A SOURCE UNIT FOR TEACHING HOUSEHOLD EQUIPMENT

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PREFACE

During the past few years the manufacturing of household equipment has progressed rapidly. So rapidly, in fact, that it has become increasingly necessary for the homemaker (as well as the prospective homemaker) to study equipment in order to know enough about it to select intelligently equipment which will best suit the purpose for which it is intended.

Home Economics represents a deliberate focus of thought upon the problem of how to get the most satisfaction from daily living. Frequently this means the study of ways and means to save the homemaker time and energy. The study of household equipment, therefore, is assuming an important place in many home economics curricula. In this source unit, effort is made to develop over-all preliminary plans for the teaching of the location, selection, use and care of household equipment.

CONTENTS

I INTRODUCTION

The tendency to recognize the need for more functional organization of the various subject matter areas is one of the trends of secondary education at the present time. Without the reorganization of subject matter areas into some sort of source units, the teacher must struggle continuously from day to day on short-time plans. This is time consuming and tends to result in disorganization and many short unrelated units of work. Such a time-consuming method leaves the teacher with lessened time and energy to devote to discovering the needs of individual students and of the community. Over-all plans give the teacher self assurance and leads for planning professional growth. They also provide background material for the counseling of students. In addition over-all plans help to save the teacher from the regrets which come with the realization of neglected opportunity. Without careful preplanning the curriculum and teaching plans are apt to be teacher dominated and to follow the text-book and traditional procedures rather than to encourage changed behavior on the part of the student.

The building of adequate source units also challenges the teacher to make a fairly exhaustive review of the subject matter area to be dealt with; to compile adequate reference lists; and, to collect adequate teaching materials well in advance of class room procedures. It also means more time for understanding the needs and the unique characteristics of the students and of the school community. Such pre-planning should result in provision for class experiences likely to help each student live a happier daily life.

In other words, the teacher who has organized factual material into source units has more time during the academic year to find ways and means to foster learning experiences likely to challenge the student to constructive action. With the help of the source unit, specific planning becomes simpler, pertinent materials are at the finger tip, and teaching plans can be kept flexible and broad in scope.

It is important to keep in mind, however, that a source unit is merely a guide to teaching and not an actual plan for a specific class or group of students. Christian says:

> "Source material differs from a text book or syllabus in that it does not represent a body of information or ground-to-be-covered, but is planned around a significant area of adolescent living, with the idea of suggesting more teaching possibilities than can be explored with any one class, and enough so that any teacher needing help from that particular area of living could find some suggestions applicable to this situation. [1]

This point of view makes source units merely reservoirs of information, ideas, and democratic procedures which a teacher may draw upon as he plans for experiences which will place responsibility upon the student to think reflectively. However, on every level this material must be constantly evaluated if it is to promote learning which functions or fits the need of specific individuals and communities.

This study concerns itself specifically with source material pertinent to the teaching of household equipment at the secondary level. However, the material lends itself readily to satisfactory use at other

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[1] Johnnie Christian, Home Economics and Democratic Living, Minneapolis, Minnesota: Burgess Publishing Company, 1941. P 1.

levels of instruction if modified in terms of the needs of the individuals to be taught.

Since much of the teaching of household equipment employs the development of skills more readily built up at an early age, this study may assist the teacher in advising with teachers of elementary grades who feel the lack of home economics training. This study may also help the home economics teacher to discover ways and means to broaden the sphere of her influence in the community. Many adults need guidance in solving problems related to equipping the household and the parents of students need to be adequately informed in order to assist the teacher and the students in carrying out home projects dealing with household equipment. Moreover, from this study of source materials the teacher may discover more effective ways and means of relating the study of household equipment to other units of home economics and to educative experiences beyond the range of home economics.

Currently the term "household equipment" is used in a comparatively vague manner. However, as used here, it refers to appliances found in the kitchen, pantry, laundry, and equipment-storage space of the home. When thinking of equipment it is easy for the consumer to think only of such larger well-publicized items as stoves, refrigerators, washing machines and the like. But one must not overlook such smaller equipment as pots, pans, knives, and eggbeaters. The situation is clarified by distinguishing equipment from furnishings. In this study, an arbitrary line is drawn between "equipping" the kitchen, pantry, laundry, and other work centers and "furnishing" the rest of the house. Furthermore action is implied in the term "household equipment" as contrasted with the stationary element in home furnishings.

Throughout the unit which follows, source material is constantly distinguished from the teaching plan. Without careful distinction, source units may be confused with plans for teaching a unit of work to a specific group. Both kinds of planning may follow the same general outline; i. e., the formulating of general and specific objectives, the listing of outcomes desired, the determining of possible and desirable activities and procedures, and the selecting of ways and means both to evaluate the results, and to relate the learning to larger life problems.

The teaching plan differs from the source unit in that the teacher must draw from the source unit only that which applies to the situation found in a specific class. Ideally, actual classroom procedures are planned co-operatively by the teacher, the parents, and the students and selected to meet the immediate and predictable personal and social needs of the individuals in the group. This process is limited only by the amount of time, interest, effort, and ability those participating in the program decide to use.

Neither source material nor specific course plans can be developed satisfactorily without first clarifying the educational point of view. Progressive educators encourage the belief that

> "The purpose of general education is to meet the needs of individuals in the basic aspects of living in such a way as to promote the fullest possible realization of personal potentialities and the most effective participation in a democratic society." [2]

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[2] Progressive Education Association, Science in General Education, D.-Appleton-Century Company, Inc., 1941, P. 23.

In other words, functional education for better living should be freely accessible and so organized as to seem desirable to all. Our forefathers seemed to have believed this and to have attempted to establish schools to foster social intelligence. Ground work was laid by them for the development of the first and foremost national instrument of education, the public school. However, until recent years education on the secondary and higher educational levels has tended to follow the traditional pattern planned for those destined for the professions. Currently, new concern is reflected for so modifying the curricula at all levels as to challenge each and every student to discover a more intelligent solution to the problems which persist in day-to-day living. This in turn holds promise of more intelligent participation in the affairs of our would-be democratic country. Max Otto expresses this idea when he says, "Democracy is the intelligent use of co-operative means for progressive attainment of significant personalities."[3]

The above definition gives direction to this study, in that it is guided by the belief that education must help the student to act more intelligently in whatever situation he finds himself. For example the study of home economics in general - and more specifically the study of household equipment - must make significant contribution to the development of the individual student. Moreover, the educational experiences sponsored in the process of teaching household equipment classes should be designed to help the student clarify his concept of the democratic

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[3]Otto, Max, Science in General Education, Progressive Education Association, New York: D. Appleton-Century Company, Inc., 1941, P. 35.

way of life. This is characterized, among other things, by co-operative planning and by the extensive use of labor saving devices to free mankind for higher living.

Planning requires thinking and decisiveness, not alone by the individual, but also by the family unit, by the community, and by the nation or the world at large. Teaching people how to plan and carry out carefully made plans through action guided by democratic values is the real challenge of the future and the real task of education.[4]

If the predictions of the authorities may be taken seriously personal thinking must be depended upon to raise the standards of living throughout the world. Labor and industry as well as educators are concerned with the basic problem of teaching people to think more reliably and to live as rich a life as possible. People are not working for minimum wages or parity prices alone, but are working for a satisfactory level of living for all. It is necessary to develop concern on the social level since the betterment of an individual is relative to all other individuals in larger and lesser communities. It is quite obvious that betterment of the individual and the community are interrelated and hinge directly upon the educative opportunities available.

