SUGGESTIONS FOR STRENGTHENING THE TEACHING OF FOOD PREPARATION IN OKLAHOMA HIGH SCHOOLS

By

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SUGGESTIONS FOR STRENGTHENING THE TEACHING OF FOOD PREPARATION IN OKLAHOMA HIGH SCHOOLS

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PREFACE

The study, "Suggestions for Strengthening the Teaching of Food Preparation in Oklahoma High Schools," grew out of a sincere interest in foods and the art of cookery with a desire to stimulate teachers to plan an approach to learning which would appeal to and interest students and which would give satisfaction and provide enriched learning experiences to all participating. It is a commonly accepted idea that a good program grows out of wholesome learning situations, meets the needs of real life experiences and develops the value of human relationships. A program for the teaching of foods necessitates a long-time view which allows for flexibility and continuity. It exemplifies principles and processes of good cookery; develops food appeal; challenges students abilities to plan and serve attractive, palatable and nutritive meals and trains individuals to extend hospitality through learning to become gracious hosts and hostesses.

Many teachers are not entirely satisfied with the way they teach and are eager to learn something that will help them to make growth a continuous process. After re-examining the techniques of teaching, material has been assembled in a form for teacher use in improving classroom procedures and strengthening foods work to meet the needs of students. It is hoped that this study will capture the interest of teachers, cause them to explore more deeply, and prove of service by showing ways of achieving values in the teaching of foods.

The writer wishes to express her deep appreciation and gratefully acknowledges the help given by Miss Rowan Elliff, Associate Professor

of Home Economics Education, through guidance, helpful suggestions, encouragement, and sympathetic understandings of the problems involved while making this study.

She is especially indebted to Doctor Millie V. Pearson, Head of Home Economics Education, Oklahoma Agricultural and Mechanical College, for the inspiration to attack the group work in food preparation and for offering helpful information and constructive criticism while compiling the material.

DEDICATED TO

Joan Blum, my teen-age daughter,

whose sympathetic understanding

and encouragement has made

this study a reality.

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PART I

MOTIVATING LEARNING

The goal many thinking people have set for a good home making program is that it meet the actual needs of individuals in classes and families within the community, stressing teamwork in family living.

Let us evaluate the program as it is now being taught in Oklahoma high schools---is it offering opportunities for choices; does it increase confidence in individuals; does it help children and youth to better understand themselves; and are teachers working with students as people?

Children and youth develop at different rates. They come to school with varying interests and concerns important to them. They have widely differing backgrounds. Teachers and those planning to be teachers should therefore strive to set up a program which has strong motivation for learning. Homemaking classes have an advantage in an attempt to set up a challenging curricular subject program using problem solving procedures which call for much activity. Participation in subjects calling for action usually are appealing to students and leads to far better learning. The motivation becomes urgent and vital. School work then provides deep and rich satisfactions to meet basic needs.

Leading educators believe teachers should strive to set in operation a curriculum which has meaning for learners, keeping in mind the level of their maturity and experience. To do this means the working together of teachers and pupils on the problems and interests of everyday living. In too many classes, fact teaching, covering a given number of pages and factual examinations are the frequent practices. Ellen H. Richards

believed that:

It does not pay well to strain one's mind and spend one's time to be sure of rattling off rules or facts, or a string of words in exact order, when there are so many principles lying in them which are rich in thought and information.[1]

Some teachers are striving to use up-to-date and excellent tools and methods of teaching while others rely upon what they remember of the methods by which they were taught. Pupils cannot learn in schools where all their thinking is done for them. No one single philosophy of education need be followed, application of common sense is the underlying psychological factor. The resourceful teacher is able to see and invent new practices and methods for teaching. The point has been made that, "The picture of education is an on-going, changing process rather than a completed and thoroughly consistent pattern."[2]

Teachers are aware of the need for change in teaching procedures but become discouraged in trying to bridge the gap between what philosophers say is the trend in education of today and that of yesterday. Mursell says:

Education is the shaping of personality. The shaping of personality always depends upon two related but distinguishable conditions. First, the person concerned must strive to deal with a challenge that is relevant to his interests, a challenge that has for him what is sometimes called "ego-relevance." Second, in striving to meet this challenge he must achieve a new organized mode of dealing with his environment. To put the idea in simpler but somewhat less precise language, the shaping of personality depends first on the arousal of the <u>will</u>, and second on the finding of a <u>way</u>.[3]

The aim back of all educational leadership from teacher to

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[1]Caroline Louise Hunt, <u>The Life of Ellen H. Richards</u>, Whitcomb and Barrow (Boston, 1912), p. 75.

[2]College of Education, The Ohio State University, <u>Educational Research Bulletin</u>, Vol. XIX No. 4, (Oct. 9, 1940), p. 395.

[3]James L. Mursell, <u>Psychology for Modern Education</u>, W. W. Norton and Company, Inc., (New York, 1952) First Edition, p. 15.

superintendent and board of education is to create the best possible learning situation for each child regardless of his ability to learn. According to Science in General Education:

> The purpose of general education is to meet the needs of individuals in the basic aspects of living in such way as to promote the fullest possible realization of personal potentialities and the most effective participation in a democratic society.[4]

Developments in educational psychology have brought about changes in methods of teaching. Children are entitled to all instructions necessary for their future and to all such instruction as tends to make better men of them. Much has been discovered scientifically about how people learn. Facts are not learned in isolated bits of knowledge, but must be given meaning through their use in stimulating situations and opportunity provided for examining concerns and solving problems in which pupils' are interested. According to Rugg, "a valid program of education must be constructed directly from the life of the pupil."[5]

A teacher needs rich resources to be able to develop the desire to learn on the part of the student and to be able to recognize the different approaches that will arouse interest in different individuals. Psychologists agree that interest is fundamental to learning and that which gives satisfaction tends to be repeated, while those things that are annoying tend to be avoided. Learning is more efficient when a student tries to master that which is within his ability, when the work he is doing brings success, and when it seems worthwhile to him. Mort and Vincent have made this suggestion: "Youth should not be made to hate

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[4]Science in General Education, Appleton Century-Crofts, Inc., (New York, 1937) p. 23.

[5]Harold Rugg, American Life and the School Curriculum, Gin and Company, (New York, 1936), p. 11.

study before he knows cause to love it. Good teachers in good schools try to help individual pupils, through experience and tryout, to find out what they can do best."[6]

Psychologists believe that each individual possesses talents and that talents are needed to run the world. As each talent is uncovered it must be developed. In order to develop and mature talents in each student as fully as possible a variety of experiences are needed. Each individual must be given an opportunity to cope with concerns and problems and to accept responsibility. In the words of Mort and Vincent, "Pupils come to have the trait we call responsibility by having been given responsibilities."[7] These responsibilities must be on the level of the students ability; school life should be organized in such a way as to give students increasing experience. All through life situations will arise which involve the making of choices, or decisions. Youth must be encouraged to take responsibility and helped to make choices wisely. While growing more mature emotionally, socially, and intellectually situations will include more complex relationships. According to Science in General Education, "Careful guidance of the student's experience is called for, instead of the constant imposition of adult plans and points of view."[8] There is no absolute way of achieving this characteristic of responsibility, clearly, the methods used in teaching may aid the student's growth in self direction or they may retard such growth.

The maximum development of each individual irrespective of birth, economic status, race, creed, or color should always be the goal of

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[6]Mort and Vincent, op. cit., p. 23.

[7]Ibid., p. 25.

[8]Sci. in Gen. Ed., op. cit., p. 52

general education. This brings about enhanced enjoyment of individual living as well as a contribution to society in general. Individuals should be given the right for free expression and the right to exercise their own initiative but the development of human personality must not be confused with individualistic action. One group of educators have made this point, "Unrestrained individualism cannot be tolerated in a democratic program of living, for the living of each must be such as to allow others the realization of their potentialities."[9] Living in America has shifted from an agrarian to an industrial economy; we are interdependent; new and more effective ways of working together must be devised; one must see how his own acts influence the welfare of all; the individual must respect viewpoints which differ materially from his own and there must be a vital sharing of interests and a working together to promote more wholesome relationships. Democracy if it functions is based upon the use of one's own intelligence and faith in the intelligence of fellow man. According to Bernard Mehl:

> The free schools of the United States were established with the idea that all children are to be educated to such a degree that no one single group can claim complete control of the intellectual power by which to dominate the political, economic, and social decisions which affect the entire populace.[10]

Our schools can encourage and help the student to study the effects of his actions upon the actions of others and the role he plays in bringing about better human relationships.

The earlier the person has an opportunity to develop the habit of

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[9] Ibid., p. 56

[10] Bernard Mehl, "Educational Criticism: Past and Present," Progressive Education Vol. 30: No. 5, (March, 1953), p. 158.

making decisions the greater the number of learning skills he will have developed to serve him in examining concerns and solving problems as they arise in his daily life. Problem solving or decision making is done through reflective thinking. Reflective thinking has been defined as "that kind of thinking which may appear when a problem arises that finds no ready solution."[11] The process of reflective thinking as it goes on in the process of living may be analyzed in the following manner:

1. Sensing a need or a situation (realize that a condition exists which might be bettered, that a problem has arisen and recognize clearly what the problem is).
2. Analyzing the situation and locating the problem with sufficient accuracy to attack it.
3. Formulating tentative hypotheses (these may serve as a starting point for observation and may suggest further modification of a hypothesis).
4. Testing and acting on the most promising hypothesis (recognize what things previously learned may contribute to the solution of the problem; use imaginary experiments; refer to reference books).

