THE DEVELOPMENT OF AN INTEGRATED ADVANCED UNIT IN FOOD AND NUTRITION

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THE DEVELOPMENT OF AN INTEGRATED ADVANCED UNIT

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CHAPTER I

AN OVERVIEW OF EDUCATIONAL TRENDS AND BELIEFS

The adequacy of our educational system for preparing our youth to meet the problems of the future is being challenged in every direction. This is not surprising in view of the fact that educational systems have always been subjected to closer scrutiny during periods of transition and uncertainty. The rapid increase in available knowledge in all fields has served to add to the general feeling of unrest and inadequacy within man as his possession of knowledge in relation to what is available grows smaller and smaller. History will verify the fact that in periods of stress and uncertainty it is to the school that people look for direction in solving social problems. One writer has stated that the present difficulty stems from the disproportion between the knowledge that is now available and necessary to know and the ability of the individual to acquire what he needs.[1]

If education is to serve its basic purpose of preparing individuals to meet the problems of the present and future, educators must be constantly evaluating ways to improve the effectiveness of the teaching-learning experience. If there are ways to narrow the gap between the available knowledge and the ability of the individual to grasp and retain more of it, these possibilities need careful exploration. One

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[1]Philip Phenix, "Key Concepts and the Crisis in Learning," Teachers College Record, LVIII (December, 1956), pp. 137-143.

suggestion made by Phenix is that there must be a radical simplification in the content of knowledge to be learned.[2] By this he implies that it is possible by careful analysis to discover the basic or key concepts within a field which when understood will point the way to an effective grasp of an entire field of knowledge. If this is true, then what has been termed "economy of learning" is possible when attention is given to basic fundamentals with less emphasis on specifics.

The concept basis or theory in education is not new but has appeared or at least been implied in educational literature for many years. However, a survey of recent educational writings indicates that a renewed interest has been shown in the determination of basic concepts in all fields of knowledge to serve as a guide for curriculum content. One of the earliest efforts at a concerted study of concepts was made on the campus of Oklahoma State University in 1950. The entire conference was devoted to the "Nature of Concepts, Their Interrelation and Role in Social Structure." Northup of Yale University presented a paper in which he defined concepts as "words that have been given meanings in concise ways."[3] He further stated that for integration of education to take place we will "have to find a set of common denominator concepts of our different disciplines, subject matters, and cultures." The implication here seems to be that so often disciplines may be related, but the terminologies used are so different that students fail to grasp the relationship between and within the different fields of study.

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[2] Ibid., p. 139.

[3] F. S. C. Northup, The Problem of Integrating Knowledge, Report of Conference on The Nature of Concepts, 1950, pp. 25-44.

The use of concepts in the educational process cannot be separated from the use of generalizations. One writer stated that a concept is a generalization. He further stated that a generalization shows the relationship between two or more concepts. He emphasized that while the study of specific subjects does not automatically increase the mental power of an individual, he did indicate that by the wider use of concept and generalization learning "it is possible to accomplish transfer of 'mental training' on a scale not heretofore believed possible."[4]

A similar idea of learning which is called teaching from the fundamental structure of a subject is advocated by Bruner when he states:

> ... the curriculum of a subject should be determined by the most fundamental understanding that can be achieved of the underlying principles that give structure to that subject. Teaching specific topics or skills without making clear their context in the broader fundamental structure of a field of knowledge is uneconomical in several deep senses. In the first place, such teaching makes it exceedingly difficult for the student to generalize from what he has learned to what he will encounter later. In the second place, learning that has fallen short of a group of general principles has little reward in terms of intellectual excitement. . . . Third, knowledge one has acquired without sufficient structure to tie it together is knowledge that is likely to be forgotten. . . . Organizing facts in terms of principles and ideas from which they may be inferred is the only known way of reducing the quick rate of loss of human memory.[5]

The study of Coon in 1959 concerning home economics in the public secondary schools focused the attention of educators on the need for a reappraisal of the home economics curriculum to meet the changing needs

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[4]Percival M. Symonds, "What Education Can Learn from Psychology," Teachers College Record, LX, (October, 1958), pp. 30-45.

[5]Jerome S. Bruner, The Process of Education, Harvard University, 1962, pp. 31-32.

of students in a rapidly changing world.[6] The study revealed that the major emphases of home economics in the secondary schools were still upon two areas--foods and clothing. The changes in family living with food preparation and clothing production so often done largely outside of the home should cause educators to recognize the need for a critical examination and evaluation of the home economics curriculum.

In keeping with the concern of so many organizations, groups, and individuals regarding education in the secondary schools, the Home Economics Branch of the United States Office of Education gave consideration early in 1961 to a new approach to the study of the home economics curriculum in the secondary school. The group agreed that the identification of the basic concepts and generalizations in the various subject matter areas would define the structure of home economics and provide valuable resource material for curriculum development.

At the same time a seminar sponsored by the Home Economics Division of the American Association of Land-Grant Colleges and State Universities was being planned. The one week conference held in French Lick, Indiana, in June, 1961, directed its attention to the "concept approach" for the purpose of "identifying, organizing, structuring, and unifying the significant subject matter content of the field."[7]

In setting the stage for the French Lick Seminar, one educator stated that "emphasis is being placed on developing a list of significant basic or key concepts so selected that they will be continuously

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[6] Beulah I. Coon, "Home Economics in the Public Secondary Schools," U. S. Department of Health, Education and Welfare, 1959.

[7] Berenice Mallory, "Home Economics Curriculum Study," American Vocational Journal, XXXVII, (September, 1963), p. 35.

or recurringly used at even higher levels of sophistication."[8] This speaker further indicated that the learning of a new area depends upon the existence of a clear and limited number of concepts and principles. It is his belief that concepts improve learning because they allow the individual to organize the learning in which he engages and permit him to meet and deal intelligently with new situations. The central concepts of any discipline or profession must be determined before it is possible to evaluate and improve the teaching-learning process.

One of the problems which faced home economists at the 1961 conference in their attempts to bring unity to the profession of home economics was the difficulty in determining "unifying concepts." Since home economics is an applied field, it draws upon fundamental knowledge in the basic sciences, both natural and social, as well as the arts and the humanities. This presented a problem in first identifying the key underlying concepts from the fundamental areas of knowledge before those concepts and principles belonging strictly to home economics could be identified.

The central concept for the entire field of home economics has remained unchanged throughout the years. The "focus on family" or "family centeredness" has always been the primary concern of home economists. The breadth in scope of the subject matter areas related to home economics causes the identification of broad high level concepts for uniting the field to become increasingly difficult.

Since the French Lick Seminar of 1961, numerous workshops have

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[8]Paul L. Dressel, "The Role of Concepts in Planning the Home Economics Curriculum" from the Home Economics Seminar--A Progress Report, 1961, pp. 7-18.

been held on various campuses across the United States. These have been attended by outstanding leaders in the different subject matter areas related to home economics. The main purpose of these workshops was to identify the key concepts that are basic and significant in each subject matter segment in the field of home economics as it related to the secondary school. This task of selecting high level concepts to encompass an entire area of subject matter and to state them in language acceptable to all concerned has been impossible; however, in 1965 a paper was released by the U. S. Department of Health, Education, and Welfare which gives a listing of concepts and generalizations for all phases of home economics. The five headings under which these concepts and generalizations are organized include: Human Development and the Family, Home Management and Family Economics, Food and Nutrition, Textiles and Clothing, and Housing. In keeping with the theory of many educators that basic concepts and generalizations offer a sound foundation for curriculum building, the compiler of the "Curriculum Resource Material" states that:

> A curriculum that is structured on unifying concepts is flexible and can be adjusted to local conditions and to changing conditions, both of which can affect the curriculum. Once the pertinent concepts and generalizations have been identified, the content to develop them can be chosen from a wide range of possibilities. Also, a curriculum so structured can easily be reviewed in the light of new ideas and information; this would be useful in indicating research which might be needed and in suggesting new approaches to the curriculum. In addition, the identification of concepts and generalizations should facilitate the evaluation of the teaching-learning process.[9]

The abundance of educational literature concerned with questions

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[9] U. S. Department of Health, Education, and Welfare, Office of Education, "Curriculum Resource Material--Conceptual Framework and Generalizations in Home Economics," p. 1.

about the effectiveness of our educational system to meet the needs of our students should serve as an incentive to teachers to be alert at all times to ways of improving the content of their courses and their methods of teaching. This questioning of educational effectiveness does not necessarily indicate undue weakness in our present educational system but rather should serve to obliterate smug ideas that our methods and course content are above periodic evaluation and revision as needed.

Particular concern had been experienced by this writer for some time regarding the effectiveness of food and nutrition teaching at the senior high school level. Close contact with high school age students both in the classroom and in public seemed to verify the many recently published articles that have been concerned with the poor food habits of teen-agers. Observation of this age group points up the fact that even though most of them have been exposed to some nutrition information, true learning has not taken place since it has not resulted in changed behavior of these individuals.

Changes in home life brought on in part by the increasing number of working mothers, the irregular work hours of different family members, more spending money for young people in our affluent society, lack of parental supervision--all of these and other changes have given young people increased freedom for self-direction. These changes in our over-all family social structure increase the responsibility of educators for helping youth develop an effective foundation from which to base these new decisions. The assumption of home and parental responsibilities at an early age is still another basic reason for quality teaching in the area of food and nutrition. Concern is being expressed over the effect to our future citizenry if poorly nourished parents

produce children who fail to possess optimum physical and mental qualities.