The democratic way of life must provide for the continued education of all who participate in the fostering of this ideal, or it will perish. To influence the self-education of the individual, the teacher must be able to stimulate him to transform those ideas which are significant in

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[4]Ralahr, May and Committee, "Trends", Journal of Home Economics, Vol. 39, No. 1, September, 1947, P. 398.

fostering changed behavior, into terms of emotional drive and action. Hopkins states that changed behavior in an individual can be evaluated in terms of changed meanings and interests, expressed feelings, and different attitudes towards personal and family living.[5]

This point of view challenges the teacher to investigate and determine what the individual and the community need to contribute to each other in order to bring about mutual betterment. Each individual is a dynamic living organism and continues to grow and develop as he struggles to find ever better solution to problems which persist in society as well as in personal living.[6]

Therefore, it is highly desirable that learning takes place in a democratic atmosphere and that it be fostered in a democratic manner. The curricula and teaching plans should include continuous opportunity for the selection, the development, the management, and the evaluation of learning experiences participated in by the student, the parents, and the teacher. Through such participation the planned learning experiences are apt to suit the needs of the group and to aid the group and the individual to achieve accepted goals more directly and more intelligently.

Learning experiences for the individual begin in the home and extend outward through the community to the world. Since every individual is capable of learning, if he sees the need, it is the duty of the teacher to relate the situation to the background of the individual. John Dewey says that it is the responsibility of the teacher to stimulate

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[5]Hopkins, Thomas L., "Emerging Emphasis as to Learning," Teachers College Record, 40 (November, 1938), P. 126.

[6]Progressive Education Association, Progressive Education, Its Philosophy and Challenge, New York: Progressive Education Association, 1941, P. 5-6-7.

the individual to develop the ability to learn by reflecting upon previous experiences and so learn as a whole, not a part as he would in a situation where there is only a series of facts to accumulate.[7]

It follows, too, that in a desirable learning situation the teacher is able to challenge the student to think reflectively about, and to develop a scientific attitude toward, all persisting problems. Experiences which are effectively educative must focus thinking upon problems growing out of real life situations to be delt with irrespective of subject matter lines. Activity unrelated to everyday living is likely to have little if any effect upon one's behavior pattern and so is apt to be practically valueless. Hence motivating suggestions from the teacher must be concrete and related to the student and his environment.

In specific course plans the teacher must study the students and the specific community involved to discover what focus of subject matter is apt to be most meaningful and to result in the betterment of the community. Since adequate flexibility in specific teaching plans is best assured by the preliminary development of source units in subject matter areas, these should include many more suggestions, activities, and procedures than can be carried out in any one or a variety of situations.

It is evident that problems growing out of real life situations are never confined by departmental lines. Hence in the good learning experience the student draws freely upon all related areas of knowledge and integrates what is new to him with all that he has experienced at an

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[7] John Dewey, How We Think,(Second Edition; New York: D. C. Heath and Company, 1933), Pp. 63-64.

earlier date. In this way, new experiences and new ideas carry a rich enough meaning to influence the learner to make more intelligent decisions. Thus progressive learning becomes individual growth in ability, understanding, and cultural appreciation. In short, teaching is more likely to result in learning when students and teachers think and plan together, not only, to find intelligent solutions to personal and family problems, but also, to discover how to accept increasingly their responsibility for sharing in the findings of better solutions to present day social and economic problems which persist in our culture. If carried further, directed thinking and shared planning will result in the improved management of resources and finer vocational orientation.

A final and ever present educative objective is that of helping the student to acquire adequate tools of expression to let him make known his desires, wishes, and beliefs. The adequate mastery of tools is a necessary step in the full development of potential interests and abilities.

The general point of view defined above applies to homemaking education. Home economists are being challenged in the world today to think of the home as a cultural agent and to focus home economics upon democratic home living. Homemaking education should follow the general educational plan and the objectives of home economics must be related to the overall objectives of general education. Thus a good homemaking program offers learning experiences that are designed to foster the significant development of the student and to challenge him to think reflectively about and to plan intelligently for an increasingly democratic family pattern. Through participation in classroom procedures and through co-operative group planning, the student may develop an

increasing ability to weigh values and to plan wisely for the solution of such home and community problems as confront each person in personal, family, and community contacts.

The curriculum for home economics or homemaking education should cut across subject matter lines and give an insight into all educational areas. The home economics teacher who works with a curriculum of this breadth can readily focus pertinent subject matter upon the solving of real problems. In so doing the student can be guided into the development of skills and creative abilities as well as finer mastery of the tools of expression. Since home economics deals with personal problems about which all are concerned, it offers the teacher many opportunities to stimulate the student to selfdirected learning and the development of his native interests.

The home economics teacher can do much to help the student to develop for himself a workable philosophy of life in keeping with our continuously changing social order. Society has become so complex that many young people need help in making satisfactory adjustments to its changing demands. Not the least of these difficult adjustments may be that of belonging to a family group in which the traditional family pattern is changing. As society has become more complex and the solving of family problems has become more difficult, home economists must find more clear-cut purpose in teaching home economics and do more effective planning. The efficient teacher finds it highly desirable to organize the various areas of teaching material in the interest of putting factual information to more efficient use in the classroom.

The purpose then of building up units of source material becomes that of reorganizing material applicable to a specific area so that it

may be readily focused upon purposeful goals which are in harmony with over-all objectives.

In order to make the learning experience complete and useful a source unit should be planned around a great number of problems which can be solved only by laboratory work, interview, and extensive reading. A source unit too should be in such form that it may be used in developing plans for boys, girls, men, women or a combination of these groups.

This unit attempts to explore an area of human knowledge (household equipment) for its potential contribution to the objectives of general education as well as education for homemaking, and to present the results of this exploration in a form directly helpful to the teacher.[8] It is intended, as explained earlier, that this unit be used by the teacher purely as a source from which she may select whatever is appropriate to the needs of any particular group of individuals. To keep pace with rapid technical advancements students of household equipment need to place increased emphasis upon the planning of work centers as well as upon the selection, the use and the care of equipment. Technological advancement makes it possible for one to look forward to homes where work is made easier and more pleasant and results are more satisfactory because of well chosen and skillfully used equipment.

The decision concerning the specific pieces of equipment to study in actually teaching household equipment may depend partly upon the extent to which various pieces of equipment have been accepted in the community. However, it may be wise also to attempt to plan in terms of what the community may be using in the immediate and more remote future.

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[8] Progressive Education Association, Science in General Education, New York: D. Appleton-Century Co., Inc. 1939.

For example, it might be inadvisable to focus study upon electric stoves and other electrical equipment in a community with no access to power. On the other hand, the teacher may forsee that electrical power will be made available to the community in the near future. In which case the study of electrical household equipment may be found expedient.[9]

At present there is more demand for equipment than ever before. Due to this demand there are more new types of equipment, more brand names, and more awareness of the importance of equipment and its proper use than ever before. Therefore, the home economist must pay more attention to household equipment in planning the home economics program. Since production has not yet caught up with demand this is the "hey day" of the opportunist with an inferior product. So while the integrity of the dealer is ever important it is more important that the consumer discover for himself what is a desirable product.

It is well for the home economics teacher to remember that even though household equipment is not being emphasized in formal class instruction, the student's basis for judgment is constantly being built through the kind of equipment he uses in establishing elemental skills. The most valuable pieces are those which stimulate student interest and so motivate learning. In other words the student, a prospective equipment consumer, is apt to think of class equipment as a guide for future buying.

The most efficient use of household equipment calls for the proper and intelligent arrangement of work centers as well as judgment in selecting, operating and caring for all household appliances. Only so

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[9]Maud Wilson, "Standards for Kitchen Utensils," Journal of Home Economics, 35 (October 1943), P. 490.

can the future homemaker accomplish a maximum amount of work with a minimum of effort or the least fatigue in the shortest possible time. This source material then has been organized around four major objectives; to direct student effort toward becoming familiar with desirable plans for the arrangement of the kitchen and laundry equipment and the storage of other household equipment; to help the student determine suitable criteria to use in selecting household equipment wisely; and, to teach the student to care for household equipment intelligently and to assist the student to use equipment to better advantage.