In good teaching it is important to distinguish between problems which interest students and those which are proposed arbitrarily by the teacher. Interests vary. That which will give rise to a problem and arouse interest in one individual may be of no interest and not a problem or a concern to another. Curiosity may be responsible for arousing a concern in a young child which changes and expands into a problem as the child develops in relation to his environment. From very simple concerns

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[11]Sci. in Gen. Ed., op. cit., p. 308.

which demand little more than observation and manipulation the teacher can lead his students on to problems--the solution of which depends to a greater extent on formulating hypotheses and establishing generalizations.

According to Science in General Education:

> Obstacles to reflective thinking lie both in the personalities of individuals and in social envoronment. There are emotions, prejudices, feeling of inferiority or insecurity, that may either impel a person to rush into hasty and ill-considered action to destroy his curiosity, numb his interest, and paralyze him for effective action. One of the ways to encourage reflective thinking is to help the student become emotionally secure, so that he can feel safe in being actively curious, so that he is not afraid to act on the basis of tentative judgements, and so that he can tolerate new ideas and suggestions.[12]

A resume of some outstanding beliefs and basic principles of education include: prevention or preventing the formation of undesirable habits before they arise; recognizing when students are ready for learning experiences; promoting the desire to learn and mutual stimulation in working with others.

With this concept of the reasons for success in education a quotation from Confucius, the great sage of China, as he speaks of The Ideal Teacher is pertinent:

> The superior man guides his students but does not pull them along; he urges them to go forward and does not suppress them; he opens the way, but does not take them to the place. Guiding without pulling makes the process of learning gentle; urging without suppressing makes the process of learning easy; and opening the way without leading the students to the place makes them think for themselves. Now if the process of learning is made gentle and easy and the students are encouraged to think for themselves, we may call the man a good teacher.[13]

The school curriculum will be greatly improved when we instill into

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[12] Ibid., p. 314.

[13] Claude M. Fuess and Emory S. Basford, Unseen Harvests, A Treasury of Teaching, The Macmillan Co., (New York, 1947), p. 342.

students, parents, and teachers the idea that success in a subject studied can be measured through means other than a grade. Mursell says:

> If succeeding could only mean reaching the highest levels of achievement, schools and teachers could not organize effective success experiences, and there would be no way in which we could shape the motives and evoke the purposes of ninety-five percent of our pupils.

> If a person sets out to achieve something, he can feel that he has succeeded if one or more of five things happen: (a) if he wins the commendation of persons who have prestige for him; (b) if he gains a reward that seems important to him; (c) if he has the experience of working effectively with other people in competitive or co-operative relationships or both; (d) if he is aware of his own improvement; (e) if he has the experience of some measure of competence or mastery in what he is trying to do.[14]

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[14]Psychology For Modern Education, op. cit., pp. 91, 90.

PART II

TEACHING FOOD PREPARATION TO AID STUDENT GROWTH

Original Plans for Group Activity

Leaders and teachers in Home Economics Education seem to be agreed that there is need for improvement in the teaching of food and nutrition at the secondary school level in Oklahoma. In order to determine the value of this opinion and to find reasons to recommend specific changes in the program it seemed appropriate to study present practices being used in teaching the principles of cookery in Oklahoma high schools.

The primary purpose in teaching food preparation as well as all phases of education is to create the best possible learning situation for students according to their varying capacities and needs. According to Stratemeyer, "Studies of children show that each child has his own rate, pattern, and ultimate level of development," and the school curriculum if good, "must offer varied experiences and a wide range of acceptable standards of achievement."[15] State leaders in the homemaking field, administrators, superintendents of schools and teachers of home economics have expressed opinions which indicate that there is a generally used teaching procedure in the organization and presentation of foods at the secondary level. While the general procedure is subject to a variety of interpretations and no two teachers are teaching exactly alike the common class procedures used in high schools throughout Oklahoma are known as the group activity plan. This plan, according to Doctor Millie V. Pearson, Head of the Home Economics Education Department, Oklahoma Agricultural and Mechanical College, a pioneer in the use of the group

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[15]Florence B. Stratmeyer with the assistance of Margaret G. McKim and Mayme Sweet, Guides to a Curriculum for Modern Living, Teachers College, Columbia University, (New York, 1952), p. 5.

activity idea for the teaching of homemaking in the state of Oklahoma, includes:

> all class procedures necessary to solve a problem and refers to a class organization which permits the attacking of class problems from several different angles simultaneously by dividing the students into small working groups thereby rotating the use of equipment.

The original purposes for developing this type of class organization were:

1. To provide more nearly homelike problems for students by providing a school environment similar to that found in the surrounding homes.
2. To give students more opportunities for social development through working together in small groups to solve common problems.
3. To broaden the scope of home economics, including more of "personal, home, and family life," and decreasing the amount of time spent on food, shelter, and clothing.
4. To lessen the expenses usually incurred by such departments by necessitating the use of more of the equipment all the time.
5. To enable teachers to handle classes equal in size to those in the other subjects taught, by making students assume responsibility for securing their own knowledge.[16]

The procedure suggested in the study of a foods problem using group activity is to have a whole class study the nutritional needs of the group; the planning of menus to meet these needs; the determining of meal patterns to be followed and the special problems to be attacked, then the division of the class into small groups that rotate in planning, preparing and serving meals which meet the criteria decided upon. The unique characteristics of the method as originally developed, taken from a summary of Pearson's dissertation, "A Study of Professional Home Economics Educational Courses in the Light of the Democratic Ideal," are

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[16]Millie V. Pearson, Group Experiences in Homemaking Classes, Oklahoma Agricultural and Mechanical College, (Stillwater, Oklahoma, 1940), p. 8.

teaching food on the meal planning basis in relation to the needs of the individual and the family group rather than through the presentation of only theory in food classes, and the preparation of single isolated dishes or portions of dishes. Group experiences, if efficiently used in food classes are a means of integrating problems in housewifery, home management, consumer-buying and health with the study of food and nutrition through an attempt to attack a problem from several angles simultaneously. The experiences of each group of students in each type of activity call for the studying, planning and carrying out of certain processes as well as the evaluation of the results obtained. Through evaluation, summarizing, analyzing and comparing results in the review of steps taken in the various type of activities students may find they have learned the same things but through different processes and different laboratory experiences. By using this general procedure a vast amount of information may be covered and the factual content may be put to use by the individual. Students may thus see and understand relationships and the value of learning to work together to arrive at a single goal.

The over-all scope of the teaching of food as it is now seen in operation seems to follow this procedure; teachers and pupils plan class goals and the organization to be followed at the beginning of the eight or nine week's unit. Such planning does not eliminate detailed pre-planning by the teacher. On the contrary it makes such pre-planning imperative. Pearson writes:

> No teacher can satisfactorily guide students in the planning, execution and evaluation of learning without having first thought through the many possibilities and having made much preparation for offering suggestions which help students to select and weigh possible courses of action.[17]

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[17]Millie V. Pearson, Foods; Teacher Pre-Planning, Mimeographed Copy, (May, 1949), p. 1.

The food class works in relation to a meal. The planning and preparation are done through group work. Group work is done in rotation under four such general headings as: Planning, Preparation, Table Service and Kitchen Care, and Hostess and Special Study. Group work calls for careful guidance in directed groups seeking and organizing pertinent, available material. It requires much authorative material on the high school level and the development of ability to assemble, use, and organize materials so that they have meaning and appeal.

It must be recognized that successful use of the plan requires ingenuity, organizational and managerial ability on the part of a teacher. There have been modifications in the original plan that have decreased the effectiveness of group teaching. Herein lies the chief cause of dissatisfaction in its use. It therefore presents a real challenge to teachers and to teacher educators. With the homelike kitchen arrangement in Oklahoma schools this plan seems necessary--how can the teacher learn to use the plan in such a way that she can justify the experience as one of educational value and not merely the following of routine? If group work becomes mere rotation of responsibilities it is routine not creative learning, and teachers are merely getting a job done and not teaching problem solving. Good planning for real learning likewise requires careful analysis and organization. When planning is done in terms of accepted purposes it has meaning for pupils and they consider it as an important part in the learning sequence. The teacher has the responsibility for the supervision of the activities of all groups working simultaneously in a laboratory which may be provided with not more than two food preparation centers. Some departments have only one center for preparing food. The purpose of this type of laboratory as originally conceived is to

present homelike working conditions and learning experiences similar to those which will occur in the typical Oklahoma home. This laboratory was originally devised to meet the need for economy in furnishing home economics departments.

The general plan if used requires superior directing, supervising, and planning ability as well as skill in working with people on the part of the teacher. Only a very limited amount of time can be allocated for individual student assistance. It is difficult to guide simultaneously the functioning of several types of activity and to develop skills and understandings acquired in the classroom which will be carried over into homes. Frequently pupils tend to repeat processes and practices with which they are familiar, and do not learn new procedures or trends. This is particularly true in food preparation--especially when limited preparation space is available. Although such a plan uses the minimum amount of equipment it requires careful planning on the part of the teacher and the pupils to make sure that both understanding and skill are developed. To some observers there seems to be much wasting of time and lack of interest on the part of many students who are participating in a food class. Pearson recognized that many teachers need much guidance in using this plan in teaching food preparation. A question frequently arises: wherein may this program be improved to encourage students to accept responsibility, create interest, motivate desire for new learning, acquire needed skills and develop broad principles which may be applied in future teaching-learning procedures?

Problems Vital to a Well Organized Program

This study does not suggest discarding the teaching of food in relation to a meal, for good teaching must develop out of situations

similar to those found in every day living, but raises the question of giving more opportunity for practice lessons referred to as a part of the original idea and as suggested in the outlines prepared by graduate students under Pearson's supervision to include the development and application of many principles of food cookery pertinent to the meals planned. Practice lessons as the term is used in this study means actual performance or application of procedures frequently enough to insure not only the obtaining of knowledge but developing skill through repeated experience. Individual practice lessons may vary. Through rotating the use of equipment each student may have the opportunity to prepare foods and perform other necessary operations under careful supervision. Planning, arranging time, and record keeping is imperative. Some practice lessons may be provided using group experimentation. Such practice should be preceeded with a general class discussion. There are other practice opportunities which may be provided by using demonstrations and home practice. When such practice is used evidences should be obtained to show that work has been done and done satisfactorily. Most frequently the term is used to indicate opportunity for the individual to develop specific techniques.