In spite of the publicity that has been given to the poor food practices of youth and to the urgent need for improving these practices, educators who have been charged with the responsibility of evaluating and revising the home economics curriculum have been faced with the criticism that the foods area has been receiving too much emphasis in the past. These critics point up that over-emphasis of the foods area is resulting in a neglect of other home economics areas and that due to the abundance of convenience foods available to the homemaker that less training in foods is now needed. This apparent conflict between the food practices of youth and the emphasis on food within the schools deserves careful examination involving the consideration of several important questions. Why have the food practices of teen-agers become alarmingly poor when the area of foods has received emphasis in the home economics curriculum? Do our methods of teaching need revision or improvement to make them more effective? Has the content of foods courses been adjusted to meet the changing needs of individuals or is the emphasis still on food preparation as it was at an earlier time? What percentage of our teen-agers are actually enrolled in food courses? Is it possible in our teaching to integrate the concepts of management of time, energy, and finances with those of food and nutrition in such a manner that students will see the value of making practical application of such knowledge both now and in the future?

All of these questions for which there appear to be no scientific answers have been the concern of the writer who while actively engaged in teaching has been constantly examining the content of courses taught

and the methods used in teaching with the improvement of instruction as the primary goal. This has led to an interest in action research which Corey defines as "research undertaken by educators in the field in order to improve their practices." Corey further states that "a teacher is most likely to change his ways of working with people when he accumulates and interprets information about these people because he wants to work more effectively with them."[10] Since action research is concerned with practical problems facing an individual or group, it is possible to make immediate changes within the classroom when such changes seem desirable. Action research challenges the teacher in the classroom to develop an inquiring and receptive attitude toward new ideas that may be adapted for use within a given situation.

A background of literature, experience, and observation supports the following statements of belief which have guided the writer of this study:

1. A basic knowledge of nutrition and food preparation principles and the ability and desire to apply them is vital to the well being of all people.

2. The maturity and interest level of the senior high school student is such that courses with depth have greater appeal than at an earlier age.

3. The senior high school level may be the last opportunity for the majority of students to receive formal education in foods.

4. The observation of the food practices of high school students both in school and in public indicates that previous foods teaching has been lacking in effectiveness.

5. Teacher-pupil planning of course content and procedure results in a higher interest level and more effective learning.

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[10] Stephen M. Corey, Action Research To Improve School Practices. New York Bureau of Publications, Teachers College, Columbia University, 1953, New York, pp. 9, 141.

6. There is a need to upgrade course content, teaching techniques, and management practices in upper level foods classes if the present and future needs of students are to be effectively met.

From the premise that there is a need to evaluate and improve high school food and nutrition courses, this study had as its purpose the development, use, and evaluation of an advanced unit of work in which the concepts of management and consumer education were integrated with the concepts of food and nutrition.

CHAPTER II

PLANS FOR DEVELOPMENT OF THE STUDY

The writer's belief that the teaching of food and nutrition can be more effectively accomplished at the advanced high school level when it is taught as a one semester unit into which the concepts of management and consumer education have been integrated with those of food and nutrition served as the basis for this study.

The major objectives of the study were:

1. To plan the possible objectives for an advanced level one semester unit in food and nutrition integrated with the concepts of management and consumer education which are based on previous experience, needs, and interests of students.

2. To select a limited number of concepts to include in the unit in order to allow for adequate development of each.

3. To revise present teaching methods in light of an extensive survey of educational literature, previous studies made by other educators, and personal experience.

4. To develop and use the resource unit based on the objectives listed in objective one.

5. To plan for ways to evaluate the effectiveness of the unit during and after its use by both students and teacher.

6. To make recommendations to serve as a basis for future use and/or development of the unit.

The limitations of this action research study are easily recognizable since the study was carried out with only one class of twenty-four girls enrolled in Homemaking III in Shattuck High School during the fall semester of the 1965-66 school year. The judging of the effectiveness of the unit was largely subjective as there were no truly objective

methods available for the evaluation of this specific study. The conclusions that resulted from this study applied largely to the one group included in the study; however, there is the possibility that the results may be applied to other groups similar to the one involved in this study.

Terms which appear frequently in this study have been used by the writer in light of the following definitions:

1. Action Research - the study of actual problems within the classroom for the purpose of improving classroom instruction.
2. Concept - a large or important idea which can be used in defining a class or group of items having certain similarities.
3. Generalization - a complete thought that expresses an underlying truth, has an element of universality, and usually indicates a relationship of cause and effect.
4. Group activity - specific work accomplished by small segments within a class.
5. Integrated unit - a unit which incorporates related subject matter into a complete unit.
6. Objective - the aim or goal toward which effort is directed.
7. Resource unit - a suggestive plan of study which may serve as background material in planning specific course content.

The procedure involved in carrying out this study was divided into three phases, namely: (1) pre-planning of the unit by the teacher, (2) development and use of the unit with the students, and (3) evaluation of the effectiveness of the unit and the determination of guidelines for future use and development of the unit.

The first step, pre-planning for the unit, required extensive research. It included a survey of recent curriculum guides to determine the thinking of specialists in the area. It also included an examination of "Curriculum Resource Material--Conceptual Framework and Generalizations in Home Economics" from the United States Department of

Health, Education, and Welfare. Next, the general objectives for all high school foods units were determined. This was followed by selecting the objectives that seemed appropriate for this advanced level integrated unit based on past experiences and the anticipated needs of the particular class for which the unit was being planned. The tentative selection of a limited number of concepts to be included in the unit was made together with appropriate generalizations. A detailed study of group activity procedures used by others was made. A test to be used as a pre-test and post-test was prepared to help the teacher and students determine the strengths, needs, and growth of students.

The second step was the actual development and use of the unit with a particular class. Briefly stated, this involved the determination of the needs and interests of the students with consideration given to their past experiences and to their plans for the future. It included the examination of tentative objectives as suggested by the teacher and the development of the final objectives through teacher-pupil planning. Plans were developed for organizing and carrying out group activities. They were revised during the semester as the need arose. Evaluative forms provided by the teacher were examined and basically accepted with few changes. The subject matter for the unit was developed from the following objectives agreed upon during teacher-student planning:

1. To gain experience in more complex meal preparation and service.
2. To gain experience in management of time, energy, and money in relation to food preparation and service.
3. To acquire some knowledge and skill related to food preservation.

4. To develop an inquiring attitude toward new developments in foods and related areas.

5. To develop greater interest in improved nutrition for self and family.

6. To develop some ability to select suitable and attractive equipment for dining.

7. To acquire some ability to judge and plan convenient kitchen arrangements.

The third part of the study was the determination of the effectiveness of the unit which involved the comparison of the pre-test and post-test scores of students, the attitude and interest of the students as observed by the teacher, and the individual evaluation of student accomplishments. The statement of guidelines for future use and development of the unit was the final phase of this study.

CHAPTER III

DEVELOPMENT AND USE OF THE UNIT

Pre-planning for the Unit

The class, for whom the integrated advanced unit in food and nutrition combining the concepts of management and consumer education with those of food and nutrition was planned, consisted of approximately twenty-four girls enrolled in Homemaking III in Shattuck High School during the fall semester of 1965-66 school year. Since Shattuck is less than twenty-five hundred in population, it is considered a rural community, but in checking the potential membership of this group seventeen were found to live in the town while only seven actually lived on farms.

Before attempting to set up preliminary plans for the unit, it seemed imperative that an intensive and extensive study be made of recent curriculum materials to ascertain the thinking of others concerning advanced food units. With this in mind, a comparative study was made of seven recent state curriculum guides to note the emphases and objectives in food and nutrition at each grade level. Numerous similarities were noted in the subject matter emphases of the guides. These guides were compared with the Oklahoma guide.[1] The guides used in this comparison were from Iowa, Missouri, New Mexico, Florida, Kansas,

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[1]See Appendix A, p. 40.

New Jersey, and New York.

From this comprehensive study and the writer's background of experience, the next step was to develop the basic objectives for all food units in a selected secondary school. This seemed necessary in order to allocate those objectives to the most appropriate grade level giving consideration to both the interest and ability levels of students. Many of the objectives were appropriate at more than one level with a difference only in difficulty of the study or in the level of achievement for the different grades.[2]

After determining the basic objectives for secondary food units and at the conclusion of a study concerning basic or key concepts, the writer, under the supervision of Dr. Helen Barbour, Head of Food, Nutrition and Institution Administration at Oklahoma State University, and co-author of "Teaching Nutrition," determined the tentative basic concepts for each general objective. These concepts were stated in terms that were intended to be flexible in nature to make them adaptable for varying groups and needs. Since the work with Dr. Barbour was done just previous to the release of the "Curriculum Resource Material--Conceptual Framework and Generalizations for Home Economics" by the U. S. Department of Health, Education, and Welfare, it aided the writer in using this new material as a basis for unit planning.