Educational literature carries many suggestions concerning the best way to arrange teaching material. Two recent studies have influenced the form to be here, i. e., Science in General Education,[10] and Home Economics and Democratic Living.[11]

Each of the major objectives dealt with has been developed in terms of specific objectives, desired outcomes, class activities, methods for carrying out these activities, and available teaching materials. However, ways and means of appraising have been summarized for the entire unit. Since outcomes are thought of in terms of changed behavior on the part of the student, the specific objectives are stated in terms of such regulators of human behavior as: major understandings; basic concepts or principles to be taught; skills and abilities desired; as well as attitudes, interests and values.

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[10] Progressive Education Association, Science in General Education, D. Appleton-Century Co., Inc., 1941, P. 524.

[11] Johnie Christian, Home Economics and Democratic Living, Minneapolis, Minnesota: Burgess Publishing Company, 1941. P. 16.

II KITCHEN PLANNING AND ARRANGEMENT

To be able to use household equipment so as to get full value from it or to give maximum freedom to persons managing the home it is necessary to have a workable knowledge of the possible arrangements in the work centers of at least the more essential pieces of equipment.

No piece of equipment can be judged upon its working efficiency alone. If equipment is to lighten household tasks and to function effectively in the running of the home, it is essential that the modern house be well designed and the location of the equipment carefully planned. The outlets, for such utilities as electricity, gas, and sewage disposal, should be located so as to accommodate, adequately, the pieces of equipment planned for immediate use or in the predictable future.

Many architects and a number of manufacturers are now planning houses around a utility core. Complete lines of equipment for each work center are being designed and constructed by experts so scientifically that they may be installed by the semi-skilled workman with the least possible risk of error.

Kitchen planning is fundamentally the process of arranging existing or desired equipment in existing or desired storage spaces and work areas (in or near the kitchen) in such a way as to give maximum efficiency with a minimum of effort. Research on efficient kitchen planning is being carried on in many widely scattered colleges and commercial laboratories. These research laboratories are attempting to show the way to better kitchens. It is not only necessary to study the arrangement of the kitchen, but also the rooms used for storage of equipment for laundry and for other household operations closely allied with kitchen work.

The first major objective developed in this unit on equipment is that of trying to help the individual to plan the home kitchen in such a way that the worker can accomplish a maximum of results with a minimum expenditure of time and energy. The word "kitchen" is used from here on to refer not only to the food preparation center, but also to work centers and storage areas in the home. More specifically the teacher might help the student to:

(1) Become familiar with the basic principles of kitchen arrangement which meet the varied requirements of cost and use.
(2) Understand the terms commonly used in kitchen planning.
(3) Become familiar with the generally accepted types of kitchen arrangement and the principles which determine the location of the working centers in each arrangement.
(4) Be able to distinguish between those pieces of equipment which are a necessity in the kitchen and those which are desirable but less essential.
(5) Be able to analyze the relative efficiency of kitchens already built and equipped in order to discover possible ways and means of improving the situation.
(6) Develop an increased appreciation for the well planned kitchen.
(7) Acquire new appreciation for the importance of the work carried on in the kitchen.

Further light is thrown upon the objectives when translated into changed behavior or the outcomes hoped for. It is hoped that in the study of kitchen planning the student will acquire:

(1) Improved skill in planning kitchens.
(2) Ability to use good judgment and to work efficiently in each of the various types of kitchens suggested above.
(3) An experimental attitude toward time and motion studies of the worker carrying out persistant household tasks.
(4) Adequate vocabulary for discussing kitchen planning effectively.
(5) Judgment in altering kitchen and storage areas which have been planned poorly.

The wise teacher plans to develop objectives through a large number of class activities and by using as wide a variety of methods as possible.

This procedure makes source material applicable to many situations and suitable for challenging students with varied interests and varied levels of ability. In a study of the planning of kitchens the students may advantageously:

(1) Help in selecting the problems to be attacked.
(2) Collect information by attending lectures given by such local specialists as the teacher, commercial demonstrator; or the local home demonstration agent.
(3) Participate in field trips or excursions to local stores or manufacturing plants.
(4) Locate and study suggestions for desirable kitchens.
(5) Make a time and motion study of such tasks as washing, ironing, and preparing meals.
(6) Demonstrate the time and motion studies suggested above.
(7) Prepare and show charts, slides, film strips, and films showing various kitchen arrangements and their relative convenience in terms of time, motion, and fatigue.
(8) Select suitable pictures to use as opaque projections to illustrate phases of emphasis pertinent to ktichen arrangement.
(9) Collect clippings, circulars, and the like, to enrich the existing files of material illustrating kitchen arrangement.
(10) Write and record a radio script presenting pertinent facts on kitchen arrangement.
(11) Write a series of articles for the school and local paper, and clip and file any which are published.
(12) Write monologues, skits and plays on kitchen arrangement.
(13) Compile a reliable reference list for future study.
(14) Sponsor note-worthy speakers on the subject of kitchen planning.
(15) Select, follow through, and report on such home projects as establishing a planning center in or near the kitchen, improving the provision for storing food, increasing the shelf spaces in the kitchen cabinets, or analyzing possibilities for improving work centers planned for carrying on the washing and ironing, the preparation of food, or the planning of the management of the home.
(16) From the above list select and carry through a class project.
(17) Plan an excursion to local utility plants to gain a knowledge of the principles pertaining to the operation of the home plant.
(18) Make a community survey of local kitchens both in homes and public eating places to discover their relative convenience.

As a culminating activity related to kitchen planning the student might:

(1) Debate some outstanding community problem uncovered by the survey suggested above.
(2) Stage an open house to let visitors study department equipment and its location.
(3) Present in assembly or on club or community programs dramatizations based on the study of kitchen planning.
(4) Plan and conduct a tour of business houses in the community which deal in kitchen equipment.

The teacher must assume the responsibility for setting the stage for many, if not all, of the class activities. In preparation for "stage-setting" it is well to:

(1) Make contacts with key people in the community to discover the type of kitchens used in the community.
(2) Secure the aid of neighborhood groups or individuals able to throw light on the problem of better kitchens.
(3) Keep in touch with authorities in the field of education and up to date in the area of household equipment.
(4) Plan a campaign for improving the department kitchen to convince the students that such a campaign must be continuous.
(5) Write timely articles for the local papers and radio.
(6) Report on successful class projects at professional meetings or through professional papers, so that other teachers may profit by the example.
(7) Plan and prepare materials for use in presenting demonstrations dealing with kitchen planning.
(8) Explore possible field trips, excursions, and tours for which the class may profitably plan.
(9) Collect published dramatizations from which the class may select appropriate ones according to the needs.
(10) Plan a campaign to let the public know as much about kitchen equipment as the students are expected to learn.
(11) Collect and make easily accessible to the students books for reference, charts for visual aids, and direction sheets for laboratory experiences.