The application of facts and the retaining of knowledge is difficult in nutrition. To present material in a challenging manner requires ingenuity, alertness, and comprehensiveness on the part of the teacher. Cooking knowledge is only one part of the problem. Ability to manage time and preserve good human relations is also important. In the secondary schools boys and girls are beginning to see themselves as adults in their own homes. In what way can we challenge their initiative to learn to feed family members in order to safeguard health; or a more baffling

study might be to know how much of the family dollar to spend for food and how to induce individuals to learn to eat that food which they need but are determined not to like? Beulah I. Coon, agent for studies and research in home economics has this to say about education:

> In this country we recognize that education cannot be "given to" an individual. We know education does not result from the pouring in of knowledge, but rather from the development of abilities, attitudes, and understandings--a process requiring the active participation of the individual. Education does not consist primarily of "knowing something," but rather of the power to use the knowledge in living, the power to examine more fully, to live more richly. An educated person acts intelligently, is sensitive to the needs of others, and works more and more cooperatively with others for the good of all.[18]

While many teachers appear to be satisfied with their present organization of teaching and their interpretation of group work in the presentation of food in the four year program of vocational home economics others are alert to weaknesses. State supervisors and teachers raise these questions: Wherein do the weaknesses lay? How can the teaching of food and nutrition be strengthened and yet be practical within the physical plant that provides not more than two food preparation units for the entire department with the enrollment varying from fifteen to thirty? An analysis of these questions suggests others:

1. Are we covering basic essentials for which we are responsible, not the dry bones of the subject, but stimulating the students curiosity as to the why of certain phenomena, what the meaning is, and allocating adequate time for consideration of problems?

2. Are the present practices in the teaching of food meeting the needs of students to the fullest extent possible?

3. Are we trying out new patterns, recognizing what should be done and what can be done in order to encourage problem solving technique in the teaching of food and nutrition?

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[18] Beulah I. Coon, Home Economics in Colleges and Universities of the United States, Vocational Division Bulletin No. 244, Home Economics Education Series No. 26, p. 2.

4. Are we encouraging students to do decision-making?

5. Are the goals in view clear and definite?

6. Do teachers give the impression that their values are absolute and that they know what is right?

7. Are we encouraging students to set standards or to accept the teachers standards?

8. Are we using preconceived standards, whether they be good or bad, indifferent or wholly undesirable?

9. Are we teaching students to work intelligently together in large and small groups?

10. Are we examining our daily, monthly, and yearly activities and eliminating that which no longer serves an important purpose?

11. Are we presenting learning experiences which challenge the learner?

12. Are we encouraging or relying too much on home experience without adequate guidance to supplement our teaching procedures?

13. Are we giving students in high school home economics classes an opportunity to learn to prepare one food in many ways and to observe the results of scientific procedures--to discover and apply principles in laboratory practice and to use these principles in the home in one unit or over a period of years?

14. Are we teaching students to use time wisely in food classes and to have a respect for home economics?

15. Are our generalizations meaningful and do they imply the need for action or are they too vague or completely lacking?

These questions serve to point out broad generalizations which require study on part of teachers and leaders in home economics if improvement is to take place. They are not new, however, to stress their importance, a review seems necessary. Some of these genaralizations that teachers have accepted include:

1. Nutritional needs for healthy individuals can be evaluated through a working knowledge of the Basic Seven in terms of the nutrients each food group contains.

2. Supervision during meal planning, checking of recipes, making of time and work schedules, calculating food costs and marketings, as well as the actual preparation of a meal is warranted and necessary.

3. The preparation of foods should be taught in terms of planning well balanced meals. More learning results when students are given an opportunity to develop and use principles of cookery from the standpoint of nutrition and palatability. Meal planning alone is not sufficient.

4. The teaching of nutrition in order to meet pupils' needs and to develop interest necessitates skillful planning.

5. Ingenuity is required on the part of the teacher and purpose on part of students to prevent them from memorizing scientific facts to retain them only until a grade is given or until they pass the course. Students may memorize what they do not understand, they may learn to perform operations called for without knowing the why, and they can be helped to structure situations and thus learn to understand the relationship of the parts involved.

6. The teaching of scientific facts related to food preparation to give meaning and to clarify needs of students, is done more efficiently when practice lessons are provided and used.

7. Intelligent buying in foods can be taught through a unit in marketing, correlating the material with actual problems of buying foods to be served at school and at home.

8. Principles of motion and time economy may well be used to improve the teaching of management procedures in food classes. They may include problems such as: foods from the refrigerator and storage area, dishwashing, adequate storage space, selection, care and correct use of equipment, the selection of good working procedures for the job, and the best working procedures for the job.

9. Up-to-date files of material, conveniently located and arranged help students to locate information needed for problem solving.

10. Entertaining and extending sincere hospitality within one's resources both in time and money and making one's guests feel at ease is a desired accomplishment which will require training and experience on the part of the host and hostess and careful guidance on the part of the teacher.

11. Knowing and using desirable table manners requires practice through supervised instruction.

12. Writing invitations and regrets is an art developed through good training and use.

13. Learning to apply principles used in stain removal and laundry requires seeking information and applying facts found in actual use and formulating the findings in terms of basic generalizations.

14. Applying techniques of efficient housewifery requires business-like planning developed through systematic practice and use.

An analysis of the problems that arise in the teaching of food will serve to indicate the complexity and urgency of the teaching situation. At the secondary level of education there are numerous problems that arise in teaching a food unit. According to Education for Home and Family Living, "if teachers are to keep home economics work alive a well-rounded program must be presented."[19] As Oliver C. Carmicheal put it:

> The dynamic quality of Education is lost if the subject matter is not some how related to life. The desire for knowledge, an important educational objective, is developed by bringing the students face to face with real problems in such way as to arouse a desire to resolve them.[20]

A broad program in the food area in homemaking will include selection, preparation, serving, conservation, and storage of food.

When the teacher knows that learning begins at the level of the students ability and starts where their needs and interests are she will study pupils and the local situations in a community. To determine the needs and interest of pupils in food classes a survey or check sheet, or teacher-pupil conferences and teacher-pupil planning are valuable procedures. After the teacher knows where to begin she must plan ways of keeping students alert and willing. Education for Home and Family suggests:

> The next problem is to arouse interest and to keep it stimulated. Again, no set pattern can be given. Each teacher should know her group, the situation, and the ways of creating interest in a particular unit.

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[19]Issued by Shelby M. Jackson, Education for Home and Family Living; A Guide for Organizing and Teaching Homemaking in Public Schools, Bulletin No. 651, Baton Rouge, Louisiana, (1948), p. 74.

[20]Oliver C. Carmichael, "Neglected Areas in Education," Reprinted from the Forty-seventh Annual Report of the Carnegie Foundation for the Advancement of Teaching, for the year ending June 30, 1952, through the courtesy of the author. Bulletin: American Association University Professors, Vol. 38: No. 3, (Autumn, 1952) p. 359.

This approach is essential if the desired results are to be attained. The personality of the class members as well as that of the teacher will make each interest approach different.[21]

A desired goal in a food class is to have a group of girls enjoying planning, selecting, preparing, and serving nutritious and pleasing meals at school and home. To make laboratory work in food purposeful requires doing.

Working in the kitchen is a serious responsibility but can be fun if one learns to manage work rather than letting work manage you. Cooking requires imagination, ingenuity and originality because it is both a science and an art. If students and teachers are to work together in a unit harmoniously doing problem solving it is wise to establish some desirable habits and practices to be set up in the kitchen to indicate the direction of growth. According to Alice M. Child and Kathryn B. Niles:

> The goal of food study should be to develop the ability to plan meals and to select and prepare food, so that optimum meals for the family may result with a reasonable expenditure of time and effort, and the wise use of money.
>
> If students possess a knowledge of nutrition and the scientific facts and principles which explain why certain practices are accepted and others are not, they are more likely to prepare appetizing meals which will furnish adequate nutrients at a reasonable cost, and less likely to continue practices which have been shown to be unsatisfactory.[22]

The writer does not assume that at the secondary level of education students will have a need or an interest in detailed chemical analysis of foods. Teachers introducing nutrition must not pour out a series of subject matter and facts assuming that by some magic the student will

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[21]Education for Home and Family Living, op. cit., p. 74.

[22]Alice M. Child and Kathryn B. Niles, Food Preparation Studies, John Wiley and Sons, Inc., (New York, 1938), pp. iii, 1.

fuse the unrelated material automatically to produce an educated person. The writer believes that in order to make nutrition meaningful to high school students the teacher must be alert in presenting scientific facts in such terms that students can understand them and see them in relationship to their own needs. According to Carmichael:

> While the acquisition of facts adds to one's knowledge, it may not contribute to understanding. Learning unimportant facts or failure to interpret significant ones is equally sterile. The requirement of more course reading matter than the student can digest may retard rather than aid educational progress. The conscientious student who day after day stretches his mind to encompass a large body of material without time to reflect on it may develop bad intellectual habits and a warped judgment as to the meaning of education. Too great emphasis upon breadth of knowledge without adequate attention to depth and meaning is a too common error.[23]

The following objectives indicate the direction of effort and outcomes which many teachers feel are desirable in a food class. They believe that it may be expected that the student will:

1. develop the desire to improve food habits.
2. develop acceptance for foods that have not previously been included in the diet.
3. prepare foods so they are appetizing, appealing and so that they retain the maximum amount of the natural food value.
4. develop a desire to repeat the process or processes in cookery which are most likely to produce the most attractive, palatable, and nutritive product.
5. enjoy preparing foods for the family.
6. develop a need for evaluation of finished products.
7. be able to plan menus, adequate in nutritive value within keeping of the family income.
8. develop the skill to manage time, energy, and equipment effectively when working with foods.