Since the unit was to be planned for a group that had experienced two previous food units, it was important to review the content of these units in order to determine emphases as well as to avoid monotony which so often is the criticism voiced by students concerning upper

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[2]See Appendix B, p. 42.

grade units in homemaking.[3] A review of previous units was helpful in determining the possible objectives that might be emphasized in an integrated unit.[4] The concepts that were tentatively selected during the pre-planning period were related to the appropriate unit objectives in order to guard against excessive limitation of the scope of the unit.[5]

Since the improvement of present teaching methods was one of the major objectives of this study, it was necessary to consider some of the dissatisfactions with previous methods before deciding on possible changes. The writer had observed from past experiences that student planning for the use of time was often not successful. The writer's attempts to group activity which is so necessary in foods classes often resulted in:

1. groups not engaged in food preparation not feeling the value or urgency of their assigned activities,
2. standards of preparation groups lower than desired due to insufficient planning or to time limitations, and
3. unequal division of work and/or learning activities with those having more experience or ability assuming excessive responsibility.

A detailed study of materials assembled during a workshop conducted by Dr. Millie Pearson on the campus of Oklahoma State University during the summer of 1960 was made. The study was revealing to the writer and pointed up that much of the dissatisfaction with foods classes could possibly be avoided if more extensive pre-plans were made by the teacher and if more time was spend in orienting students into group activity.

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[3]See Appendix C, p. 43.

[4]See Appendix D, p. 44.

[5]See Appendix E, p. 46.

The writer was convinced that in previous classes insufficient time had been spent with students in planning for group activity and that perhaps students had not been fully aware of their individual and group responsibilities. Samples of planning forms for different activity groups were made to be examined by students and revised as needed.[6] Group folders were prepared that might be used by groups and kept on file in the department at all times to be referred to by students and teachers as needed.

Several check lists for judging the effectiveness of class activities were assembled to be referred to as the unit was developed with the class. A pre-test was developed to be used to help students and teacher determine both strengths and weaknesses of the students' background of food knowledge and to serve as a starting point in selecting unit objectives.[7] The same test would be given following the unit.

Development and Use of Unit with Students

The class with whom the integrated advanced unit in foods and nutrition was developed consisted of twenty-four girls enrolled in Homemaking III in Shattuck High School. Of the group all but five had been enrolled in Homemaking I and II in Shattuck High School the previous two years. Four of the five had come from other schools while the fifth girl had dropped out of school about ten years previously and was married and the mother of three daughters. The presence of this older girl in the class with her eagerness to learn and her obvious

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[6] See Appendix F, p. 48.

[7] See Appendix G, p. 58.

realization of the need for information was a most desirable influence on other class members.

The class was started by a discussion of past experiences with food together with the consideration of possible needs and interests of the group. To serve as a basis for discussion, the group checked an "Opinions About Food" from "Evaluation Materials in Foods" by Chadderdon in which fifty-two statements were made about food and nutrition. These papers were not signed and students had four choices of answers: (1) True, (2) Doubtful, (3) False, or (4) I don't know. Tallying the class answers to this opinionnaire pointed up differences of opinion and numerous uncertainties in the minds of students. Following this, the students agreed that an actual pre-test would be helpful in determining how much had been retained from previous studies as well as helpful in stimulating interest in additional studies. While the pre-test was being checked, the students read and shared new information concerning food, nutrition, equipment, management, and related ideas which proved valuable in setting up objectives for the class.

The major concepts previously considered by the teacher as possible areas of exploration were discussed and basically approved by the class. These included:

1. meeting individual and family food needs,
2. management of meals,
3. selection of equipment for dining,
4. kitchen planning and equipping, and
5. new developments in food and nutrition.

Objectives as developed by the class were as follows:

1. To gain experience in more complex meal preparation and service.

2. To gain experience in management of time, energy, and money in relation to food preparation and service.

3. To acquire some knowledge and skill related to food preservation.

4. To develop an inquiring attitude toward new developments in food and related areas.

5. To develop greater interest in improving nutrition for self and family.

6. To develop some ability to select suitable and attractive equipment for dining.

7. To acquire some ability to judge and plan convenient kitchen arrangements.

In order to take advantage of plentiful food products which several of the girls had to offer, the food preservation study was included first on the schedule. Only a very few of the girls had had any previous experience in canning even though this is basically a rural community. Although freezing is more extensively practiced by many families in this community, the girls were interested in learning about the different methods of canning. Foods to be canned were to be used later in meal preparation. Following a class study of the three basic methods of canning--pressure cooker, water bath, and open kettle, the instructor demonstrated the pressure cooker method. The class was then divided into six groups with two groups canning food by each of the three methods. The pressure cooker groups canned carrots. The groups using the water bath method canned tomatoes and peaches. Those using the open kettle method canned apple jelly and pear honey. The class was pleased with the attractive looking canned products they were able to display after they were completed and properly labeled.

Following the canning laboratories, the girls were guided in developing generalizations related to food preservation. While it had

always been the practice of this writer to summarize activities and learnings during and at the conclusion of a study, this was the first attempt to encourage students to make generalized statements and to be able to defend the statements.[8]

The class was now ready to plan for meal management and for the special studies that would be needed in relation to the different meals to be prepared. Some of the types of preparation techniques in which the class expressed interest included: variety in meat cookery, new ways with vegetables, special desserts, yeast breads, jiffy meals, and holiday cooking. As a background for planning for meal preparation the class reviewed the principles of menu planning from previous units. Menu patterns were examined and four were selected with the idea of including as many of the special preparation techniques as possible.[9]

Since the improvement of the effectiveness of group activity in food classes was one of the main objectives of this study, the responsibility of the writer for helping students recognize the value of and need for adequate pre-planning for laboratory activities was eminent. The class was in agreement that the groups not actually engaged in meal preparation would need to plan for the wise use of their time; however, there seemed to be some question concerning the need for plans as detailed as they had done the previous year for the preparation groups. To serve as a test on management ability, the class agreed it might be worthwhile and interesting for each group to plan and prepare a simple meal with one group observing and rating the preparation group. Since

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[8]See Appendix H, p. 67.

[9]See Appendix I, p. 68.

this was a morning class, a breakfast meal was selected which was to include: a fruit, a protein food, bread, and a beverage. Group rotation was worked out with each planning group using its own ideas in regard to details for the meal preparation. No amount of teacher suggestion could have been as effective in convincing the students that detailed plans for meal preparation are a necessity. Observation groups themselves stated that: (1) time was not well managed; (2) meals were not ready at the scheduled time; (3) kitchens were not kept and left in good order; (4) much wasted motion was observed; and (5) work was divided unequally among group members.

As might be expected, the second and third group rotation showed some improvement over the first as these groups had benefitted from observing previous groups. The class came to several conclusions as a result of this first meal management experience, namely:

1. Short class periods necessitate detailed scheduling of activities.
2. Careful advance planning can reduce unnecessary confusion during meal preparation.
3. Planning can result in more equal division of activities among group members.
4. Higher standards of work are more apt to be attained when planning is adequate.
5. Allowance of time for class members to become familiar with recipes, equipment, and kitchen arrangements is time well spent.

In summary, the group discussion was concluded with an expressed desire to try a more organized and detailed plan for the next meal preparation.

Several days were spent discussing possible divisions of activities, examination of forms provided by the teacher to be used in group activity, and in arranging groups for the next menu of the selected

menu patterns. The class was divided into two sections since our department has two kitchens. Each section was then divided into three groups consisting of four members each. The names selected for the groups were: planning, preparation, and special activity. Responsibilities and activities for each group were discussed and a tentative list was devised for each group. An individual folder was prepared for each group to be kept on file and used within the department. These materials as used will be found in Appendix F. Each folder contained a mimeographed copy of the responsibilities of each rotation activity. To assist the class in understanding just how the rotation plan would function, the groups participated in a mock rotation with an imaginary plan.

To facilitate learning, it soon became apparent that whole class participation in the study of basic materials would be necessary between actual meal preparation laboratories. Also, since most meal preparation would require two days--one for pre-preparation and one for the final preparation, there would be time for additional special study by groups not engaged in actual meal preparation. The possibility that the presentation of some material in the form of demonstrations and some in the form of reports would be of value to class members was considered and agreed upon by the group. The class decided this would make better use of the available time and equipment than for each member to study in detail all the desired information. The class felt that well prepared demonstrations and reports could be excellent learning experiences for both reporters and listeners. Standards were set up to be used as

guides in the presentation of reports and demonstrations.[10] Forms were developed for observers to complete in evaluating each demonstration.[11] These special activity reports and demonstrations were scheduled for later in the semester as the topics would fit in with the study at hand, but they were worked on when time was available within the special activity groups.

Since home experiences are an integral part of the homemaking program, a suggested list of related experiences is set up at the beginning of each unit of study. The students suggested that the class demonstrations might serve as the starting point for food related activities which could be carried out as home experiences.[12] Several home experiences developed from the class demonstrations.

In planning for the next meal which included an economy cut of meat, a green vegetable, a salad, rolls, cake, and a beverage, several problems were involved which required class study and also some review of information previously studied. Although a detailed study of meats had been included the previous year, a review of the cooking principles recommended for less tender meat cuts was given. The groups had all made rolls the previous year, but some had had no other experience so requested that a demonstration be given by the teacher. Cake making was also studied by the class with the teacher giving a demonstration on butter cakes. One class member who had previously had experience with making angel food cakes volunteered to demonstrate the procedure

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[10] See Appendix J, p. 69.

[11] See Appendix K, p. 71.

