1. Preparations 2. Broiling 3. Serving.
<p>December 3</p> <p>Prepared baked fish. Served luncheon at noon.</p>	<p>December 4</p> <p>Selected recipe for stewing meat. Studied cuts of meat used in stews.</p>	<p>December 5</p> <p>Prepared and served stew. Summarized stew and boiled fish cookery.</p>
<p>December 10</p> <p>Studied steps in stuffing chicken. Compared stuffed chicken and fish.</p>	<p>December 11</p> <p>Control group summarized fish unit. Experimental group saw film "Fish Cookery".</p>	<p>December 12</p> <p>Studied candy making. Planned two lessons on making candy.</p>

<p>November 29</p> <p>Four girls demonstrated broiling catfish steaks. Evaluated lesson.</p>	<p>November 30</p> <p>Selected recipe for baking fish. Ordered fish. Planned luncheon.</p>
<p>December 6</p> <p>Outlined orally method of broiling pork chops. Compared broiled pork chops with broiled fish.</p>	<p>December 7</p> <p>Broiled and served pork chops.</p>
<p>December 14</p> <p>Made candy.</p>	<p>December 17</p> <p>Made candy.</p>

<p>December 18</p> <p>Planned tea for teachers.</p>	<p>December 19</p> <p>Planned Christmas tea program.</p>	<p>December 20</p> <p>Continued preparations.</p>
<p>January 2</p> <p>Straightened book shelves and first aid room.</p>	<p>January 3</p> <p>Studied diets for aged.</p>	<p>January 4</p> <p>Studied diets for convalescents.</p>
<p>January 9</p> <p>Reviewed for final examination.</p>	<p>January 10</p> <p>Semester examination.</p>	<p>January 11</p> <p>Individual conferences.</p>

<p>December 21</p> <p>Christmas tree for teachers and Christmas program.</p>	<p>December 22</p> <p>Christmas Holiday.</p>
<p>January 7</p> <p>Wrote summary of home experiences.</p>	<p>January 8</p> <p>Reviewed for final.</p>