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[23]Bulletin; American Association University Professors, op. cit., p. 363.

9. Learn to work and to feel responsible for keeping the surroundings in order and to develop habits of personal cleanliness.

Planning will include such steps toward meal preparation as: menu making, checking of recipes clearifying techniques, and making of time and work schedules. Before students can be expected to plan and serve adequate meals they should first be given the opportunity to understand the development of the Basic Seven,[24] its true meaning and value in meal planning. Meal planning should raise this question--how does one know and develop good food habits? Good nutrition means right eating, better health, and happier lives. H. F. Kilander writes:

> Nutrition is now a science because enough facts have been discovered through research to form a scientific basis for determining what foods we need to eat. We no longer need to depend upon hearsay, folklore, or tradition to be our guides in regard to what we should or should not include in our diet.[25]

If students are encouraged to plan and check menus on a week or a ten day basis a greater variety of foods will be provided. It is a safe way to calculate food nutrients to meet the body requirements. The many factors which influence menu planning such as age, sex, occupation, activities of family members, season and climate, experience and equipment available need to be considered. Age, sex, and activities are frequently considered the three most important points.

A meal must be more than nutritious, it must have eye appeal as well as taste appeal. In order to assist students with their menu planning and selection of recipes recent literature such as cooking encyclopedias, cookbooks, magazines and newspapers which contain authorative information

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[24] The Wheel of Good Eating, Eat Foods From Each Group Daily, American Institute of Baking, Chicago, Illinois, (1945).

[25] H. F. Kilander, Nutrition For Health, McGraw-Hill Book Company, Inc., (New York, 1951), p. 3.

concerning the preparation of foods should be conveniently located. There are many ways and methods of preparing food. There are approved approaches--good food is based on a collection of good patterns for cooking. To become a good cook it is wise to start with a basic pattern in order to lay a good foundation and to learn the fundamentals for the procedures or processes which are most likely to produce the most attractive, palatable, and nutritive products in the preparation and serving of simple good foods. Good food is based on high standards and good patterns for cooking with consideration to proportion, relationship and effect. The need for this is emphasized by these statements of Susan Adams Mueller:

> Speaking of good cooking patterns, take biscuits for instance. If you have a good biscuit pattern, then you can easily make delightful quick cinnamon rolls; you can make old-fashioned strawberry shortcake, so light, crisp, and tender it actually does melt in your mouth. You can make a savory pie or crisp meat turnovers. There is nothing to equal that basic pattern for laying the foundation. With these fundamentals mastered, you can branch out into the most elaborate menus with no hesitation, for elaborate menus are simply fundamentals with frills. Every woman knows that her basic dress is the most valuable gown in her wardrobe. Once you invest in this dress variations are simple. This is just as true for basic food patterns.[26]

Teachers who use the problem solving technique encourage students to determine cooking procedures to preserve valuable food nitrients and develop habits of cleanliness and sanitation in working with food. A bit of research dealing with the principles of cookery might reveal variation of practices and need for stressing simple but important needs in the teaching procedure. Turn back the pages of history in the teaching of foods to eggs. History pertaining to egg cookery shows that emphasis has been placed on different factors. Not too many years ago teachers thought it most important that the egg be washed just before

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[26]Susan Adams Mueller, How-To-Cook Book, A. A. Wyn, Inc., (New York, 1951), p. 14.

breaking--because the shell of any egg had bacteria which may be spread if precaution for cleanliness was not observed. Today quite a different factor receives more stress--skill in breaking an egg by slightly tapping it with the cutting edge of a silver knife. No mention is made of cleanliness. Are both points not important? The stressing of scientific facts in processes of cookery along with skill, techniques, and manipulation in meal preparation need to receive just attention. The need for teaching sanitation might be further emphasized. All too frequently a worker in a commercial or a home food preparation center blends ingredients, tastes food, and continues food preparation using the same piece of equipment without stopping to wash it, never thinking of the millions of germs spread which are as harmful to bodies as lack of the proper nutrients. Care and use of equipment is another point of importance. Most homemakers agree there is no substitute for careful buying and good management. The life of good cooking equipment is not determined by the price nor its beauty but through proper use, treatment, and care it will render many years of service. To make food work practical the question then arises--are the little but important things being neglected in the area of food preparation?

Need for Supervised Experience

In order to eradicate some of the poorer household preparation practices supervised experience needs to be given in the preparation of food, especially that which utilizes the principles developed. The writer believes effective ways of making what is taught useful and usable are:

1. The teaching of scientific facts and principles, to give meaning and to clarify needs of students, is done more efficiently when practice lessons as previously defined are provided and used.

2. The teaching of food cookery through teacher demonstrations, teacher-pupil demonstrations, pupil demonstrations, and commercial demonstrations is valuable if followed by practice lessons.

3. Standards of food preparation can best be evaluated and developed when real materials are used that show contrasts between good and poor products. The money spent for providing such material is well used.

4. To make cooking interesting and results more certain, students need to understand the principles underlying the cooking of different foods rather than to blindly follow the cookbook.

5. At the secondary level of homemaking education in Oklahoma the space and equipment available limits the use of practice lessons and calls for skillful planning on the part of the teacher if the teaching skills in food preparation is one of the objectives.

Planning in a Food Class

In a food class provision must be made to distribute responsibilities to insure equal opportunities for learning experiences. There will be individual and group responsibilities rotating around problems of menu making; staying within a budget; marketing; food preparation; laundry; selection of equipment; care and use of equipment; table service; table manners; securing information; working well with others; completing tasks undertaken within a given length of time; and learning to work and to use good study habits. If such experiences are to stimulate growth, responsibilities must be more than assigned duties. They must become a part of one's way of living for when anything is really learned it affects the way people live. According to Mursell, "the only means we have of affecting the way people live and to shape their personalities is to get them to learn things.[27]

Cooking is like most jobs, planning makes it easier. To relate school experiences to situations found in most homes requires planning for buying carefully in order to make a budget stretch. A wise homemaker checks recipes against ingredients on hand and makes a market order.

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[27]Psychology For Modern Education, op. cit., p. 29

It takes planning to learn how to prepare each separate food for a meal. Good planning requires that some foods be prepared in advance of actual meal preparation. Hot foods to be served are planned considering the amount of oven and range space. Efficient planning calls for an order of preparation to insure that all foods are to be ready to serve at once. Sarah Field Splint says:

> This matter of serving hot food hot and cold foods cold happens to be one of those fundamental rules which no woman who aspires to be a good housekeeper can make light of. It just has to be done, however it is accomplished.[28]

It takes planning to make days come out right to insure the functioning and order of simple things which play an important part in the happiness of the homemakers home life.

Importance of Selection of Foods

High school boys and girls show a great interest in food, therefore, it is an excellent opportunity to teach a liking for a variety of foods and the effect eating habits play in determining the amount of pep and energy one has as well as the effect on appearance and personality. This is in agreement with Throckmorton:

> Food is important to the high-school girl both from a nutritional point of view and from the effect of diet on appearance and personality. Girls at this age are especially sensitive to overweight and to skin blemishes and are apt to follow unwise practices to correct such conditions. The approach to proper diet through the avenue of personal appearance should appeal to the high-school girl. Right attitudes toward a well balanced diet, good food habits and a scientifically questioning mind toward food fads need emphasis.[29]

This is the time when homemaking teachers can create or kill interest in foods.

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[28]Sarah Field Splint, The Art of Cooking and Serving, Proctor and Gamble, Cincinnati, Ohio, (1934), p. 1.

[29]Issued by Adel F. Throckmorton, A Guide for Home Economics, Kansas Secondary Schools, (Fall, 1949), p. 104.

The average American family spends a large percent of the income for food. Conserving nutritional elements in food preparation and making meal service attractive are important to the economic welfare of the family. Cost alone is not an indication of a good meal, foods chosen for their nutritive value though low in cost will pay larger dividends in health than expensive foods chosen at random. Food need not be expensive to be delicious. Shrewd homemakers serve food that is less expensive yet high in nutritive value and delicious because of the way it is prepared. According to some authorities, Americans waste from twenty to thirty percent of the food produced each year in the United States. One fourth to one third of this huge waste takes place in the homes through unintelligent selecting, incorrect preparation, improper storage, preparing food in too large a quantity, and leaving food on the plate. These factors add to the importance of selection in food classes. Throughout the unit emphasis should be placed on intelligent buying and knowledge of food costs, selection of quality, the wise use of labels, the interpretation of advertising, the formation of good shopping habits, and the storage and care of food.

In America traditionally the father is considered responsible for the financial support of the family and the mother responsible for the health. Health is wealth--the richest person in the world becomes the poorest when he has lost his health. Intelligent selecting and careful buying play a most important part here. Food shoppers will plan better use of their money through the use of a budget. The more limited the budget the more careful the plans need to be to meet the family's nutritional requirements. Marketing can be done more economically and a better variety will be had if menu planning is done on a weekly or ten day

basis. Menus planned in advance are subject to change. Often changes are made because of better buys offered at the market or the arrival of guests. Even with many changes preplanned menus will serve as a good take-off to thriftier household management. Records being unavailable in Oklahoma the writer surmises that a greater percent of the homes plan meals, not in advance, but just before each meal.