[12] See Appendix L, p. 72.

during the pre-preparation time for the meal her group would prepare. Following the demonstrations and study on cake making, class members again stated generalizations which they felt were applicable.[13]

The meal preparation which followed the plans selected and developed by the class for group activity in meal preparation worked out most successfully. Each individual within the groups assumed her designated responsibilities and since the overall plan for meal preparation was understood by all, it was much easier for work to proceed smoothly. Since this menu required one day for pre-preparation, one extra day was required for each group, thus making a total of nine days for the complete rotation. See Table I, page 48.

Since the improvement of personal nutrition practices was one of the objectives of the class for this unit, the class made a twenty-four hour record of food consumed after which each girl checked her food consumption by the Recommended Daily Dietary Allowance Chart. This was a new procedure for the group as in previous years only the Basic Four Food Guide had been used. In checking the class, it was revealing and somewhat shocking to note that many of the girls' intake of vital nutrients fell below 50% of the recommended amounts. This was quite a surprise to those who thought their nutritional status was adequate but proved to be otherwise when carefully checked. This led to the inclusion of several of these nutrients on the report list as the class felt they needed additional information concerning why the nutrients were needed and where they are found in foods.

Before the next meal was planned, a group discussion based on

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[13] See Appendix M, p. 73.

library readings was held concerning the management of food costs in relation to different income levels. The filmstrip, "Managing Your Food Dollars" from the Household Finance Corporation was shown and discussed. As a long range group activity project, each small group planned to use the information gained from this study in planning the menus for one week for a family of four including a father, a mother, a high school age daughter, and a junior high school age son. The menus were to be planned following a pre-determined budget based on low, moderate, or liberal income levels. This project was to be part of the group activity assignments as time became available when other groups were engaged in food preparation. This proved to be a valuable learning experience in that it offered an opportunity to practice meal planning principles based on the needs of individuals together with the use of information studied in relation to money management practices concerning foods.

The next meal preparation involved a review of the dry heat method of meat preparation, a study of new methods of preparing vegetables, and the new study relating to frozen desserts. The vegetable study was given in the form of a student demonstration. Class discussion was followed by an orderly rotation of groups. Some time was available during the special activity days for work to be done on demonstrations and reports.

The final meal involved special class study on the making of pastry since this had been omitted during the previous year. Demonstrations were given by the teacher showing the basic principles involved in the making of both one and two crust pies. These were followed by a demonstration by two students showing the mixer method of making pastry with

the new instant flour. This contributed to the achievement of one of the class objectives of keeping up with new developments in food. Several in the class were especially interested in pastry making and selected pastry making as a home experience since time did not permit class practice for all girls.

The last meal preparation continued as scheduled with the rotation of groups proceeding quite smoothly in spite of several interruptions in the class due to class meetings and other school activities. This made possible some practice in adapting to changing or unexpected situations and actually served as a learning experience in itself. An attractive bulletin board was prepared by one special activity group on the first day of the rotation showing a variety of types of pies. A suggestive list of bulletin board ideas was included in each group folder.

The remaining reports and demonstrations were given as time permitted and provided an opportunity for presenting some very interesting and valuable materials. One of the more interesting demonstrations was the preparation of a jiffy meal in twenty minutes which was both attractive and nutritious. Some interesting variations in the uses of mixes were shown by one group. The importance of snacks in the diet was the topic of another demonstration which used the filmstrip "Sparkling Taste Treats" from American Bottlers of Carbonated Beverages. A report on "Food Additives" presented very excellent material which was most informative for class members. The filmstrip on "Food Additives" furnished by Manufacturing Chemists Association added reinforcement for this report.

Early in December, the class requested that a change in the

original schedule be made in order to do some holiday cooking with emphasis on sugar cookery. In examining the plan for the unit the time which had been allotted to kitchen planning would provide the time needed for holiday cooking. Since the kitchen planning study had previously been included in the housing study, it was the wish of the group that this again be done. Since most of the girls had had some experience in making candy, but had not actually studied the principles involved in sugar cookery, this study proved to have greater depth and involved more learning than the group had anticipated.[14]

After the Christmas holidays, the final phase of the study in this unit was concerned with the selection of equipment for dining and included a study of china, glassware, silverware, and linens. Commercial bulletins and filmstrips served as the basic informational background and was concluded by each class member attempting to make a coordinated selection of equipment based on artistic design principles. An abundance of illustrative materials showing the wide variations in quality, design, and price was used. Emphasis was made throughout this study that an attractive table can be set from all of the different qualities of table appointments.

Each phase of study in this unit was carried out somewhat similarly in that, (1) each problem was discussed by the class as a whole; (2) a plan for solving each problem was developed; (3) an appropriate study of resource material was made; (4) group, individual, or whole class evaluations were made; and (6) student-stated generalizations were made as the various studies were completed.

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[14]See Appendix M, p. 73.

Evaluation by Teacher and Students

Evaluation was made throughout the progress of the unit and also at the completion. After each group rotation the entire class discussed the good points of the activity as well as the weaknesses. Suggestions for improvement in future activities were discussed and appropriate plans were made. Forms were used to assist both the group and the individual in evaluating the effectiveness of group and individual activities.

Several weeks after the close of the semester, the test given preceding the unit was repeated as the basis for post-test scores. Students were aware that a test would be given, but no specific time was announced for this to be done since it was the desire of the writer to note if any significant differences would occur between the scores. The results of this test were somewhat disappointing to both the teacher and the students as only limited improvement in scores was shown. Both students and teacher believed that the students had progressed more than the scores indicated as the group studies had covered a wider range of material than was included in the test.

The test pointed up the need for a more refined instrument for determining student growth following a series of learning experiences. The general indication, however, was one of growth or improvement. An analysis of the true-false sections of the test revealed that on thirty-one of the fifty questions students had shown improved scores, but on sixteen of the questions the responses were lower, and on three the response was the same as for the pre-test. In checking the number of students who showed improvements, it was found that nineteen of the twenty-four had shown improvement, four had lower scores, and one

remained the same. (See Table II.) The average score on this part of the pre-test was 34.87 while the average score on the post-test was 37.5 out of a possible score of fifty.

For the second test section which was made up of twenty-five completion questions, improvement was shown on twenty-three of the questions. Of the twenty-four students taking the test, twenty-two improved their scores over those of the pre-test while one remained the same and one had a slightly lower score. The average score on this section of the pre-test was 17.46 out of a possible twenty-five. The average score for this section of the post-test was 21.58.

Emphasis was placed on the development of students' abilities to make statements of generalizations in connection with each phase of study for the purpose of reinforcement as well as the possible carry-over of learnings to other new but related situations. The ability of students to draw generalizations from the work they had accomplished or observed definitely improved during the semester and the application of the information upon which the generalizations were based could be noted in the solution of class problems.

Evaluation was carried out for all types of activities during the unit through the use of varied devices most of which were supplied by the teacher and adapted as necessary to fit the needs of the group. Those used most frequently were meal preparation score cards, group activity reports, laboratory score cards, observation sheets, and subject matter tests. Copies of the most frequently used devices are included in the appendix.

Following an extensive review of literature and a re-appraisal of the writer's previous teaching methods and experiences, pre-plans were

TABLE II

COMPARISON OF TEST SCORES OF TWENTY-FOUR STUDENTS PRECEDING AND FOLLOWING UNIT

Student	50 True-False Score		25 Completion Score	
	Pre-Test	Post-Test	Pre-Test	Post-Test
1	27	31	19	22
2	28	30	19	22
3	29	25	14	21
4	31	38	16	21
5	31	34	16	21
6	32	30	14	22
7	32	36	17	23
8	32	33	14	21
9	34	33	10	11
10	35	42	13	25
11	35	37	19	22
12	36	36	17	17
13	36	39	18	22
14	37	41	17	22
15	37	40	23	22
16	37	42	20	24
17	37	39	17	21
18	38	41	21	24
19	38	41	17	22
20	38	42	19	21
21	38	42	18	22
22	39	44	16	22
23	40	39	21	24
24	40	45	23	24
Range	27-40	25-45	10-28	11-25
Means	34.87	37.5	17.46	21.58

made for a one-semester unit in food and nutrition which incorporated the concepts of management and consumer education with those of food and nutrition. Specific objectives and methods of procedure were co-operatively planned and developed by students and teacher. Evaluation, both individual and group, was a continuous process and was carried on preceding, during, and following the unit.

The achievement made by students and the evidences compiled largely by subjective techniques indicated that the concepts of management and consumer education can be successfully integrated with those of food and nutrition in a one-semester course. Group activity procedures become more effective when extensive planning precedes and accompanies the activity. Students' abilities to generalize improved after they were given frequent opportunities for making and using generalizations. Evaluation was a vital part of the unit planning and use; however, there is a need for the development of more precise instruments for evaluating student growth. The development of a limited number of concepts within a unit is recommended in order to allow for adequate development.

CHAPTER IV

SUMMARY AND PLANS FOR FUTURE USE OF UNIT

The trend of educators to attempt to narrow the gap between the vast amount of available knowledge and the limited ability of the individual to grasp it by identifying the basic concepts within subject matter areas to serve as the basis for concept-generalization teaching deserves further consideration. The basic belief of this writer that a usable knowledge of food and nutrition principles which when linked with those of good management and consumer practices can contribute to the welfare and happiness of future generations formed the background for the study.