Any scheme for evaluating progress toward accepted objectives which tends to help the student reorganize bits of knowledge and specific information into broad general principles or functional conclusions constitutes an especially desirable learning experience. In the process

of formulating broad basic concepts the student forces himself to translate facts learned in the classroom into guiding principles apt to be applicable to many situations found in daily living. The ease with which the student formulates these concepts or generalizations indicates the quality of learning he has experienced. The following generalizations might be drawn from this unit on kitchen planning:

(1) The intelligent conservation of both human and material resources encourages a better standard of living.
(2) A more generous application of democratic principles in all relationships follows careful planning.
(3) The constant reorganization of kitchen activities, and the continuous appraisal of the value of kitchen equipment helps to make possible greater individual development and more satisfactory relationships in the home.
(4) Not all kitchens are used alike so each should be planned to provide for the needs of the specific family.
(5) A well organized kitchen is basic to the conservation of time and energy and the efficient carrying out of related household tasks.
(6) The application of science to the construction of labor saving equipment for household use makes possible an equitable distribution of family responsibilities. Hence labor saving devices have had important effects upon the function and relationships of the family.
(7) A kitchen should be planned and arranged so that the worker moves logically from one task to the next without an undue amount of step retracing.

Since the equipment field is new, visual aids are not numerous. However, pictures showing new equipment may be clipped from current advertisements and the following pertinent film strips are available.

The Convenient Kitchen. No. 238. 25 MM. Extension Division, Visual Aids Section, A. and M. College, Stillwater, Oklahoma.

Take Time to Make Time. 35 MM. 80 Frames. 1944. Household Finance Corporation. 919 N. Michigan Avenue. Chicago, 11, Illinois.

Convenient Storage Spaces. No. 408. 35 MM. Extension Division, Visual Aids Section, A. & M. College, Stillwater, Oklahoma.

Moreover the planning of class activities makes it necessary

for the teacher to locate available references for her own use and that of the students. In this connection the following bibliography is suggestive:

Beveridge, E. "Out of the Navy into the Kitchen." Woman's Home Companion, LXXIV (February, 1947),101.

Blazier, Florence. "The Unit Kitchen." Practical Home Economics, XXIV (September, 1935), 393.

Cushman, Ella M. "Some Kitchens that Fit." Journal of Home Economics, 38 (November, 1935), 579.

Editorial. "Equipment Finishes and Furnishings for Modern Kitchens and Laundry Planning." What's New in Home Economics, 11 (June, 1947), 100.

Editorial. "G. I. Kitchens on the Campus." Ladies Home Journal, 64 (September, 1947), 94-96.

Editorial. "Housing and Home Furnishings." Practical Home Economics, XXV (September, 1947), 427.

Editorial. "Portal to Portal Efficiency." American Home. 38 (July, 1947), 93.

Editorial. "She Models Her Kitchen." Woman's Home Companion, LXXIV (March, 1947), 102.

Extension Bulletin

Attractive Kitchens. No. 182. East Lansing, Michigan. 1937

Convenient Work Centers for the Kitchen. No. 2A. Morgantown, West Virginia.

Improved Home Storage. No. 422. Brookings, South Dakota.

Improve Your Kitchen Cupboards. No. 273. East Lansing, Michigan.

Kitchen Cupboards that Simplify Storage. No. 703, Ithaca, New York.

Planning A Modern Farm Kitchen. No. E. 355. Stillwater, Oklahoma.

Planning the Convenient Kitchen. No. E. 438. Stillwater, Oklahoma.

Planning the Kitchen. No. 131, Corvallis, Oregon.

Saving Space in Your Cupboard. Series 13. No. 1. Morgantown, West Virginia.

Goodyear, Margaret. "Housing the Highschool Home Economics Program." Practical Home Economics, XXV (September, 1947), 428.

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Phillips, Mary G. "Simplified Kitchen Storage." Practical Home Economics, XXV (May, 1947), 284.

Ramsey, Edith. "Kitchens for American Homes." American Home, 38 (June, 1947), 120.

Schultz, Hazel. "Better Housing and Educational Responsibility." Practical Home Economics. XXV (April, 1947), 220.

III SELECTION OF HOUSEHOLD EQUIPMENT

The prospective purchaser of household equipment must have some knowledge of the properties of the materials used in the construction of specific equipment if the selection is to be made intelligently. Certain properties are essential for efficiency and durability and other characteristics vary in desirability with the use to which the appliances are put. No hard and fast rule can be formulated to guide the buyer although each item may be appraised in terms of the type of operation necessary, the safety factors involved, the care necessary, the relative beauty and practicality of design, and the normal operating costs. The problem of choosing household equipment wisely will command more and more attention from the homemaker in the future.

Unfortunately it is rarely possible for the homemaker to choose at one time all the labor-saving equipment she hopes to have in her home. Usually only one or two pieces are purchased at a time. This makes it doubly hard to choose them wisely. So it is necessary for the prospective homemaker to educate herself to choose equipment carefully item by item. In the first place the homemaker will have to distinguish between the equipment that will lighten the work of housekeeping and that which seems desirable but is really a luxury.

Before any equipment is purchased the family budget for the year must be studied and plans made to finance the purchase. This procedure helps to limit the choice and simplifies the selection problem. Also each member of the family is likely to place more value on the equipment purchased if the amount of money to be spent and the final selection has been decided upon in the family council.

The family will find it necessary to determine the standards the equipment should possess to serve the purpose for which it is intended in the home; for example, the equipment for a temporary dwelling might be selected in terms of temporary efficiency whereas equipment for a permanent dwelling should be selected for length of service as well as efficiency and other characteristics.

The planning before buying helps save time, money and energy, and helps to eliminate uncertainty which may result in a poor choice of equipment. After the purchaser knows what he wants the equipment to do in a given situation and what can be spent for it, the next step is to get reliable information. It is wise to collect as many books, manufacturers booklets and informative labels as possible, and to read these carefully including the small print. Important information can be obtained also by observing equipment in use in other homes. Listed below are some specific goals which contribute to the development of the second major objective, or the intelligent selection of household equipment. The teacher should help the student to:

(1) Appreciate the standards which society has laid down for household equipment.
(2) Understand how family patterns for the selection of household equipment are established and passed on.
(3) Determine the range of price and quality in various pieces of equipment which any given family income can provide.
(4) Become skilled in the selection of reliable information for purchasing household equipment.
(5) Acquire the ability to purchase equipment which will meet acceptable standards of health and sanitation and at the same time will make aesthetic appeal.
(6) As consumers, to become sensitive to the problems of the producer of household equipment.

These objectives translated into behavior-hoped-for suggest

the following outcomes. It is hoped that study of factors affecting the choice of equipment will help the student to:

(1) Make use of scientific principles in selecting household equipment.
(2) Have a critical attitude toward claims made in advertising the merit of any specific piece of equipment.
(3) Develop criteria for determining what make of equipment to buy.
(4) Help members of the family and community to select equipment more efficiently.
(5) Collect and file useful information concerning the selection of equipment.
(6) Develop a pride in well-chosen equipment.

Some suitable student activities for developing insight and judgment in the selection of household equipment are listed below. The teacher may wish to encourage the students to:

(1) Plan field trips to retail houses for the purpose of studying the selection of equipment.
(2) Participate in an orientation lecture presented by the teacher or invited guests.
(3) Assist in the selection of desired class activities.
(4) Select committees to study the equipment suitable in the class, laboratory, and in individual homes.
(5) Study the selection of a specific piece of equipment as a class project.
(6) As a home project study an item of equipment in own home.
(7) Make an individual report on one or more of the following problems:
    a. Should the terms of payment influence the selection of equipment?
    b. What criteria should guide the prospective purchaser of household equipment?
    c. Is it economical to purchase kitchen equipment for multiple uses?
    d. What effect does advertising have on the selection of equipment?
    e. Of what value are labels, brands, and trade marks?
    f. To what sources can a consumer turn for aid when selecting equipment?
    g. What are the comparable advantages of several pieces of equipment designed for similar purposes, but made of different materials?
    h. Of what value are private consumer testing organizations?

i. Should the reputation of the manufacturer and the dealer affect the consumer's selection of equipment?