During a period of rising prices it is particularly important to exercise good buying judgment. Practical information for consumers need appears on labels of food. New publications are constantly being issued which describe types of labels. Many contain clever drawings and are informative and easy to read. They may furnish pertinent information telling what to look for on labels to obtain the best money value as well as protection against misbranded products.

A market is a place to learn through comparing and studying labels. Consulting newspapers for food specials can be used beneficially in teaching food selecting procedures. Field trips to grocery stores to learn to select produce to study labels and sizes of cans; to butcher shops and to frozen food lockers are recommended and will give experiences in every day living.

Food Preservation

Knowing when it is wise to preserve foods at home will aid in planning well balanced, interesting meals, at a reasonable cost. Choice of method to be used whether hot water bath, open kettle, pressure cooker, drying, freezing, preserving, pickling, salting, smoking or cold storage depends upon the home situations. An interest in food preservation may be intorduced through a display of a wide variety of home canned food, a display of spoiled food caused by mold, yeast, or bacteria, and a display of recommended canning equipment. As the New Mexico State Guide

has noted,"to make the unit fit the needs of the pupil, experience should be based on a nutritional standard that is attainable in terms of the money the family has to spend for food and what can be produced at home."[30] Producing foods at home economically is one means of stretching the food budget. The unit in food preservation in Oklahoma might be in the spring, during strawberry season and at the time when spinach and peas are available or in the early fall when there is an abundance of pears, peaches, green beans and tomatoes. Products may be available on the market for a varied food preservation program and at a reasonable cost which may not be obtained at a later date. Introducing a school activity or home projects here might well emphasize production and use of garden vegetables and fruits from the back-yard garden or family orchard. Producing one's own food is a means of cutting food costs. Gardening is one phase of the project and a carry-over of food preservation when food is available for canning and thereby extends the program of the class room.

Achieving High Standards in Food Preparation

At the secondary level of education it is not assumed that one food course or the four year program in homemaking instruction will develop excellent cooks. Child and Niles call attention to this when they say:

> Manipulation, skill, the recognition of desirable standards, and management ability are achieved only through much practice. However, one term of instruction in this field may accomplish a great deal in a relatively short time, if optimum use is made of various techniques which have been developed.[31]

To become a good cook requires more than the blind following of a

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[30]Tom Wiley, Department of Public Instruction Superintendent and Mary Gillespie, Division of Vocational Home Economics Supervisor, Homemaking; A Suggested Guide for Planning Learning Experiences, State of New Mexico, (1951), p. 159.

[31]Food Preparation Studies, op. cit., p. 1.

recipe. Good cooking doesn't just happen and it isn't luck. Beginners can learn to be good cooks by learning a few basic rules about using a reliable recipe. There are rules and reasons in cooking just as there are rules and reasons in interior decorating, book keeping, or playing a piano. The effect of mixing, the effect of heat, the effect of time, the effect of ingredients, the effect of overmixing is to mention only a few of the causes determining the quality of the finished product. Frequently we hear such conversation as, "I had good luck with my pie today," or "I had bad luck with my muffins yesterday." Luck causes neither the success nor the failure of a product. Ruth Berolzheimer has made this point:

> To become a good cook means to gain a knowledge of foods and how they behave, and skill in manipulating them. The recipe by itself, helpful as it is, will not produce a good product; the human being using the recipe must interpret it and must have skill in handling the materials it prescribes.[32]

Luck will play a less important part in culinary art when students are given the opportunity to prepare and evaluate a food through different methods of cookery using experimental procedures. Through reading and doing and not just talking students have products for comparison which will help to develop intelligence in cooking procedures. Oral reports in class by students is a means of covering a vast amount of material. How effective or how much knowledge is retained by this method is open to question. This point is emphasized by Pearson, who points out that "benefits lay in the reading, not in the reporting of it."[33]

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[32]Ruth Berolzheimer, The American Woman's Cook Book, Culinary Arts Institute, Garden City Publishing Co., Inc., (New York, 1940), p. 1

[33]Millie V. Pearson, A Study of Professional Home Economics Education Courses in the Light of the Democratic Ideal, (1941), p. 173.

In family centered meal preparation, when one is the cook as well as the waitress, there are certain things to take into consideration: a meal should be nourishing, a meal should be reasonably easy to prepare, and should give the family pleasure in the way it is served. To work efficiently in the kitchen teachers strive to develop the realization that good organization saves time and energy through the establishment of desirable habits and practices. The slogans, "A place for everything and everything in its place" and "Let your head save your heels" are worth advocating in all working areas. Equipment used and returned to the proper place saves energy and time. Using principles of management in a cooking area is an art. Time and energy can be spared through use of time saving techniques. If we want a student to learn something we must make that thing a part of his environment, so that he may see it, live with it, be influenced by it. A repetition of instructions on basic subjects such as food habits, cooking principles, and good housekeeping is desirable throughout the unit.

The following points may serve to summarize some of the general objectives to be striven for in food preparation:

1. Ability to practice efficient management of time, energy, orderliness, and cleanliness in the kitchen.
2. Ability to work at a reasonable speed.
3. Ability to use many techniques of preparation.
4. Ability to practice good work habits during food preparation.
5. Ability to measure accurately and to be economical of food supplies.
6. Ability to use basic principles of cookery in practice and in meal preparation at home and at school.
7. Ability to prepare and serve attractive foods when and wherever foods enter into the program.
8. Ability to prepare and have ready to serve more than one food at a time.

9. Ability to use and care for equipment in foods laboratory.

10. Ability to see and understand relationships of ingredients such as amount of flour to milk, baking powder to flour, fat to sugar, and others in basic recipes.

11. Ability to plan and serve nutritive meals meeting the daily requirements.

12. Ability to use table service correct for the occasion and to apply individual initiative in improving table manners.

13. Ability to do efficient planning to keep linens ready for use at all times.

14. Ability to develop and apply generalizations.

The Family Meal

It is at the table where the members of the family meet most often. In many homes, this is about the only time that the whole family comes together for any length of time, so it behooves homemakers to make family meals pleasant. Mealtime is a time for sharing interests, for cementing human relationships with the family or family and friends, and for good fellowship. Graciousness and warm hospitality should rule. In most homes the use of table etiquette and style of food service need to be chosen with common sense to insure enjoyment of the meal. Well-bred people avoid display and do only as much as one can do well leaving the extreme expressions of style to those who have money and servants to carry them out. Honest motives and ease in management can develop a social life that is simple and charming. Beth Bailey McLean says:

> In the ideal family life, table service, table manners, and table conversation should be essentially the same, whether there is company or whether there is just the family group. Meal planning and table service are too often thought of in terms of entertaining guests. Actually, good meals, well served to a well-mannered family, are of great importance to the health and happiness of the family group.[34]

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[34]Beth Bailey McLean, Meal Planning and Table Service, Charles A. Bennett Publication, (1949), pp. 18 and 15.

Table service standards should be within vision and financial reach of the students. The goal is to encourage girls to know how to set a cover in good taste and to see that the direct application of school work to their own homes and to the homes they will occupy as hostesses. As McLean points out, "we should teach them to be ingenious, original, and clever in furnishing a dining room and in serving meals proportionate to their income.[35]

In teaching table service information from many authorities should be available. This is the one time in food preparation that it seems desirable to agree on the use of one reference. This apparent realization became evident through research in the Home Economics Practice House at Oklahoma Agricultural and Mechanical College. Through a study it was learned there were fourteen different ways to fold and place napkins. All are correct but confusing to the learner. Therefore, using one writer as an authority for a well-set table seems advisable in the homemaking education program.

Summary

The over-all purpose of the work of the foods unit is to develop in students the ability to plan and prepare efficiently, serve effectively, and preside graciously. The teachers enthusiasm portrayed while working with the group will have a decided bearing upon how much students are stimulated to use what they have learned in their present homes and their homes of tomorrow. One of the greatest problems of teaching is how to stimulate the maximum possible development of the

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[35] Ibid., p. 159.

student's abilities and to eliminate the natural tendency of wanting to use preconceived standards whether they be good or bad, indifferent, or wholly undesirable. This is a challenge to the teacher, her responsibility is great, and she must have definite clear cut concepts which she can document because her influence reaches far into the future.

PART III

TECHNIQUES DESIGNED TO IMPROVE THE TEACHING OF FOOD PREPARATION

In the study of food preparation there are an unlimited number of approaches which will help stimulate the interest of boys and girls in the important fundamentals and scientific bases which underlie approved practices and processes in food preparation. There is a need for students to acquire a clear conception of what satisfactory food standards are through laboratory experiences designed to develop skill, to perfect techniques, and to gain control of manipulative processes in meal preparation. Home Economics supervisors and teachers in the secondary schools of Oklahoma seem to be agreed that there is need for improving the teaching of food and nutrition. It is obvious that a study dealing with all the problems involved would be too complicated and too consuming to attack. The specific problem selected for study was: "How can the teaching of food preparation in Oklahoma high schools be strengthened?"

The major hypothesis upon which this study was based assumed that the teaching of foods to high school boys and girls could and should be improved. Basic assumptions which seemed fundamentally important for arousing interest in problem solving techniques were:

1. More real learning will take place and better food practices will result when teachers get a clear idea of and teach students how to develop the ability to think through problems in the planning of meals and the preparation of food, to generalize on the basis of experimentation, to check with authority and to conciously apply the generalizations arrived at in school and at home.

2. It is essential and desirable that teachers be alert and use ingenuity in presenting meaningful scientific material during the study and preparation of food to avoid having students learn a hodgepodge of facts which may not be at one's command to solve problems when needed.

3. If devices are developed or made available whereby students can evaluate their own achievement and check their progress toward the goals set, one may anticipate greater progress than if production itself were the sole goal.

4. If certain aspects of the course are analyzed so that relevant and important materials are stressed, students are more likely to master essentials.