Information and inspiration gained from a review of literature linked with the desire of the writer to be more effective in the teaching of an area so vital to the well-being of individuals and families were influencing factors in the selection of the problem for this study. Dissatisfactions with some of the previously used methods as well as the observation of the failure of students to practice the knowledge to which they had been exposed were two additional influencing factors. Believing that constant study of course content, teaching methods, and student needs and interests is essential if a teacher is to function effectively in our present society, this writer engaged in this action research type of study in an attempt to achieve the following purposes:

1. To plan the possible objectives for an advanced level one semester unit in food and nutrition integrated with the concepts of management and consumer education selected on a basis of previous experiences, needs, and interests of students.

2. To select a limited number of concepts to include in order to allow for adequate development of each.

3. To revise and/or improve present methods of teaching.

4. To develop and use the resource unit with students.

5. To attempt to evaluate the effectiveness of the unit during and after its use.

6. To develop recommendations to serve as a basis for future use and development of the unit.

Following extensive pre-planning by the teacher in the selection of tentative objectives and concepts which might be explored, a one semester unit in food and nutrition in which concepts of management and consumer education were integrated with those of food and nutrition was developed cooperatively and used with students in the Homemaking III class of Shattuck High School during the fall semester of 1965-66. The unit was started with a discussion of past experiences as a guide to consideration of present and future needs since this study would be the last formal food study for the majority of the class members. Specific goals were selected by the class and tentative plans for reaching them were made. These plans included individual, small group, and whole class activities as needed to reach the class objectives.

A variety of methods for determining the degree of success of this study were used, but more refined and objective devices need to be developed for such evaluation. However, there was sufficient evidence of improvement in classroom procedures, in students' abilities to plan and carry plans to completion, in students' attitudes and interest, and in students' abilities to summarize and generalize to cause the writer

to believe the study had accomplished its stated purposes.

The writer plans to continue to use the integrated unit with future advanced level classes and to continue to revise both the content of the course, the classroom procedures, and the methods of evaluation to meet the needs and interests of the groups involved.

Although an attempt was made to limit the number of concepts to be developed within the unit, it was found that even more extensive limitation was needed with greater emphasis on the most basic needs of students. Short class periods and unscheduled class interruptions were both challenging and frustrating to students and teacher and frequently necessitated alteration or adjustment of plans.

The dissatisfaction the writer had previously experienced with group activity was largely eliminated as a result of a vast amount of pre-planning by the teacher coordinated with adequate planning with the class. The basic difficulty of helping students organize the problem to be solved into equally meaningful activities is possible even in food classes where limited equipment necessitates the rotation of groups with three or more activities in progress simultaneously.

The writer plans to extend the use of group activity to areas of study other than food and nutrition using the same general procedure with only minor alterations or adjustments. The clothing area appears to be one that is particularly well suited to group activity and will be the next area attempted by this writer.

The initial attempt of the writer to devise a test to serve as one basis for determining the needs and growth of students will need additional refinement to make it more effective. Both students and teacher agreed that the test did not give an accurate evaluation of student

growth since much of the material included in classwork as the unit developed was not included in the test. However, a comparison of the scores on the test which was given both preceding and following the unit did show that with very few exceptions there was a general improvement.

As a result of this study in which the writer attempted to approach the teaching of this unit from a more scientific and analytical attitude, several conclusions have been reached which will influence the further development and use of the unit:

1. Students of the upper high school level have the ability to recognize some of their needs and to plan quite effectively for those needs when given only limited guidance.

2. Students generally show greater interest and enthusiasm for units of work for which they recognize a need and in which they have shared in determining the course content and the methods of procedure.

3. The selection of a limited number of basic concepts for a unit in order to allow thorough investigation and study is more effective than an attempt to include a greater number of concepts.

4. Very detailed planning by both teachers and students is essential if foods classes are to result in meaningful activity and learning for each individual class member.

5. Well planned small group activity serves an excellent purpose when equipment facilities are limited.

6. Continuous evaluation of individual and group progress is essential for determining the effectiveness of a unit and to give direction to a unit.

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APPENDIXES

APPENDIX A

ANALYSIS OF RECENT STATE CURRICULUM GUIDES

Grade 9 or Homemaking I

Areas in the Oklahoma Guide:	Others	Total
Nutrition and Health	6	7
Management, Storage, Safety	5	6
Consumer Problems	5	6
Table Service, Manners, Social Usage	6	7
Principles of Cookery	6	7
Other Areas Appearing in Some Guides:		
Food Preservation		1
Food for Children		2
Use of Commodity Foods		1
Cultural Aspects of Foods		1
Vocational Aspects of Foods		1

Grade 10 or Homemaking II

Areas in the Oklahoma Guide:	Others	Total
Nutrition and Health	5	6
Management, Storage, Safety	5	6
Consumer Problems	5	6
Table Service, Manners, Social Usage	6	7
Principles of Cookery and Meal Preparation	6	7
Other Areas Appearing in Some Guides:		
Food Preservation		3
Foods and Customs of Other Countries		1
Food for the Sick		1
Cultural Aspects of Foods		1
Vocational Aspects of Foods		1

Grade 11 or Homemaking III (Eight Guides)

Areas in the Oklahoma Guide:	Others	Total
Nutrition and Health	5	6
Management, Storage, Safety	7	8
Consumer Problems	6	7
Table Service, Manners, Social Usage	6	7
Principles of Cookery and Meal Preparation	7	8
Food Preservation	6	7
Quantity and Special Cookery	5	6
Special Dietary Needs	4	5
Other Areas Appearing in Some Guides:		
Food for Emergencies		1
Cultural Aspects of Food		2
Vocational Aspects of Food		1

Grade 12 or Homemaking IV (Three Guides)

Areas in the Oklahoma Guide:	Others	Total
Nutrition and Health	2	3
Management, Storage, Safety	1	2
Consumer Problems	2	3
Table Service, Manners, Social Usage	1	2
Principles of Cookery	2	3

(In addition to Oklahoma, the guides examined included: Iowa, Missouri, New Mexico, Florida, Kansas, New Jersey, and New York.)

APPENDIX B

Basic Objectives for High School Food Units - Developed with Dr. Helen Barbour, Instructor of FNIA 510, Problems in Food, Nutrition or Institution Administration

1. To acquire an intelligent understanding of and desire for good nutrition for self and family.

2. To develop the ability to plan, prepare, and serve attractive nutritious meals for different sized groups with appropriate understanding of the basic food principles involved.

3. To develop the ability to select, store, and conserve food wisely. (Marketing, storage, safety and sanitation, preservation.)

4. To develop the ability to manage time, energy, money, and other resources related to food selection, storage, and service.

5. To develop the ability to select, arrange, use, and care for equipment.

6. To develop aesthetic appreciation for food palatably prepared and attractively served. (Selection and use of appropriate table appointments, types of service, appreciation of standard product.)

7. To develop an appreciation for and enjoyment of the social and cultural aspects of food. (Hospitality, eating out, international aspect, hospitality.)

8. To develop some ability to evaluate information related to food and nutrition presented through mass media.

9. To develop an interest in the body of current scientific knowledge of nutrition, food processing, and preparation.

10. To understand how and develop ability to work democratically with others.

APPENDIX C

Previous Experiences in Food and Nutrition

Homemaking I

Unit Title: Fun with Food

Basic nutritional needs

Improving food habits

Care and use of basic kitchen equipment

Safe and sanitary practices related to foods

Recipe interpretation

Simple management practices

Family meals (breakfasts, lunches, suppers) including principles related to beverages, quick breads, eggs, soups, salads, casseroles, vegetables, simple desserts

Hospitality for family and friends

Table setting, service, etiquette related to meals served

Homemaking III

Unit Title: New Experiences with Food for the Family

Meaning and importance of good nutrition

Study of food nutrients

Planning, preparing and serving meals--luncheons, simple dinners, and buffet meals involving special techniques--yeast breads, meats, complex salads, less common vegetables

Buymanship studies related to foods emphasized.

Selection, care, arrangement of small kitchen equipment and appliances

Table service for family meals

APPENDIX D

Advanced Food Unit Objectives

I. To acquire some understanding of the nutritional needs of all members of the family throughout the life cycle.
To acquire some ability to adapt family meal patterns to meet individual needs.

II. To increase skill in planning, preparing, and serving meals involving more complex preparation techniques. (large and small groups, special occasions.)

III. To develop some creativity in the use of new products and the use of plentiful foods.
To develop some ability to evaluate the economy of home food preservation.
To develop some skill in food preservation.

IV. To increase understanding of the relationship between food costs and income level.
To develop some ability to plan efficiently within a limited budget.
To acquire some understanding of the importance of time and energy management in food preparation and service.

V. To acquire some knowledge of the requirements basic to an efficient kitchen arrangement.
To acquire standards for determining the basic requirements for a first kitchen.
To develop some skill in the use of less frequently used pieces of equipment or in improvising needed equipment.

VI. To understand the criteria for selecting artistic and suitable table appointments.
To increase skill in the use of standard types of table service.
To increase ability to recognize and appreciate the importance of high standards for products.

VII. To appreciate the true meaning and importance of hospitality.
To appreciate the value of and develop some skill in the use of accepted procedures for a variety of social occasions.
To appreciate and understand the customs of other nationality, religious, or social groups in relation to food preparation and service.

VIII. To develop an inquiring attitude toward food and equipment information.
To develop criteria for evaluating food information.

IX. To become aware of new developments in the field of food and nutrition.
To develop some appreciation for the scope of food science and its relationship to other fields.
To become aware of the vocational opportunities related to the area of food and nutrition.