Preliminary activities the teacher might find helpful are:

(1) Familiarize self as a basis for class discussion with the equipment available on the local market.
(2) Collect reference material (labels, circulars, and clippings) and file.
(3) Locate merchants willing to help plan field trip for class and to lecture on the selection of household equipment.
(4) Keep well informed and professionally alert through contacts with equipment and educational authorities related to objectives.
(5) Plan a publicity campaign making use of school and local newspapers, local radio, and community exhibits.

As the student thinks reflectively about the problem of selecting household equipment wisely he may reach the following conclusions or generalizations:

(1) The modern family in action follows a dynamic changing pattern.
(2) An outstanding characteristic of homes today is the wide spread use of machines which the homemaker must select wisely from available models.
(3) The wide spread use of machines makes it necessary that they be efficient and be sold at a reasonable price. (This is more likely to be possible when constructed on standard designs and parts.
(4) Through scientific advancement, man might have become master of his own fate; but rugged individualism has developed a society characterized by interdependence.
(5) Labeling products lets the consumer increase his efficiency, but a reasonable amount of doubt and sales resistance concerning highly advertised products seems advisable.
(6) Price does not give a reliable index for selecting household equipment.
(7) Equipment should be chosen with reference to specific purposes and the conditions of the household plant.
(8) The modern household equipment is the result of continuous labor by men both famous and obscure.
(9) Many industries are now engaged in the production of machines for home and personal use.
(10) There is great satisfaction in finding acceptable household equipment at a price one can afford.

The only visual aid film discovered which seemed to be relevant to the study of the selection of household equipment is Marks of Merit, a 16 MM 2 reel sound film with an 18 minute running time which was produced by The Modern Talking Picture Service, 9 Rockefeller Plaza, New York 20, New York. However, pictures may be clipped from recent periodic als to show the similarities and differences between various models.

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Beveridge, E., "The Inside Story on Refigeration." Woman's Home Companion, LXXIV (May, 1947), 100.

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Bulletin. Home Heating. Better Buymanship Series. Booklet No. 20. Chicago, 11, Illinois. Household Finance Corporation.

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Chapman, Lee. "Good Budgets that Save You Time." Good Housekeeping, 124 (April, 1947), 146.

Chapman, Lee. "The Bride's Hope Chest Inventory." Good Housekeeping, 125 (November, 1947), 146

Editorial. "Automatic Toasters." Consumer's Research, 19 (December, 1946), 21.

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Editorial. "Cut Kitchen Waste." Consumer's Guide, VIII (January, 1942), 6.

Editorial. "Mechanical Refrigerators." Consumer Reports, 11 (May, 1946), 7.

Editorial. "Post-War Vacuum Cleaners." Consumer Reports, 11 (June, 1947), 183.

Editorial. "Pressure Cookers. " Consumer Reports, 11 (May, 1946), 118.

Editorial. "Refrigeration. " What's New in Home Economics, 11 (March, 1947), 98.

Editorial. "Refrigerators." Good Housekeeping, 125 (July, 1947), 112.

Editorial. "Test of Six Refrigerators." Consumer's Research, 20 (September, 1947), 13.

Editorial. "Three Pressure Sauce Pans." Consumer's Reserach, 20 August, 1947), 9.

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Choosing Large Household Equipment. No. 739. Burlington, Vermont. 1946.

Choosing Small Equipment for the Home. No. 740. Burlington, Vermont. 1946.

How to Choose and Use Your Refrigerator. U.S.D.A. A.W.I. 56. Washington, D.C.

Knives and Sharp Edged Tools for the Kitchen. No. 525. Burlington, Vermont. 1939.

Planning A Locker Plant. No. 58. Athens, Georgia.

Selection and Management of Kerosene Cook Stoves. No. S. C. 41. Lincoln, 1, Nebraska. 1938.

Selection of Pots, Pans, and Ovenwear. No. 750. Burlington, Vermont. 1940.

Small Equipment for Farm Kitchens. No. E. 353, Stillwater, Oklahoma. 1939.

When You Buy A Freezing Cabinet. No. 373. Storrs, Connecticut.

When You Buy Household Equipment. Serier 14. No. 6. Morgantown, West Virginia.

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Sweeney, Elizabeth. "Your New Electric Range." McCall's, 73 (June, 1946), 7.

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Voight, Annabelle. "How to Choose A Pressure Sauce Pan." Good Housekeeping, 123 (September, 1946), 124.

IV USE OF HOUSEHOLD EQUIPMENT

The Current high cost of new equipment and the unusual demand for it created by the shortage during the recent war years impels the intelligent consumer to study the proper use of equipment. Every established home has useful equipment that must be operated wisely if it is to serve efficiently over a period of years. Since homes are operated more efficiently where the right equipment is used for each job, the wise homemaker will want to possess as wide a variety as possible and in turn prolong intelligently its ability to render service. It is wise to use a piece of home equipment as long as it is performing economically and giving satisfactory results. It is wasteful to discard any piece of equipment which functions satisfactorily.

The manufacturer's directions should be filed or stored in a convenient place for reference. These have been prepared by research workers concerned with explaining how to operate a particular piece of equipment so as to get the best result from using it. If the instructions are lost the operator cannot be sure of the best procedure to follow. The student may learn to use household equipment more wisely if helped to:

(1) Analyze the properties of the materials and parts used in their manufacture and know how these materials and parts react under conditions of usage.
(2) Discover the best technique for operating equipment of varied design and what if any relation exists between the design of a specific model and the energy which must be exerted to operate it.
(3) Understand scientific principles which throw light upon the best way to use any piece of equipment.
(4) Understand the need for using household equipment for multiple purposes.

(5) Become skilled in evaluating the comparative working efficiency of models sold at different price levels.
(6) Master the control of the simple mechanical processes involved in operating household equipment.
(7) Learn how to teach others to use certain equipment to its best advantage.
(8) Understand the importance of eliminating poor work habits and faulty practices in order to increase the length of service to be had from specific equipment.
(9) Appreciate standard requirements for the performance of household equipment; i. e., tolerance, safety features, and operating characteristics.
(10) Appreciate that the intelligent use of available equipment in performing household tasks may yield increased leisure.

The teacher may expect that the student who has learned the best way to use household equipment will:

(1) Make use of scientific principles while using household equipment.
(2) Vary his technique to protect each piece of equipment he uses. In other words he will make practical application of his knowledge of materials involved, construction features; operating characteristics and safety features.
(3) Contribute to the family security by using the household equipment intelligently.
(4) Want to continue to study time and motion in relation to fatigue and make ever more efficient use of equipment.
(5) Aid others to make better use of equipment.
(6) Influence the family to choose equipment in terms of the greatest practical use.
(7) Collect readily available practical data pertaining to the use of household equipment.
(8) Put available equipment to multiple use in order to save money, time, energy, and storage space.

Some suitable student activities which may be expected to develop skill in the use of household equipment are listed below. Encourage the student to:

(1) Participate in selecting class activities according to interests and needs.
(2) Plan and participate in field trips or excursions to local manufacturers and retail stores willing to demonstrate the use of household equipment.