5. If students as well as teachers have clearly in mind the goals toward which they are striving more rapid progress is to be expected.

6. Student learning will be stimulated as the teacher develops her own ability to use sound psychological procedures.

7. Teachers need to know how to think themselves in order to develop critical thinking or real problem solving ability in students.

Teachers need to recognize the many types of learning activities that must be provided within the total food area and organize activities so the class group can work with one activity at a time during the earlier stages of teaching in developing concepts of behavior and clarifying standards. This can be done by using a variety of teaching techniques. After broad concepts have been developed and standards accepted the group procedure may be used to an advantage in developing ways of working similar to those used in homes. However, it must be recognized that the supervision of a group of students attacking a problem from many angles simultaneously taxes the ingenuity and endurance of even an experienced, well prepared teacher. It means that more opportunities need to be used for studying ways of teaching foods in Oklahoma high schools.

Home Economists as teachers in the Oklahoma secondary schools face the challenge to enrich and broaden the work now being given in food

classes to meet the needs of those being taught. Teachers working alone and teachers working together need to look critically for both strengths and weaknesses in their present offerings to build a more functioning program.

Basically the role of the teacher is that of directing learning experiences which will promote the fullest possible growth and development of the individual student. According to Ivol Spafford, "Final responsibility for what education means to students rests largely in the hands of the teacher.[36] Team work and faith in those who are trying to help are essential in the foundation of any good school.

Teaching to be valuable must have direction. To do good teaching teachers need to have tentative, worth-while, usable plans which represent up-to-the-minute thinking centered in learning units of sufficient scope to be interesting and challenging to both teacher and student, yet sufficiently limited to make it possible to attack problems intelligently. L. Thomas Hopkins makes this point, "The only excuse for teaching is to produce learning of higher quality than children can achieve without a teacher."[37] What the student learns in foods work depends in part upon the learning experiences he has. Many strengths exist in the present practices of teachers in planning learning experiences, however both teachers and supervisors agree that two major weaknesses exist. The first is: Much teaching is subject matter centered. The Second is: Many teachers are trying to find one pattern to follow instead of teaching pupils to think and apply what they have learned.

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[36]Ivol Spafford, Fundamentals in Teaching Home Economics, John Wiley and Sons, Inc., (New York, 1951), p. 28.

[37]L. Thomas Hopkins, Interaction: The Democratic Process, D. C. Heath and Company, (Boston, 1941), p. 141.

Such teachers are merely doing a job for the job's sake rather than teaching for growth. In relation to the first many teachers seem to believe that certain home economics subject matter is important to teach in foods and that this requires preplanning which must be followed in detail. Others say that detailed direction destroys initiative and that such teaching usually results in having students memorize to hand back to the teacher. The second weakness is in trying to find a single pattern for teaching foods. It is extremely doubtful if a common pattern can be found or that if found it would be desirable. In fact there is much evidence in the educational literature that patterns hinder rather than promote class work. Teachers who seek a class pattern are losing many of the values in other good practices--food work becomes impractical, new ideas are not tried out, laboratory work results in doing a meal for the meal's sake. To attain the larger goals, teachers need to improve the conditions of learning. This involves studying and doing a great many different things; using a wide variety of teaching procedures; learning pertinent information pertaining to the preparation of foods by exploring, experimenting, and carrying out different projects. Finally such values are summarized by organizing the facts learned into generalizations and principles to be used and applied in meeting other situations as they arise.

Developing Behavior Known as Thinking

There are many techniques of teaching which develop in students the behavior known as thinking. According to B. Othanel Smith, "We are concerned in teaching with the improvement of thinking."[38] The processes

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[38]B. Othanel Smith, "The Improvement of Critical Thinking," Progressive Education, Vol. 30: No. 5, (March, 1953), p. 129.

of reflective thinking are often referred to as problem solving. They include training for critical thinking, mastery of concepts, understandings, and the development and application of broad generalizations. To teach students to use problem solving, the teacher needs to have a knowledge of how facts are learned, synthesized, and ratained and how they are selected, utilized, and manipulated in the problem solving process. The kinds of situations to which the problem solving teachnique may be applied are numerous in food preparation. In reaching the depth and breadth of the study the general range includes problems geared to making students think. Such problems might be solved by individuals or by groups. The principles used in problem solving to develop students ability to think critically and intelligently need to be related to the various kinds of tasks involved in the multitude of different situations that constantly arise in families.

A guide for use in food preparation was developed in order to help teachers clarify the role of the teacher in problem solving. This guide is adapted from the outline prepared by the Citizenship Education Study in their pamphlet PROBLEM SOLVING.[39] The guide is in outline form and is presented to indicate the general range from which problems may arise:

. . . problems which the individual meets
preparing food which is appetizing, appealing, and nutritious
proper and attractive table setting
good manners and etiquette
improving food habits
accepting food not previously included in diet
preparing family meals
wise buying
acquiring good patterns for cooking
understanding principles underlying the cooking of different foods

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[39]The Citizenship Education Study sponsored by the Detroit Public Schools and Wayne University, Problem Solving, (January 5, 1948), p 1.

. . .problems of small groups
sharing responsibilities
working out good organization to help students grow and develop
managing procedures to save time and energy
establishing desirable habits and practices
working together harmoniously

. . .problems of larger groups
working intelligently together
recalling, acquiring, manipulating, and applying facts to new situations
accepting responsibilities
doing more than one's share of the work
developing skills to meet challenges in every day living

. . .problems of the neighborhood
cooperating with children to give feeling that mother and dad are people, not just parents
cooperating with the home economics department
encouraging students to prepare foods at home remembering a little praise for honest efforts and a little help more effective than ridicule
making the backyard garden a family project
food preservation for the family

. . .problems of local communities
working together to create a warm friendly relationship with business and professional groups and individuals
making use of resources available
give special talks or being willing to contribute to community good
encouraging and using display windows
providing opportunities for quantity cookery by inviting and encouraging students to plan, prepare and serve special meals

. . .problems of the nation and the world
keeping open minds pertaining to preparation and preservation of foods
serving nutritious meals for less money
eliminating food waste
reading and demanding proper labeling of food products
conserving nutritional elements in food preparation

The study "Application of the Thinking Process in the Teaching of Homemaking," made by Neva L. Johnson presents an example of a specific teaching situation to show how teachers may direct others in reflective thinking and to guide high school students in the development of the ability to recognize, understand, use, and apply generalizations in a limited area of food preparation. It presents an analysis of reflective

thinking in terms of teacher guidance and student thinking; outlines a suggested teaching procedure to show how teachers may direct others in a series of experiences designed to develop reflective thinking; and makes recommendations as to how teachers may use the methods suggested in the application of the thinking process.[40]

This study is concerned with teaching students in secondary education to think critically in foods by making problem solving methods usable and improving problem solving ability. Benjamin Burack, in his article, "Methodical Aspects of Problem Solving," defines a problem by saying, "As soon as an individual becomes aware of a difficulty, he has a problem."[41] This observation is true in all areas of living. Problems, rather than the blind following of a recipe, create and stimulate interest in foods. In meal planning and preparation unlimited problems develop to broaden the scope. Some illustrations are: how many ways are there to prepare one kind of food; which process best retains the maximum amount of the natural food value and leaves the food appetizing and appealing; what methods are most desirable in preparing foods for cooking; why should one learn more than one method of cookery; what utensils should be used; which method of combining ingredients will give the most desirable texture, flavor, and appearance; how can food be served attractively; which table service is most suitable for the occasion; is the table attractive; are guests seated properly; are the duties as host or hostess formulated clearly?

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[40]Neva L. Johnson, Application of the Thinking Process in the Teaching of Homemaking, Oklahoma Agricultural and Mechanical College, (Stillwater, Oklahoma, 1952).

[41]Benjamin Burack, "Methodical Aspects of Problem Solving," Progressive Education, Vol. 30: No. 5, (March, 1953), p. 135.

In the planning of three meals a day there will be problems of different scope: thrifty meals; meals quick and easy to prepare for family or guests; outdoor meals; lunch boxes; meals for two; dinners for busy or business housekeepers; holiday meals; meals for serving a crowd; and refreshments for special occasions. A challenge to students in Homemaking III and IV food classes might be planning and preparing menus typical of faraway places such as England, France, Sweden, Finland and many other countries.

Each new unit in foods, if properly introduced, will present many major problems of concern and interest. This will necessitate selecting and wording a problem to serve as a starting point. A problem clearly and accurately stated and sufficiently limited in scope is half solved. One mistake teachers make is to try to solve several problems at the same time, however, this does not mean that one should not be aware of smaller problems which may be a part of the larger problem.

Critical and creative thinking should be encouraged in individuals when setting up tentative solutions as possible ways of reaching conclusions or solving problems. What ways can be thought of by which the problem can be solved: where is reference material to be found; what part of the problem needs laboratory experimentation; can this problem be solved in a group or is it an individual concern? The overall objective in setting up a tentative hypothesis is to see possible ways of solving the problem. There is no accepted classification of problems whereby psychologists might suggest using certain methods for some problems and other methods for different ones.