X. To increase ability to participate effectively in group activity.
To develop ability to follow democratic procedures with a group.
To develop skill in analyzing reasons for success or failure of group activities.

APPENDIX E

MAJOR CONCEPTS AND BASIC GENERALIZATIONS RELATED TO ADVANCED UNIT OBJECTIVES

(As Pre-planned by Teacher)

I. Meeting Individual and Family Food Needs (Related to Objectives I-IV-VIII-IX)

a. The food needs of an individual change during the life cycle.

*b. The nutritional state of the individual depends largely on the selection of food and on the ability of the body to utilize the nutrients contained in the food eaten.

c. By careful planning it is possible for the homemaker to provide for the varied food needs of the individual family members.

II. Meal Management (Related to Objectives II-III-IV-VI-VII-X)

(Planning meals using a realistic family budget for different income levels; preparation of jiffy meals; meals for special occasions; food preservation.)

a. Knowledge of nutritional needs and food composition is necessary for planning adequate meals on any income level.

*b. Food that is well prepared and attractively served is likely to be eaten and enjoyed.

*c. Quick meals require careful planning to keep costs down and nutritional quality high.

d. Home preservation of plentiful foods may extend the family food budget and add variety to home meals.

III. Selection of Equipment for Dining (Related to Objective VI)

a. An attractively arranged table contributes to a satisfying meal time.

b. The selection of appropriate table equipment for a given family depends upon the family's tastes, interests, and income.

IV. Kitchen Planning and Equipping (Related to Objectives V - VIII)

a. The well arranged kitchen is the result of careful planning based on a knowledge of the principles of management.

b. Careful selection of equipment helps save time, energy, and money.

c. Equipment that is carefully selected fits the needs of the individual family.

V. New Developments in Food and Nutrition (Related to Objective IX)

(Evaluating information; career opportunities)

a. The informed homemaker evaluates the source of nutrition information before accepting it.

b. The area of food and nutrition offers varied vocational opportunities.

* From Teaching Nutrition by Eppright, Pattison, Barbour

APPENDIX F

GROUP ACTIVITY MATERIALS

SAMPLE OF FREQUENTLY USED ROTATION PLAN

The class of twenty-four students was divided into two sections--A and B. Each section was divided into three groups of four.

TABLE I

Plan for Group Rotation

Day	Groups		
	I-A - I-B	II-A - II-B	III-A - III-B
1st Day	Whole Class Discussion	Whole Class Discussion	Whole Class Discussion
2nd Day	Plan the Meal	Special Activity	Special Activity
3rd Day	Pre-Preparation	Special Activity	Special Activity
4th Day	Prepare the Meal	Plan the Meal	Observe Preparation Groups
5th Day	Evaluate the Meal	Pre-Preparation	Special Activity
6th Day	Observe Preparation Group	Prepare the Meal	Plan the Meal
7th Day	Special Activity	Evaluate the Meal	Pre-Preparation
8th Day	Special Activity	Observe Preparation Group	Prepare the Meal
9th Day	Whole Class Evaluation	Whole Class Evaluation	Whole Class Evaluation

GROUP ACTIVITY MATERIALS

SUGGESTED GROUP RESPONSIBILITIES

I. Planning Group

A. Plan menu following suggested menu pattern and determine amount of time needed for preparation and/or practice.
B. Locate recipes and adjust amounts to meet needs of group. Make out market order within a reasonable budget.
C. Work out time schedule for group and for individuals in group.
D. List and locate equipment to be used for preparation and service.
E. Be prepared for adjustment of plans to meet emergencies.
F. Check menu in relation to daily nutritional needs.
G. Plan for type of meal service to be used.
H. Plan for purchase of groceries and their care in the department.
I. Evaluate success of plans during and after their completion.

II. Preparation Group

A. Carry out plans made in Planning Group.
B. Do marketing for meal after making a final check of items in department.
C. Do pre-preparation or practice if needed. Be sure class knows of plans in order to adjust activities accordingly.
D. Prepare foods carefully following recipes and correct preparation methods.
E. Set table or arrange for assistance if needed.
F. Organize work in order to eliminate unnecessary confusion.
G. Keep working surfaces cleared of unnecessary equipment and supplies by replacing them after use.
H. Wash up dishes between major preparation as time permits.
I. Eat meal observing correct dining etiquette.
J. Clear table, stack dishes, properly care for left overs.
K. Evaluate meal planning and preparation activities for the group and for individuals within the group.

III. Special Activities Group

A. Serve as hostess for the department, answering door, placing attendance slip at door, etc.
B. Record class expenditures on permanent record.
C. Keep up an active price list on foods.
D. Plan and prepare special reports for class.
E. Prepare special demonstrations as needed.
F. Assist Preparation Group with table setting and/or clean up, if needed.
G. Secure copy of meal being prepared and plan for other meals of the day.
H. Prepare bulletin board related to topics of class interest.
I. Make a study of different types of table service.
J. Evaluate work of group both individually and as a group.

GROUP ACTIVITY MATERIALS

CUMULATIVE RECORD OF FOODS PREPARED

Name of student_____ Class_____

Foods:

Beverages
1._____
2._____
3._____

Breads - Quick
1._____
2._____
3._____

Breads - Yeast
1._____
2._____
3._____

Candies
1._____
2._____
3._____

Cereals
1._____
2._____
3._____

Cookies
1._____
2._____
3._____

Desserts
1._____
2._____
3._____

Eggs
1._____
2._____
3._____

Fish
1._____
2._____

Fresh Fruit
1._____
2._____

Fruit - Dried or Canned
1._____
2._____
3._____

Meats
1._____
2._____
3._____
4._____

Meat Substitutes
1._____
2._____

Meat Extenders
1._____
2._____

One Dish Meals
1._____
2._____

Sandwiches
1._____
2._____
3._____

Salads
1._____
2._____
3._____

Soups
1._____
2._____
3._____

Vegetables
1._____
2._____
3._____
4._____

Others

Dates: From_____to_____

Check with S if at school.
Check with H if at home.

GROUP ACTIVITY MATERIALS

Planning Group

GROUP NUMBER_____ SECTION_____

GROUP MEMBERS_____

MEAL TO BE PREPARED_____ DATE_____

MENU

RECIPES TO BE USED

Name of Recipe	Where Found

TYPE OF SERVICE TO BE USED

EQUIPMENT NEEDED FOR SERVING

GROUP ACTIVITY MATERIALS

MENU BEING PREPARED (to be filled out by Preparation Group and given to Special Activities Group)

_____

_____

_____

_____

_____

Number being served_____

Source of recipes for menu being prepared:

PLAN FOR OTHER TWO MENUS TO COMPLETE DAY'S DIET (for Special Activity Group)

GROUP ACTIVITY MATERIALS

Planning Group

WORK AND TIME SCHEDULE

Recipe	Work to be Done	Who Does This?	When to Start and Finish	Equipment Needed

GROUP ACTIVITY MATERIALS

Planning Group

INGREDIENTS AND AMOUNT NEEDED FOR EACH RECIPE

Name of Recipe	Ingredients	Amount Needed

GROUP ACTIVITY MATERIALS

Planning Group

LIST OF COMBINED AMOUNTS OF INGREDIENTS AND OTHER GROCERIES

(Used to check in kitchen for available groceries)

Ingredients and Amounts	Have	Need	Amount

Prepare a market order listing items to be purchased, the amount needed and the estimated cost.

GROUP ACTIVITY MATERIALS

All Groups

Teacher's Suggestions for Group Work

Group_____Section_____Responsibility_____

Date_____ Group Members_____

_____

Specific Suggestions for Carrying on Group Work:

Suggestions for Reporting Plans to Teacher and to Class:

Suggested Helps and References:

GROUP ACTIVITY MATERIALS

SUMMARY REPORT OF MEAL MANAGEMENT DATE_____

Group_____Section_____Meal Prepared_____

The most important facts we learned were: (include at least 3)

The jobs we did best were: (include at least 3)

Suggestions for future improvement:

APPENDIX G

EVALUATION DEVICES

Score Card for Meal

Section_____ Group_____ Date_____

Group Members_____

Meal_____ Score_____

A.	Selection of food.....20	
	Was the food suitable to the meal?.....5	_____
	Was the correct amount of food selected?.....2	_____
	Was the contrast in color, texture, temperature, and flavor pleasing?.....2	_____
	Did this meal provide its share of the day's food requirements?.....5	_____
	Did this meal provide for any new dishes?.....3	_____
	Were the foods in season?.....3	_____
B.	Preparation of food.....40	
	Was there good cooperation among group members?...6	_____
	Did each wear her own clean apron?.....5	_____
	Was the food still hot when served?.....4	_____
	Was the food prepared and arranged attractively?..4	_____
	Did the food have a good flavor?.....5	_____
	Was the food properly cooked?.....8	_____
	Were new ways of preparing food used?.....5	_____
	Did this meal provide an opportunity to learn to eat some kind of new food?.....3	_____
C.	Table Service.....20	
	Was the table set correctly?.....3	_____
	Was the table service correct?.....3	_____
	Was the table neat and attractive?.....3	_____
	Were correct table manners used?.....3	_____
	Did this meal teach us ways of serving food?.....3	_____
	Was the meal served on time?.....3	_____
	Was the table conversation interesting & suitable?2	_____
D.	Cleaning.....20	
	Was work done quietly?.....2	_____
	Did each do her own duty?.....2	_____
	Were left-overs put away properly?.....2	_____
	Was the floor left clean?.....2	_____

D. Cleaning (Continued)

Were towels and dish cloths properly cared for?....2	_____
Were dishes washed and put away properly?.....3	_____
Were the range and sink left clean?.....3	_____
Was the garbage properly disposed of and sink left clean?.....2	_____
Was a final check of kitchen made?.....2	_____
Total Possible Score.....100	_____

EVALUATION DEVICES

SCORECARD FOR LABORATORY WORK IN FOODS

Deduct 1 point from each of the 5 possible on each of the divisions below for each standard not met.