(3) Attend lectures given by local specialists or teachers on the proper use of household equipment.
(4) Participate in a chalk talk by the teacher or by other students.
(5) Plan a time and motion study pertaining to the more efficient use of household equipment.
(6) Select an item of equipment to study the best rules for its use and present the findings to the class.
(7) Practice reading gas and electric meters efficiently and calculate the exact operating cost of specific pieces of equipment.
(8) Study the danger of overloading an electric current with labor saving devices.
(9) Prepare slides pertaining to the use of household equipment and accompany each with a written explanation.
(10) Plan and arrange an exhibit or display referring to the use of household equipment.
(11) Select home projects which deal with the use of household equipment. For example:
   a. Rearrange equipment for specific work areas.
   b. Prepare plans for the better use of home equipment.
   c. Pipe water to a kitchen without modern conveniences.
   d. Through time and motion studies develop better work patterns for household equipment in use.
   e. Learn to use in own home such household equipment as the washing machine, ironer, electric mixer, and the vacuum sweeper.
(12) Bring from home for class study any piece of small household equipment seldomly used.
(13) Develop a work chart for using household equipment.
(14) Visit homes to observe the home projects of others.
(15) Plan lectures, demonstrations, forums, symposiums, and other dramatizations for the class or other groups.
(16) Write articles and scrips for the local newspaper and radio station respectively.
(17) Write a report for class presentation on any of the following problems:
   a. In what way does the use of household equipment relate to our national welfare?
   b. What are some of the responsibilities an individual must accept when using equipment in the family group?
   c. How can the equipment in one's own home be used to better advantage?
   d. How does the household equipment used at the present compare with that used in the homes of our grandparents?
   e. Is household equipment more usable in the town or on the farm?
   f. What is the relative serviceability of the equipment used in the represented homes in the class?

g. What information, terms and definitions are used to describe the successful operation of household equipment?
h. What kinds of materials are used in constructing equipment and what effect will each have on the use of [illegible]?
i. What heights for working surfaces are desirable for the different individual students?

Preliminary activities which the teacher might find helpful are suggested below:

(1) Prepare to give competent advice on projects in which the students are likely to be interested.
(2) Secure the aid of reliable persons to conduct field trips or present lectures on the use of household equipment.
(3) Plan and prepare a weekly column for the local newspaper on the subject of using household equipment wisely.
(4) Collect reference material pertaining to the use of household equipment; i. e., books, periodicals, articles, and newspaper clippings.
(5) Plan demonstrations for several time and motion studies dealing with the use of household equipment.

As the student thinks reflectively about the problem of selecting household equipment he may reach the following conclusions or generalizations:

(1) The person who has insight into the proper use of equipment may make a more effective contribution to his family.
(2) Study of household equipment gives a basis for judgment whether certain equipment meets the needs of specific family members, and whether it meets the health requirements of the family and community.
(3) Insight into the proper use of household equipment develops a desire for more and better equipment.
(4) Knowing how to use equipment gives a sense of security.
(5) Both the equipment and the plant in which it is used must be clean and sanitary to procure from it the most effective work.
(6) People who make the greatest use of scientifically produced equipment tend toward liberalism and more democratic living.
(7) Individual and family traits often find their origin in the physical plant in which responsibilities are shared.

Some of the visual aids dealing with the study of the use of household equipment are listed below:

Vanishing Vitamins. (S-2480) 1943. 16 MM. Silent. 1 reel. 17 Minutes running time, General Electric Corporation. Schnectady, 5, New York. 1 River Road.

Forty Billion Enemies. 16 MM. Sound. 3 Reels. 25 Minutes Running Time. 306 Fourth Avenue, Pittsburg 30, Pennsylvania. Westinghouse School Service. Westinghouse Electric Corporation.

How to Get the Most out of Your Refrigerator. 16 MM. Sound. 3 Reels. 30 Minutes Running Time. General Motors Corporation. Broadway at 57th. St. New York, 19, New York.

As Always. (S-2497) 1943. 16 MM. Sound. 1 Reel. Color. 15 Minutes Running Time. General Electric Corporation. Schenectady 5, New York. 1 River Road. Refrigerators.

American Tempo. (S-2495). 1943. 16 MM. Sound. 2 Reels. General Electric Corporation. Schenectady 5, New York. 1 River Road. Mazda Lamp.

Dawn of Better Living. 1946. 16 MM. Sound. 1 Reel. 16 Minutes Running Time. Westinghouse School Service. Westinghouse Electric Corporation, 306 Fourth Avenue. Pittsburg, 30, Pennsylvania. The Electric Home of Tomorrow.

Don't Blame It on The Oven. (S-2515). 1943. 16 MM Sound. 2 Reels. 19 Minutes Running Time. General Electric Corporation. Schenectady 5, New York. 1 River Road. Use and Care of the Oven.

Proof is in the Pudding. (S-2465). 16 MM. Sound 1 1/2 Reels. 1h Minutes Running Time. General Electric Corporation. Schenectady 5, New York. 1 River Road. Advantages of the Modern Electric Range.

Home Electric Appliances. 1 Reel. Encyclopaedia Britannica Films, Inc. 1841 Broadway, New York, 23, New York.

Into the Wringer and Out. (S-2514). 1943. 16 MM Sound. 1 Reel. General Electric Corporation. Schenectady 5, New York. 1 River Road. New and Old Fashioned Washing Machine.

It Could Happen To You. 16 MM. Sound. General Electric Corporation. Schenectady 5, New York. 1 River Road. Advantages of the Laundromat.

Surprise for Janie. 16 MM. Free for two days. Sound. Nash Kelvinator Corporation, Film Services, 14250 Plymouth Road, Detroit 32, Michigan. The home freezer's role in better living.

Date Line Tomorrow. 1946. 16 MM. Sound. 2 Reels. 19 Minutes Running Time. Aluminum Company of America. Motion Pictures Department. 801 Gulf Building, Pittsburg 19, Pennsylvania. Various finishes for Aluminum.

Home Equipment. No. 275. 35 MM. Film Strip. Extension Division, Visual Aids Section. A.& M. College. Stillwater, Oklahoma.

Frozen Food Lockers and Your Food Supply. No. 586. 1940. (B.A.I. Ext.). Washington, D. C.

Step By Step in Every Day Tasks. No. 643. 1944. Extension Division. Visual Aids Section. A. and M. College, Stillwater, Oklahoma.

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Simple Way to Iron A Shirt. No. 649. 1944. New York Extension Service. Time and motion study.

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Bulletin. Kitchen Utensils. Better Buymanship Booklet No. 7. Chicago 11, Illinois. Household Finance Corporation.

Bulletin. Vacuum Cleaners. Better Buymanship Booklet No. 21. Chicago 11, Illinois. Household Finance Corporation.

Bekhoff, Helen. "Gas Ranges." Practical Home Economics, XXV September, 1947), 430-432.

Editorial. "A Man's Shirt is a Woman's Problem." Good Housekeeping, 125 (September, 1947), 126.

Editorial. "Any Day is Drying Day with an Automatic Clothes Dryer." What's New in Home Economics, 11 (January, 1947), 78.

Editorial. "Cooking Electrically." What's New in Home Economics, 10 (September, 1946), 162.

Editorial. "Cutlery and Special Kitchen Tools," What's New in Home Economics, 10 (December, 1946), 76.

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Editorial. "How to Use the Modern Electric Range." Forecast, 63 (April, 1947), 26.

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An Analysis of Pressure Gasoline and Pressure Kerosene Stoves. M. B. - 127. Lincoln, 1, Nebraska. 1942.

Care and Use of Pressure Cookers. No. E. 508. Columbia, Missouri. 1944.

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Freezing Foods for Home Use. No. 244. St. Paul 1, Minnesota. 1946.

Home Laundry Management. No. E. 363. Stillwater, Oklahoma. 1939.

House Work the Healthful Way. No. 612. Burlington, Vermont. 1941.

How to Make Household Equipment Last Longer. U.S.D.A. A.W.I.-11. Washington, D. C.

How to Make Your Gas or Electric Range Last Longer. U.S.D.A. A.W.I. - 8. Washington, D. C. 1942.

How to Make Your Refrigerator Last Longer. U.S.D.A. A.W.I. - 4. Washington, D.C. 1942.

Ironing A Shirt. No. 645. Corvallis, Oregon. 1945.