Working on the problem calls for recalling information pertinent to the problem or a spontaneous integration of past experiences. In

so doing the individual may ask himself, what are the principle factors which appear to be related to the solution of this problem? This will help to determine the kind of additional information needed. Books, newspapers, pamphlets, magazines, government publications, illustrative material, field trips, film strips, and demonstrations provide a variety of sources for the gathering and selecting of pertinent material related to the problem. It is an absolute requisite that the individual have at his command the relevant informational materials with which to work. This point is stressed by Eugene L. Gaier in his article, "What the Teacher Needs to Know About the Role of Knowledge in Problem Solving." To make this emphatic he further states:

> The student must come to recognize in the problem situation the responsibility to assemble materials and to develop plans and try out hypotheses. Facts are involved in the problem-solving process in three ways: (a) the student can memorize what he does not understand; (b) the student can learn to perform operations called for without knowing the "why"; and (c) the student can be helped to structure situations and thus learn to understand the relationship of the parts involved.[42]

In analyzing and interpreting information and in drawing a conclusion to formulate concepts students often attempt to remember the solution to similar problems rather than to solve each new problem independently. Others may not be able to distinguish between what they observe and what they infer. Teachers need to guide students to think cirtically, distinguish between truth and falsity and to draw a logical and reasonable conclusion. In drawing a conclusion one needs to clarify certain questions: do students possess the necessary information: if so are they able to apply facts to the problem; are they lacking in

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[42]Eugene L. Gaier, "What the Teacher Needs to Know About the Role of Knowledge in Problem Solving," Progressive Education, Vol. 30; No. 5, (March, 1953), pp. 140-141.

orientation; do they realize fully the implication of the problem; do they see ways of manipulating facts acquired to sub-parts of the problem to solve the whole; what reasons support the conclusion; does their reasoning support the conclusion?

Summary

Teachers by using problem solving procedures strengthen food preparation classes. Students are guided to search for knowledge and new ideas are evolved around them. Problem solving encourages free expression and examination. It not only governs the type and amount of facts learned but also acts to guide the manipulation of past learning experiences to the present insight. New concepts are more likely to be accepted when conclusions are justified in the light of new evidence.

To fulfill the educational aim of challenging the student to think critically, logical reasoning must be taught through the use of many concrete and tangible procedures. School experiences will be of little value to the student if thinking is done for him and answers are given to him.

Teaching Procedures Used in Problem Solving

A variety of procedures may be used in problem solving: Class Discussion may be extremely valuable in developing the techniques of thinking. The teacher acts as a guide for the group to develop sound reasoning encouraging students to weigh and consider all points before reaching individual decisions and a valid conclusion. A common answer may or may not be desired, the important thing is to help each member to know the problems involved and the implications of the different points in order to get students to think for themselves. Class discussion is valuable in correcting the influence of personal bias, misinter-

pretation of information, use of irrelevant material, and acceptance of a conclusion on insufficient data or inadequate knowledge. If class discussion is to be successful in promoting thinking it should grow out of the evolving learning situation. A discussion should be planned and organized to bring out the many different points of view. Good discussion requires that problems, words and terms be clearly defined and that pertinent data bearing upon the issues be available and utilized in arriving at decisions. Less ground may be covered in such teaching but greater progress will be made in acquiring ability to meet situations independently when students learn to consider critically all the evidence presented and to do sound thinking.

The Panel Discussion, if thoughtfully planned and carried out, is an educational procedure of unusual merit. It may be used to introduce a unit or as a summary or it may be used in considering a topic which is a part of a larger unit. A panel discussion is actually a small group discussion of a problem or a topic carried on before a larger group, the members of the larger group having the opportunity later to ask questions of the panel or other participants and to express their own views on the topic. As a rule in a school group the panel consists of a chairman and at least four or five participants. The chairman directs the discussion by raising pertinent questions for the group to consider, directs the discussion, prevents it from rambling, and keeps up the interest. The audience may be invited to participate at any point or after the discussion has ended and before turning the discussion over to the audience the chairman interprets the data and sums up the main points. Adequate preparation of both panel members and the teacher and an interesting topic is the secret of success in a panel discussion.

The Recitation is frowned upon by many educators but it still seems to have a purpose in teaching. Students, under the best psychological conditions known by the teacher, should be brought to see a need for learning certain definite things and for learning them correctly. Spafford makes this point, "The more of that type of learning which is available in usable form, the more rapidly may things of greater importance be accomplished. It is the half-learned things that clutter up one's thinking."[43] Food classes make use of a great deal of information dealing with facts and knowledge in menu making, learning basic recipes, preparation of food and in table service. While much of it may be learned through use is actual situations testing partially at least by the recitation method to check progress may come nearer meeting the actual home situation than checking a list in a written test.

A Special Talk to arouse and stimulate interest, to furnish data, and to give information in solving a problem is frequently made a feature of teaching. It may be used effectively to introduce a new aspect of work or to teach a particular part. The speaker should know how his contribution is to fit into the objectives of the unit. Students may prepare the questions which the speaker will answer. If a talk really fits into the work being done information received is put to work.

In all phases of the homemaking program study should be an intrinsic part of a large learning unit. Time for Directed Study under teacher guidance should be available when and as needed. Much worthwhile learning is obtained through planned and purposeful investigation if the student is encouraged to explore. As Hilda Taba has noted, "New ideas,

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[43]Fundamentals in Teaching Home Economics, op. cit., p. 285.

new information, and new data change attitudes, modify viewpoints and create new concerns and interests."[44] Stratemeyer considers that:

> The criterion of appropriateness of systematic study of a subject as a part of the curriculum is whether the individual learner is able to recognize the pertinence of this subject matter to his needs and to reorganize it for his own use.[45]

Both agree that the teacher needs to be able to come in at the right moment to give help. Assistance to students may be given by asking questions which will bring light to a problem by pointing to or referring to sources of reference material, and by offering suggestions which will clear up a difficulty.

One of the most abused practices in connection with directed study in the Oklahoma school system is the laboratory situation where facilities are such that only a part of the class may do any one type of laboratory work at a time. Frequently one finds that those who are studying are doing so only half heartedly and that the reading materials assigned have little relationship to the laboratory work being emphasized. Further observation shows that some teachers seemingly think of reading only as "busy work" to keep certain students employed while others carry on the activities of food preparation and service. True, reading and special study are and should be a definite part of all types of class laboratory experiences. However, practices and procedures used must be justified by good reasons and documented by reliable authorities. Nevertheless additional directed study is imperative as a means of bringing new information to the class, of emphasizing the principles

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[44]Hilda Taba, "Social Sensitivity," Progressive Education Association, Evaluation in the Eight Year Study, Bulletin No. 6, Ohio State University, (Dec., 1936), p. 3.

[45]Guides to a Curriculum for Modern Living, op. cit., p. 57.

being presented, and of directing the interests of the entire class toward the solution of the problem at hand.

Demonstrations well prepared and a part of the problem solving sequence are very important if followed by practice lessons. If such time is not allotted the learning experience might be considered lost--learning acquired by seeing the teacher doing is soon forgotten--the pupil should be given the opportunity to use the information gained at once and to clear any difficulties which may arise.

Demonstrations may be used for different purposes. They may be used to arouse interest, to set standards, to clarify a point, and to save time. The demonstration may be done by the teacher, the teacher and volunteers, a member of the class, the teacher and a class member, or an outside person. This technique should be used only when it seems to be the most effective way of achieving the learning desired.

Oral Reports have been very much abused in our educational system through improper preparation by the student and overuse by the teacher, and poor, monotonous presentation. The oral report should serve the same purpose as a special talk--this calls for preparation, ability to pick out pertinent information, and ability to speak. A report should not be read! Spafford has this to say, "A report, no matter how brief, should be well organized, represent clarity of thinking, have meaning to the speaker, and in turn have meaning to the audience."[46] The person making the report should feel that he is giving something the group wants and needs to learn. Otherwise such teaching procedures can be "chalked up" as covering a vast amount of material, information lost

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[46]Fundamentals In Teaching Home Economics, op. cit., p. 285.

on part of listeners, with no learning resulting.

Notebooks or Scrapbooks related to work the class is doing or going to do offer excellent means of seeking and learning information and of applying generalizations developed and could take the place of many oral reports. Citizens in a community may have magazines they are glad to donate to the homemaking department. Magazines contain authoritative articles that give newer trends and illustrate the use of principles of food cookery. They also present attractively served plates, garnishes, recipes, table decoration and table setting. Notebooks and scrapbooks to emphasize studies made in class could be used to a great advantage. A notebook to contain usable information does not necessarily need to be voluminous but should include those things considered important by the students concerned, especially those they hope to be able to remember.

Laboratory Work is very effective in teaching units in which manipulative skills need to be developed and such practical knowledge is best acquired under supervision. Spafford emphasizes this point by writing, "Much of living centers around doing physical things and the more this doing is intelligently guided and controlled, the more satisfactory it is."[47] Skills and experience are needed in dealing with concerns of every day living and are best learned in the situation calling for their use. Knowledge learned incidentally or functionally in natural life situations under supervised instruction is more apt to be retained and to help in the development of self confidence. In all probability the work learned in school will not be carried to the skill level but this

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[47] Ibid., p. 291.

experience will help to open the door to knowledge and to further investigation. Students learn the techniques and get the feel of an operation to be perfected later. Being assured of some success in advance students are more likely to carry a new procedure into the home.

Laboratory work in food preparation is rarely ever set up to achieve only one purpose. The over-all goal is to guide students in learning to plan, prepare and achieve standards in meal preparation. Curiosity, essential to learning, may be stimulated if a student is guided in trying to find what will happen, why a thing works or why it does not work, what procedure is best, and how things will look. Students need to be guided in each step of the problem solving series. Foods work should provide much opportunity for experimentation. Applied art holds a valuable place in the foods laboratory. The preparation of appetizing foods necessitates a knowledge of what constitutes a satisfactory product. It is desirable to have the ability to ascertain the reason why certain products do or do not measure up to the standard. Evaluation is a part of the total learning process from the beginning and check sheets may be developed to judge food products. The type should be chosen according to the product, depending upon the data to be secured. The general terms used on a score card to teach independent evaluation and to develop a consciousness for standard products are: appearance; color; consistency; flavor; lightness; moisture; content; size; taste; tenderness and texture. The score card should give definite qualities for which to look and be efficient for quick judging using a limited time. It should be used throughout the series and students should be encouraged to state results and apply generalizations discovered. Laboratory work may be set up for testing purposes: a challenge in close

relation to the home activities might be to plan and prepare a meal for guests from foods found in the laboratory; or the preparation of certain basic food dishes without a recipe. Many other organized learning experiences and generalizations may be evaluated through similar testing. Laboratory work offers excellent opportunities for encouraging students in developing such personality traits as accuracy, cleanliness, desirable work habits, and good manners. Learning to work together cooperatively for the good of the whole group provides experiences similar to family living.