A. Appearance Counts
1. Apron clean and pressed
2. Provide own apron
3. Hair neatly groomed
4. Hands and nails clean
5. Dressed suitably for school kitchen

B. Work Areas
1. Space always available
2. Clean, orderly working area
3. Dishes and utensils properly cared for during preparation, (Washed or put to soak)
4. Tray, sink strainer or paper used for garbage, also disposer
5. Right space chosen for the work to be done

C. Use of Time
1. Efficient working methods used
2. Correct equipment chosen for each task
3. Unnecessary steps and motions omitted
4. Work completed in allotted time
5. Worker not rushed at end of period

D. Use and Care of Supplies
1. Correct amount of food prepared (Servings of correct size)
2. Heat properly regulated during cooking of food
3. Proper handling of supplies to prevent waste
4. Proper attention to food while cooking
5. Left-overs properly cared for

E. Ability to Follow Directions
1. Follows plan as outlined
2. Follows directions of recipe carefully
3. Does not rely on others for too much help
4. Asks few questions
5. Does not make mistakes in preparation

F. Manipulative Skills
1. Uses small equipment skillfully
2. Works quietly
3. Works quickly
4. Carries on different procedures easily
5. Works without suggestions or helps

G. Hygienic Habits
1. Hands washed as frequently as needed
2. Paper towels used for hands
3. Unnecessary or improper handling of foods and tableware avoided
4. Clean spoon used for tasting
5. Dishes washed and rinsed properly

H. Safety Pays
1. Pot holders used when needed
2. Burners and oven properly turned on; inflamable material kept away from heating unit
3. Floors kept clean and dry to prevent slipping
4. Cutting tools handled and stored correctly
5. Handles of utensils placed to avoid spilling of hot food

I. Proper Care
   1. Systematic stacking of dishes and utensils for washing
   2. Proper order followed in washing dishes and utensils
   3. Large equipment clean (ranges, tables, and cabinets)
   4. All small equipment properly stored
   5. Towels and dish cloths properly cared for

J. Table and Meal Service
   1. Selects suitable table appointments
   2. Sets table correctly
   3. Serves food attractively
   4. Uses suitable decorations
   5. Serves food correctly

Adapted from Check List for Food Preparation
University of Minnesota Press

SCORECARD FOR LABORATORY WORK IN FOODS

Rating of Section_____Group_____Date_____

Rated by_____

	Names of Girls				
A. Appearance					
B. Work Areas					
C. Use of Time					
D. Use and care of supplies					
E. Ability to Follow Directions					
F. Manipulative Skills					
G. Hygienic Habits					
H. Safety Pays					
I. Proper Care					
J. Table & Meal Service					
Score					
Rating - Score x 2%					

Use (') to indicate each deduction then subtract from the 5 points allowed for each division.

Adapted from Check List for Food Preparation
University of Minnesota Press

EVALUATION DEVICES

Food and Nutrition Test Name_____

Part I True-False

_____ 1. Poor nutrition can bring on aging in young people at an early age.
_____ 2. Lack of Vitamin A can cause a dry, scaly skin that is less resistant to infection.
_____ 3. Excess weight indicates a person has eaten too much of everything.
_____ 4. Broiling and braising are the same.
_____ 5. In order to make any dough mixture rise, one must have some method of generating carbon dioxide into the mixture.
_____ 6. In cake making, the proper ingredients are more important than proper mixing.
_____ 7. Yeast is a chemical substance which when added to water releases harmless carbon dioxide gas.
_____ 8. The two basic ingredients of pie crust are flour and fat.
_____ 9. Vegetables are best frozen immediately after harvesting with no further treatment.
_____ 10. The older the animal the more tender the cuts of meat may be expected to be.
_____ 11. Tender meat cuts should be cooked by moist heat to bring out the flavor.
_____ 12. Pork should always be thoroughly cooked in order to destroy the trichinosis organism which could be present in the meat.
_____ 13. The wholesale meat cut known as the round is located in the front part of the animal.
_____ 14. Certain vitamins are needed to help the body build bone materials from calcium and phosphorus.
_____ 15. Liver is lower in price than steak because it has less food value.
_____ 16. By milk equivalents is meant the amounts of other foods, such as cheese, which have the same amount of calcium as milk.
_____ 17. Scoring the fat on the edge of meat will prevent its curling while broiling.
_____ 18. When using a meat thermometer, insert the bulb next to the bone in the center of the meat.
_____ 19. To be certain of getting the necessary vitamins one should take vitamin pills even though well-balanced nutritious meals are eaten.
_____ 20. When a person wants to reduce in weight, she should eat less of all kinds of food.
_____ 21. A woman guest sits to the right of the host.
_____ 22. Low quality proteins can be improved by combining them with proteins from an animal source.
_____ 23. Homogenized milk is made from dry milk powder mixed with water.

_____ 24. After sifting flour, pack it tightly into a measuring cup to get an accurate measurement.
_____ 25. Flour is made from the endosperm of wheat.
_____ 26. Tomatoes are equal to oranges in Vitamin C content.
_____ 27. A person at complete rest requires no energy.
_____ 28. Vegetables are needed mostly for the protein they provide.
_____ 29. A high gluten flour is recommended for quick breads.
_____ 30. Potatoes au gratin is a fancy name for scalloped potatoes.
_____ 31. High temperatures tend to toughen protein foods.
_____ 32. Pie crusts which are baked before filling may puff or blister in the baking if they have not been sufficiently pricked.
_____ 33. When a cake shrinks from the side of the pan, it is overdone.
_____ 34. The larger the amount or the more expensive the processing of a food, the higher the price as a rule.
_____ 35. Fruits are valuable in the diet because of their carbohydrate and protein content.
_____ 36. Candy is a carbohydrate rich food.
_____ 37. Salad oil is a good source of protein.
_____ 38. Undermixing of ingredients may result in tough pastry.
_____ 39. The food needs of an individual decrease after middle age.
_____ 40. The low income family uses about the same percentage of its income for food as the high income family.
_____ 41. A generous food allowance assures families of being well fed.
_____ 42. Home preservation of food may be one way to extend the food budget.
_____ 43. The type of table setting and the way food is served has little effect upon one's appetite.
_____ 44. Quick or jiffy meals may be more expensive than those requiring more time.
_____ 45. Food additives produce harmful effects in foods and should be omitted.
_____ 46. Only approved information concerning diets and weight loss is permitted in magazines today.
_____ 47. People of today are informed to the extent that food superstitions do not exist.
_____ 48. The source of food information is a clue to its reliability.
_____ 49. Good management practices have wide use in food preparation and in the arrangement of equipment.
_____ 50. People with numerous food dislikes are apt to be poorly nourished.

Part II - Completion

1. The basic ingredient of meringue is_____.

2-3. The energy producing nutrients in milk are (a)_____ and (b)_____

4. Adults need protein mainly for_____

5. Yellow colored vegetables are rich in_____

6-8. The types of flatware for table use are: (a)_____, (b)_____, (c)_____

9-12. Name four types of table service: (a)_____ (b)_____, (c)_____, (d)_____

13-17. The homemaker who must feed her family on a limited budget without sacrificing their nutritional well-being might observe these practices:

(a)_____

(b)_____

(c)_____

(d)_____

(e)_____

18-20. Three types of dinnerware are: (a)_____ (b)_____, (c)_____

21-23. Yeast has three requirements for proper functioning:

(a)_____, (b)_____, (c)_____

24-25. Name two occupations or professions in which the knowledge of food and nutrition is basic to success:

(a)_____, (b)_____

Part III - Multiple Choice (Place the letter of the correct answer in the blank to left.)

_____ 1. To cut into small pieces is to (a) carmelize, (b) dredge, (c) mince, (d) cut in.

_____ 2. Vitamin C is found in (a) milk, (b) meat, (c) beans, (d) citrus fruits.

_____ 3. This wholesale cut of meat contains the T-Bone, Club and Porterhouse steaks: (a) Rump, (b) Chuck, (c) Loin, (d) Shank.

_____ 4. The quality of protein in meat is (a) the same, (b) better, (c) lower than that of a vegetable or cereal.

_____ 5. Marbling refers to (a) amount of red meat, (b) amount of fat embedded in meat tissue, (c) amount of connective tissue, (d) round steak.

_____ 6. The proper temperature for cooking a roast is (a) 225, (b) 325, (c) 425, (d) 525 degrees Fahrenheit.

_____ 7. The need for calcium is highest for (a) boys and girls from 13 to 19, (b) children 1 to 6, (c) mature men and women, (d) Pregnant and nursing women.

_____ 8. High quality proteins contain a larger percentage of (a) amino acids, (b) starch, (c) fat, (d) calories than low quality proteins.