Labor Savers in the Kitchen. No. 655. Corvallis, Oregon. 1945

Laundering for Conservation. No. 565. Burlington, Vermont, 1943.

Longer Life for Your Household Furnishings. No. O. P. 43. Stillwater, Oklahoma. 1942.

Keeping up Household Appearances. No. 321. Brookings, South Dakota. 1932.

Making Wash Day Less Hectic. No. 313. Brookings, South Dakota. 1931.

Methods and Equipment for Home Laundering. U.S.D.A. F. B. -1947. Washington, D. C.

Mind Your Motions As You Work. No. 5. East Lansing, Michigan.

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Save and Save. No. 395. Brookings, South Dakota. 1942.

Shortening the Work Hours. No. E. C. 1187 Lincoln 1, Nebraska.

Simple Rules for Home Laundering. C. 297. State College, Pennsylvania. 1946.

Simplifying Ironing. No. 341. Brookings, South Dakota. 1931.

Streamlining Housekeeping. No. 410. Brookings, South Dakota. 1944.

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Use of Time and Energy. H. D. 480. Berkeley 4, California. 1942.

Working Heights for Easire House Work. H. D. 486. Berkeley 4, California. 1943.

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V CARE AND REPAIR OF HOUSEHOLD EQUIPMENT

Every household has useful pieces of equipment on hand that require wise care if they are to serve effectively over a period of years. A homemaker will find that practically all items of equipment need regular cleaning and careful handling. The amazing and encouraging thing is that slight repairs and regular cleaning contribute as much as they do to the satisfaction to be had from the use of any and all pieces of equipment. A Cleaning or repair job taken care of promptly when needed may save time and add to the life of the equipment. A homemaker may be sure that the better the care given equipment the longer service she will receive from it.

The relationship of health to family cleanliness is all important. No home is satisfactory from the health standpoint unless it is kept clean in all parts. Cleanliness is desirable also from the standpoint of appearance. To achieve cleanliness considerable time must be spent by the members of the family or by an outsider engaged to do the work.

It is important to the homemaker to keep the manufacturers' directions for the efficient cleaning of equipment. Since the homemaker is usually the keeper of equipment in the home, knowing how to prolong its service through proper care and repair is one of the homemakers responsibilities. As equipment becomes more important in the home, the homemaking teacher has increased responsibility for helping the future homemaker to learn to care for and repair equipment.

The homemaking teacher needs to be sure of her purpose in a unit on the care and repair of household equipment. It may be desirable to help the students to:

(1) Understand that equipment must be kept clean and in good repair to obtain the most efficient use from it.
(2) Understand that clean, sanitary, and well kept equipment contributes to the health of the family and the satisfaction to be had in family life.
(3) Understand that cleanliness and the prompt repair of household equipment add to the length of serviceability of equipment.
(4) Show ability to find useful information about the proper care and repair of household equipment.
(5) Demonstrate skill in cleaning and making cleaning agents for household equipment.
(6) Develop the ability and skill to make simple minor repairs of household equipment.
(7) Appreciate the fact that skilled service men must be called to do the more complicated repair work on household equipment.
(8) Appreciate the fact that clean, well repaired equipment will give aesthetic satisfactions to the entire family.
(9) Accept responsibility for caring for household equipment.

The teacher may expect the following outcomes or change in behavior from the student who has learned the best way to clean and care for household equipment. He may:

(1) Assume greater responsibility to care for laboratory and home equipment.
(2) Develop an interest in home produced cleaning agents.
(3) Attempt simple home repairs on equipment.
(4) Help other members of the home and community to care for household equipment.
(5) Practice better sanitation, health and safety measures when caring for household equipment.
(6) Show more co-operation in the family group by assuming additional responsibilities.

To aid the student to develop skill and ability in the care and repair of household equipment, the teacher may encourage the student to engage in the following activities:

(1) Learn how to clean all materials such as silver, copper, brass, chromium, and pewter.
(2) Learn to oil and care for small equipment in the laboratory or at home.
(3) Inventory the cleaning and repair work needed to put laboratory in good condition.
(4) Polish the silverware in the department or at home.

(5) Make a plan for so scheduling special cleaning jobs that they do not have to be done at the same time.
(6) Give demonstrations to the class and other organizations on the care and repair of household equipment.
(7) Plan and carry through some item of publicity such as a local newspaper article or a local radio program.
(8) Plan and carry out a home project such as caring for or repairing a piece of household equipment.
(9) Plan and prepare an exhibit of electric cords and their repair, and display it at school and in a down town window.
(10) Demonstrate to class members how to repair a leaky faucet.
(11) Inventory the equipment in own home and recommend ways to improve the care and repair given to it.
(12) Make a tour of the local household appliance repair shops to learn various repair procedures.
(13) Invite the local light superintendent or other local authorities to lecture to the class on electrical and other equipment repairs.
(14) As a class project, make needed repairs on lamp or iron cords.
(15) Write a report on one of the following:
   a. Repairs to be attempted by a family member and repairs for which a specialist is needed.
   b. Plans for keeping own home equipment in repair.
   c. The procedures for cleaning such plumbing as traps, pipes, sinks, lavatories, and washing machine drains.
   d. The fundamentals of using electricity in the home.
   e. Ways of safeguarding the home use of electricity.
   f. The care and repair of electric cords in the department and at home.
   g. The practical ways of taking care of electrical equipment in the home.

Preliminary activities the teacher might find helpful are to:

(1) Collect pamphlets and charts on repairing electrical and other equipment.
(2) Collect those items necessary to make repairs on equipment in the laboratory.
(3) Collect charts and exhibits on home wiring.
(4) Secure pertinent dramatizations and the like for class use.
(5) Collect aids and reference material for the students to use in writing reports.
(6) Secure local authorities to give talks and demonstrations to the class group on caring for and repairing equipment.

As the students think reflectively about the problem of caring

for and repairing household equipment he may reach the following conclusions or generalizations:

(1) A division of labor and responsibility for caring for and repairing home equipment lightens the burden for all.
(2) Boys and girls can find opportunity to contribute to the care of the family equipment.
(3) All people in a community should co-operate in caring for public plants and equipment.
(4) Improveiskill in caring for equipment also means more satisfaction and enjoyment when using the machine.
(5) A well planned cleaning routine is possible only when good cleaning methods and efficient equipment are used in the home.

Visual aids relevant to the study of the care and repair of household equipment are:

Chart. Adequate Home Wiring. New York. 55 E. 44th St. National Adequate Wiring Bureau.

Chart. How to Safeguard Electric Service in the Home. New York. 115 East 44th St. Electric Cord Manufacturing Co.

Chart. Luxury Lighting at Low Cost. Oklahoma City. Home Service Department. Oklahoma Gas and Electric Company.

Coupon Section. What's New in Home Economics, and Practical Home Economics.

Linoleum Samples. Lancaster, Pennsylvania. Armstrong Cork Products Company.

Poster. Safeguarding Electricity. National Electric Light Association.

Sewing Machine Charts. Dallas, Texas. Educational Department. Singer Sewing Machine Company.

Don't Blame it on the Oven. (S 2515) 16 MM. Sound 2 Reels. 19 Minutes Running Time. 1943. General Electric Company. Schenectady 5, New York. 1 River Road.

From Bristles to Brushes. 16 MM. Sound. 3 Reels. 30 Minutes Running Time. Castle Distributors Corporation. Chicago, 3, Illinois. 135 South LaSalle Street.

How She Does It. Silent. Slide. 25 Minutes Running Time. 1946. Lecture Accompanying. 919 N. Michigan Avenue, Chicago, 11, Illinois. Household Finance Corporation. Time and Motion.

Proper Care Means Longer Wear. Sound. Slide. 15 Minutes Running Time. Westinghouse School Service.