In a laboratory that has only one or two kitchen units the number of students who can do a particular thing will of necessity be limited. The most serious problem here focuses around the lack of time needed for supervising the work of students if they are to have the help they need when they need it. Opportunities for wasting time and prolonging a job are great on the part of the student not doing laboratory work. Teachers must have a well organized plan to develop initiative and to encourage students to use many types of resources. In using group work it is wise to plan for all members of the group to spend some time doing similar activities. If it be directed study all students may be doing investigation although it may not be in the same field of exploration. If it be some other activity all students may need to help in carrying out a project which involves action. This is the basic idea for all group work. In preparing a meal while one group is doing the cooking the second group might be making a simple place card; the third group an inexpensive favor and table decoration, while the fourth group might be using good techniques and time management in putting the dining room in order to serve the meal. This might include cleaning and dusting the dining room, setting the table and keeping the working

area in the kitchen cleaned up. Some of these jobs might be combined leaving one group free to work on the preparation of such teaching aids as bulletin, flannel, or felt boards. Materials used on these boards should be well placed, neatly and artistically arranged and should be taken down when the display has served its immediate purpose. Illustrative material placed on these boards may be used to awaken interest and increase a understanding in the work going on or in that which is yet to come; it may be used to further enrich learnings already acquired; or it may broaden the whole background of the students learning. Students and teachers will want to plan for its successful use. Materials to be used in food work may be original work of students or illustrations may be cut from magazines. Most students like to paint so it is wise to keep show card paint, oak tag (a heavy paper) and paint brushes handy. Students will find using the various boards helpful when giving demonstrations and reports in class. Teachers will find them useful to augment a demonstration, class discussion or a test.

Films arouse intellectual curiosity and present excellent material to stimulate problem solving. They give reality to a problem making a situation appear vivid, natural, and lifelike. A film should be selected which has been prepared to impart insight on a given point or points in a learning experience. Some films are useful in explaining a process and in clarifying a discussion while others are valuable in that they help develop appreciations, attitudes and ideals. A film should be previewed by the teacher or the teacher and a committee. Plans then can be made for its use. Instructions for viewing a film should be given to the students in advance. The value will be increased if time is allotted for discussion following the showing. It is not a good idea to

use a film just to fill in time but only when it seems the best procedure to use in that particular learning situation.

Field Trips give opportunities to learn first hand information and should fit into the teaching plan as a means of gaining information related to problem solving in a larger unit of study. Making full use of community resources offers a series of experiences and an opportunity of coordinating services that may be available and pertinent. Any trip should grow out of the students needs and to be successful calls for a great deal of pre-planning. The teacher or students should make plans with the owner or manager of the place or places to be visited. Students should have definite questions in mind and should discuss in advance the specific items to be observed in the course of the visit. The manager or buyer of a firm may be asked to give a talk first and allot time to answer questions or the trip may be a tour giving information and answering questions at points of interest. It is important to make specific plans for discussion following the trip in order to summarize the observations, to clarify facts not thoroughly understood, and to correct wrong impressions.

Good manners, appreciation, and courtesy are a necessity throughout any field trip and should be followed by suitable recognition of the service given.

Role Playing is frequently a good way of creating interest and focusing attention when introducing a new unit. This procedure is especially popular with adolescents and many times situations that are difficult for the teacher to express may be dramatized to an excellent advantage. Role playing may be used to present a picture to emphasize certain points in a unit. Many skits and plays are on the market while

others may be developed by students.

To broaden the scope of learning Graphs, Charts, Exhibits, Cartoons, and Posters published by commercial firms and government departments may be used to stimulate interest in a given problem. They leave a more definite mental picture with a student than any amount of reading material can do under the same circumstances. All materials regardless of their source will need careful evaluation and should be studied as to reliability and value in teaching.

Summary

There will be differences of opinion in regard to classroom procedures used in food preparation as it is related to problem solving but teachers can learn to guide and direct students to obtain the maximum of learning using whatever means seem most effective in realizing the basic purposes of the learning unit. Hatcher and Andrews make this pertinent point in regard to classroom procedures:

> One of the chief considerations is the matter of determining the method of teaching best suited to produce the maximum development of all pupils for intelligent participation in society. Most educators will agree that there is no perfect method of teaching. Also, the intelligence and personality of the teacher play an important part in determining her effectiveness in the classroom. But when imagination, enthusiasm, and ability are combined with training in the knowledge and use of sound classroom techniques, then teaching becomes a form of educational guidance by which pupils attain not only knowledge and skills but wholesome personality development as well.[48]

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[44]Hazel M. Hatcher and Mildred E. Andrews, The Teaching of Homemaking With Emphasis on Teacher-Pupil-Parent Planning, Houghton Mifflin Company, The Riverside Press (Cambridge, Massachusetts, 1945), p. 9.

PART IV

EVALUATION AND RECOMMENDATIONS

The chief desire of most teachers is to build a rich, functional, and worth while program in food preparation based on the methods best suited to produce the maximum development of all students. To broaden the program will necessitate tentative planning and setting objectives with an understanding of students needs, interests, and abilities, selecting adequate experiences to bring effective learning. For foods work to keep alive, have meaning and value and to be important to students the program must continue to grow and must never be considered as a finished piece of work. Throughout teaching a teacher needs to be alert to arouse and encourage a serious desire for learning and growth to encourage problem solving using judgement and ingenuity to stimulate students' attitudes, values, needs, interests, and experiences that help develop intellectual curiosity, critical thinking, and selective perception. Laboratory work and classroom procedures offer many opportunities to develop resourcefulness, independence, creativity and critical thinking which are characteristics necessary for growth. Teachers will see ways to challenge students in reaching the breadth, depth and scope of the program; meaning will be given to a wide range of problems encountered in food work. The return for this will be teacher-student growth rather than just a job as it has been for many.

CONCLUSIONS

This study has presented an analysis of problems concerned with teaching students in secondary education to think critically in

relationship to problems concerned with food. Evidence from material compiled points to ways of strengthening the teaching of food preparation through using problem solving. It is believed the two major weaknesses which now exist in many schools in Oklahoma may be improved through the use of problem solving techniques. The first: much teaching is subject matter centered. The second: many teachers are trying to find a pattern for teaching food preparation.

A teacher's awareness of classroom opportunities to stimulate in students the questioning attitude and the ability to think is important in problem solving. The procedures used will vary depending upon the problem. Some problems require individual activity while others may be solved using small groups. Food preparation has a wealth of resources which may be utilized in the search for knowledge which may be used in working out new ways and new answers. In order to check one's responsibility and ability in doing a thorough job of presenting food work to high school girls and boys a teacher might ask herself these questions:

1. Am I evaluating methods used with a critical eye?
2. Am I advocating teaching procedures using both teacher and pupil participation with activities based on student's needs, interests, and abilities?
3. Am I developing a food program which makes the best possible use of its potential values?
4. Am I teaching using conventional method or do I have a limited point of view, dictating what is to be done and deciding what the student needs requiring only that they listen and observe (or do they?) and then memorize to hand back.
5. Am I selecting experiences and objectives that will be most worth while for students shifting emphasis as seems desirable to enrich the content of food preparation?
6. Am I open-minded to new ideas?

7. Am I avoiding bias and prejudiced opinions when making decisions?

8. Am I widening the range of problems which are real and stimulating to students?

9. Am I helping students to understand the "why" of operations called for in foods preparation to justify acceptance of new concepts.

10. Am I recognizing the little but important things to focus attention on in the principles of cookery?

11. Am I challenging students to think critically and develop skills pertaining to principles underlying cookery, teaching students to handle materials the recipes prescribe?

12. Am I presenting scientific facts with meaning or requiring memorization of a hodgepodge of facts which may not be at one's command to solve problems when needed?

13. Am I using sound psychological procedures to influence students to learn certain definite things and to learn them correctly?

14. Am I able to recognize the problems involved in the area of food preparation?

15. Am I teaching students to prepare a whole meal quickly and efficiently?

16. Am I teaching students to plan and serve a meal at a given time or am I teaching them to prepare certain items for it?

17. Am I studying continually, since scientific facts, principles, and generalizations, and methods of teaching are ever changing in food work?

18. Am I guilty of following the same teaching plans year after year?

RECOMMENDATIONS

The study of suggestions for strengthening the teaching of food preparation in Oklahoma high schools has led to the recommendations that teachers need to:

1. teach problem solving procedures to strengthen food preparation classes.

2. know how to think themselves to develop critical thinking in problem solving.

3. have a knowledge of how facts are learned, synthesized, and retained and how they are selected, utilized and manipulated in the problem solving process.

4. use a wide variety of teaching-learning procedures.

5. gear problems to students ability.

6. utilize critical and intelligent thinking in various tasks in food preparation.

7. create and stimulate interest in food by selecting problems of concern and interest rather than blindly follow a recipe.

8. guide students in each step of the problem solving series.

9. remember that students as well as teachers need to have clearly in mind the goals toward which they are striving.

10. analyze and have a clear idea of how to teach students to develop the ability to think through problems in the planning of meals and the preparation of food.

11. encourage students to generalize on the basis of experimentation, to check with authority and to consciously apply generalizations in school and at home.

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