_____ 9. Citrus fruits such as oranges and grapefruit are needed (a) daily, (b) twice weekly, (c) weekly, (d) monthly.

_____ 10. Vitamin A is found in the (a) mineral, (b) fat, (c) water, (d) sugar, (e) protein part of milk.

_____ 11. ½ cup is equal to (a) 8, (b) 12, (c) 16, (d) 20 tablespoons.

_____ 12. The food element needed for red corpuscles in the blood is (a) iron, (b) riboflavin, (c) niacin, (d) calcium.

_____ 13. Pound for pound fats contain how much more calories than carbohydrates? (a) 1½, (b) 2¼, (c) 3, (d) 4 times as much.

_____ 14. Carrots are rich in (a) Vitamin D, (b) Vitamin C, (c) protein, (d) Vitamin A.

_____ 15. If additional energy foods are to be added to a breakfast, which one of the following foods would provide the most? (a) cereal, (b) milk, (c) eggs, (d) fruit.

APPENDIX H

GENERALIZATIONS RELATED TO FOOD PRESERVATION

(as stated by students)

1. When foods are available at reasonable prices, home canning may extend the family food budget.

2. To keep well, canned foods must be processed properly and sealed in airtight containers.

3. The choice of a suitable canning method is largely determined by the acid content of the food.

4. Low acid foods, such as meats, require higher temperature (produced in a steam pressure cooker) than high acid foods (fruits) to control micro-organisms.

5. Molds and yeasts are destroyed by lower temperatures than bacteria which are more heat resistant.

6. The three methods most widely used in home canning are: open kettle, water bath, and steam pressure cooker.

7. Properly canned food will keep an indefinite length of time, but may lose some of its quality of texture and flavor if kept longer than one or two years.

8. Canned foods will retain their high quality longer if stored in cool, dark, and dry storage areas.

9. In using a pressure cooker it is wise to keep a close watch on the pressure gauge to keep pressure constantly at the recommended level for safety reasons and to assure quality products.

10. Only quality foods are recommended for home preservation.

11. Good jelly depends upon the presence of acid, sugar, and pectin in the proper proportions as well as upon the correct cooking time and temperatures.

12. A homemaker can be justifiably proud of attractive home canned foods.

APPENDIX I

MEAL PATTERNS SELECTED BY THE CLASS

Problem I. A breakfast consisting of a fruit, a protein food, bread, and a beverage. This problem was planned to assist groups determine the amount of planning that should precede class meal preparation.

Problem II. Economy meat cut, green vegetable, salad, hot rolls, cake, beverage. This problem placed emphasis on the moist heat method of meat cookery, yeast breads, and cake making.

Problem III. Broiled or roast meat, starchy vegetable, green or yellow vegetable (either a less common vegetable or a less common method of preparation), bread, frozen desert, beverage. This problem placed emphasis on dry heat meat cookery, vegetable preparation, and frozen desserts.

Problem IV. Fish or poultry, frozen green or yellow vegetable, gelatin salad, bread, pastry, beverage. This problem emphasized meats, gelatin salads, and pastry.

APPENDIX J

PLAN OF WORK FOR DEMONSTRATION

Name of Demonstrators:_____

Name of Demonstration:_____

Things to Show and Teach Throughout the Demonstration:

1._____

2._____

3._____

4._____

5._____

Illustrative Materials to be Used:

Recipe (Attach copy) Preparation Time_____

Market Order (Attach copy)

Utensils or Equipment Needed:

_____ _____ _____

_____ _____ _____

_____ _____ _____

Food Value of Food Prepared:

_____

_____

_____

Menu Plan Including the Food Demonstrated:

OBSERVATION OF A DEMONSTRATION

Name_____ Date_____

Name of Demonstration_____

Students Giving Demonstration_____

List the facts that were emphasized:

1._____

2._____

3._____

4._____

5._____

List points not clearly presented or which I did not understand_____

_____

List new terms or words learned from the demonstration_____

_____

List short-cuts or time saving products that were used or demonstrated

_____

List the nutritional value of the food prepared_____

_____

Were the persons dressed properly for a food demonstration?_____
Did they follow directions?_____
Was all the needed equipment out?_____
Did they understand what they were trying to demonstrate?_____
Was the food finished at the time planned?_____
Did the food look good?_____
Did the food taste good?_____

Write a short summary on the manner of presentation, organization of materials, illustrative materials, posters, appearance, etc.

Suggest possible improvements:

APPENDIX K

SCORE CARD FOR JUDGING FOOD DEMONSTRATIONS

DEMONSTRATOR	**30**	
Personal appearance, poise, posture, neatness	10	_____
Demonstrates so all can hear and see	5	_____
Self confidence and enthusiasm	7	_____
Lack of objectionable mannerisms	3	_____
Voice pleasant and clear	5	_____
DEMONSTRATION	**45**	
Subject matter:		
Interesting	5	_____
Appropriate	5	_____
Accurate	5	_____
Unusual	5	_____
Presentation:		
Appropriate introduction	2	_____
Adequate advance preparation	5	_____
Technique in handling materials and equipment	10	_____
Keeps within allotted time	2	_____
Orderly progress throughout	4	_____
Summarized at end	2	_____
RESULTS	**25**	
Was the purpose accomplished?	5	_____
Were the products good quality?	5	_____
Were they attractively served?	5	_____
If any mistakes, were they used to advantage	5	_____
Has it stimulated a desire to try the product?	5	_____
	100	_____

Comments by ovservers:

Taken from: DEMONSTRATION TECHNIQUES
by Mary Brown Allgood

APPENDIX L

POSSIBLE SUGGESTIONS FOR HOME EXPERIENCES

(add to this list as you think of other suggestions)

Buy groceries for a definite length of time.
Plan for and purchase small equipment for the household when needed.
Compare different brands of some articles to determine which does the best job and from which you get more for your money.
Clean, defrost, and care for the refrigerator.
Plan more efficient methods of performing household responsibilities.
Improve personal appearance through an improved diet.
Learn to like some new foods.
Plan proper storage of perishable foods.
Learn to preserve food (canning, freezing, drying).
Plan, prepare, and serve meals using flour substitutes such as oatmeal, potatoes, rice, etc.
Plan meals for an underweight or overweight person in the family.
Plan, market, and prepare family meals (one day a week for 6 to 8 weeks or all meals for one week).
Plan and carry out a birthday dinner for mother, or relieve mother of responsibility for a holiday meal.
Plan marketing with mother so that good buying practices may be learned while doing family marketing for a definite period of time.
Prepare refreshments for mother's club when it meets in your home.
Make mother a guest at the evening meal for a definite length of time.
Add variety to breakfast.
Help family to eat more vegetables by preparing them in new ways or more attractively.
Prepare the evening meal for a week, working hard for speed, efficiency, and variation in menus.
Make a study of food prices and compare unit costs for large and small quantities.
Make provision for adequate storage of different types of food: canned, staples, perishables, etc.
Provide interesting table arrangements, service, service, and decorations for special occasions.
Assist a younger family member to improve food habits.

APPENDIX M

GENERALIZATIONS RELATED TO CAKE MAKING

(as stated by students)

1. The way cake ingredients are mixed together has a lot to do with how the cake will turn out.
2. The success of a cake is judged by the texture, moistness, appearance, and eating quality.
3. Cakes that are baked in pans that are shiny have a lightly browned tender surface.
4. When baking a cake in a glass pan, lower the baking temperature twenty-five degrees to prevent overbaking.
5. When a cake is done, it will spring back after being touched lightly with the finger.
6. When icing a layer cake, a more uniform cake will result if the bottoms of the layers are placed together.

GENERALIZATIONS RELATED TO SUGAR COOKERY

(as stated by students)

1. Accurate measurement of ingredients and correct cooking temperatures are basic to success in candy making.
2. The two basic types of candy are crystalline (as fudge) and non-crystalline (as caramels).
3. Since sweets tend to curb the appetite, it is recommended that they be eaten at the end of a meal.
4. On humid days, candy mixtures may require longer cooking time in order for the syrup to reach the desired stage of concentration.
5. Success or failure in candy making is due largely to the ingredients, the cooking period, and the handling after cooking.

VITA

Eunice Ballinger Gordon

Candidate for the Degree of

Master of Science

Thesis: THE DEVELOPMENT OF AN INTEGRATED ADVANCED UNIT IN FOOD AND NUTRITION

Major Field: Home Economics Education

Biographical:

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Education: Graduated from Seiling High School, Seiling, Oklahoma, in 1930; received the Bachelor of Science Degree, with a major in Home Economics Education, from Oklahoma College for Women in 1934; attended summer sessions at Central State College, Colorado State University, Texas Woman's University, and Oklahoma State University; completed requirements for the Master of Science degree in Home Economics Education in May, 1967.

Professional Experience: Taught Home Economics and English in Mutual High School, Mutual, Oklahoma, 1934-1935; Home Economics and English in Seiling High School, Seiling, Oklahoma, 1935-1940; Vocational Homemaking in Watonga High School, Watonga, Oklahoma, 1940-1941; Shattuck High School, Shattuck, Oklahoma, 1955-1967.

Professional Organizations: Member of Oklahoma Home Economics Association, American Home Economics Association, Oklahoma Vocational Association, American Vocational Association, Oklahoma Education Association, National Education Association, Kappa Omicron Phi, Delta Kappa Gamma.