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Care and Repair of Electrical Cords. No. 104. State College Pennsylvania.

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How to Make Your Electric Cords Last Longer. U.S.D.A. A.W.I. -20. Washington, D. C.

How to Make Your Washing Machine Last Longer. U.S.D.A A.W.I. -6. Washington, D.C.

Keeping Up Household Appearances. No. 321. Brookings, South Dakota. 1932.

New Life for Old Furnishings. Series 2. No. 3. Morgantown, West Virginia.

New Touches For Old Furnishings. Series 9. No. 4A. Morgantown, West Virginia.

Taking Care of Electrically Heated Household Equipment. No. 652. Burlington, Vermont. 1942.

Take Care of Household Rubber. U.S.D.A. A.W.I.-7. Washington, D. C. 1942.

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VI GENERAL REFERENCES

There are a number of books, pamphlets, and articles that do not lend themselves exclusively to any one of the major objectives developed here, but serve as reference to several or all of the units of work. Therefore, they have been listed in a general bibliography which is offered here.

In general, readings included in this reference list and the four preceding ones are for use by the teacher and student alike. Since extension bulletins are especially adaptable to adult use, it is recommended that the teacher sending for such bulletins request several copies. These may then be filed for personal reference, student reference, and adult reference. Moreover, it is a desirable procedure for the teacher to know the contents of each bulletin or article before giving it to others to read.

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VII EVALUATION

The task of appraising student growth in the classroom is a complex one and so must be approached through the many factors which affect student behavior. For years the student has been graded largely upon the formal examination designed to discover what factual subject matter has been retained.

The current attempt to measure student growth and development in other specific directions calls for new appraisal techniques. Changed behavior may be identified only in terms of such regulators of behavior as: new concepts, richer understandings, higher levels of skills, greater abilities, new attitudes, higher ideas, and the acceptance of new values.

Educators are now realizing that it is one thing to acquire information and another to have developed the ability to make use of the information or to influence others to change the pattern of their day-to-day living. Some form of final judgment is generally demanded by administrators, but testing as such has been of little value in many instances because the educational goals have been rather obscure in the teacher's mind. She, therefore, has made appraisal solely upon grades based upon the test of memory and the promptness and effectiveness with which assignments have been fulfilled. In contrast Schorling[1] suggests that the student be evaluated in terms of goals that have become desirable to him and which are definite, immediate, and obtainable. He further suggests that while the student's control of information is important

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[1] Schorling, Raleigh. Student Teaching, (First Edition; New York: McGraw-Hill Book Company, Inc., 1940).

if considered alone it does not give a fair picture of the total effect which an educative experience may have had upon the student. To discover if learning is taking place the teacher will need to know what the student is like when he enters the class. The decision concerning what information is to be emphasized in the class room will hinge upon knowledge of the student's home life and community background, the state of his physical and mental health, his previous educational experience, the level of his emotional development, as well as his present level of skills and of intellectual maturity. From this knowledge the teacher gains sufficient insight into the problems faced by the student to guide him in determining objectives and goals to be aimed for in the class room. It is of great importance that the students in a class be allowed to help to formulate the class objectives so that they are meaningful to students, parents, and teachers alike. The teacher must recognize that appraisal of the student is continuous and must have a broader base than a spot survey. This set of criteria indicate that fair appraisal must be objective, based upon multiple evidences and measured in terms of obtainable goals.

There are several accepted methods of discovering change in student behavior which seem to be expedient for use in connection with this source unit. The most frequently used is the pencil and paper test which currently takes on new form to make the scoring more objective.

This type of test used alone may appraise only the student's ability to recall facts even though set up as completion, true-false, matching, or multiple choice tests. While the teacher does not get a true or broad picture of the student's ability to use his pertinent knowledge from

these new type tests the importance of such testing is not to be minimized. Since reliable thought is impossible without information, the new type pencil and paper tests have definite place in a well integrated evaluation plan. The fallacy in placing too much importance on the result of the pencil and paper test is that no two individuals learn at the same speed or come to a specific class with similar previous experiences. Progress rather than any special level of achievement should be the evidence sought by the teacher who is guided by democratic principles and recognizes individual worth.

One evaluation procedure directly in line with democratic principles is that of self-appraisal or student-prepared progress reports. The use of this method involves the teacher and student similarly in many of the steps used in thinking reliably. In the first place, as has been said, the teacher and the students must agree upon the objectives to be attained so that both understand and accept them as worth while and desirable. The teacher then encourages the student to score or check himself continuously on progress toward accepted goals through written reports, class room demonstrations and self-administered tests. This, in effect, becomes a sort of guidance program where the teacher and student find themselves upon common ground.

There are several advantages to the program that includes self-appraisal as a method of determining student growth. The teacher is able to compile from progress reports a descriptive report which becomes more meaningful to the parent and student than a numerical grade. This also acquaints parents with class objectives and helps them to think more of the development of the child than of the family tradition of high grades. When the student discovers he is moving towards the objective he is

generally motivated to exert himself to his fullest capacity.

A satisfactory method of appraisal closely allied with self-appraisal and one that also provides excellent material for use in a guidance program is that of studying student actions and reactions. These are usually recorded in the form of anecdotal records. This method might include, among other things, a record of informal conversations with parents, and observations in the laboratory or on home visits. This means work for the teacher and gives further argument for pre-planning both of source units and detailed lesson plans. Such information may be compiled by a single teacher or by a group of teachers with a common interest in various students.

Another evaluative device, that of measuring skill in real life situations, is highly desirable but not always possible. In place of this procedure, the teacher may set up a life-like situation in the laboratory in which the student's ability may be proved. Learning experiences through the study of household equipment lend themselves quite well to the performance test which provides evidence that skill and ability have been acquired. This type of testing not only measures the ability of the student to recall subject matter, but also his ability to make successful application of subject matter learned. Levels of skills and abilities may be determined in several ways; namely, through observation of performance in laboratory work, by evaluation of the skill and ability made evident through class room demonstrations, or through casual observation by the teacher in pertinent out-of-class situations.

Evidence that the students are becoming progressively intelligent in matters pertaining to household equipment may be found in the following

suggestions for new type tests:

(1) The student's understanding of terms commonly used in connection with household equipment and of the basic principles involved in the intelligent arrangement, selection, use and care of household equipment may be measured objectively through the use of any of the new type pencil and paper tests. However, before the teacher attempts to set up completion, true-false, matching or multiple choice tests dealing with household equipment she should familiarize herself with the literature dealing with these tests.

(2) A check list may be used to discover the student's relative ability to distinguish between family needs and family wants for household equipment.

(3) The completion type test might lend itself readily to the testing of the student's knowledge concerning the basic scientific principles which have been used in designing and constructing household equipment.

(4) Matching or multiple choice tests may be used to discover what the student knows about the good and bad points of specific kinds of equipment manufactured by the various producers.

The student is encouraged to discover the extent to which the study of household equipment has added to his functional knowledge by preparing:

(1) Written reports dealing with the comparative buying of selected pieces of household equipment.

(2) Demonstrations of time and motion studies showing the relative effectiveness of selected pieces of household equipment.

(3) Statements, at regular intervals, concerning his own awareness of progress towards previously accepted goals or class objectives.

(4) Statements, from time to time, concerning the relative satisfaction he finds in the educational experiences sponsored in the studying of household equipment.

(5) Plans for the independent pursuit of activities or the development of self-initiated projects which are related to the study of household equipment.

Indication of the student's pertinent attitudes, appreciations, and abilities to apply his knowledge may be found in anecdotal records. These may include:

(1) Incidents observed as he works in the laboratory and class room.

(2) Statements made in informal conversation which are heard, overheard, or reported.

(3) Such records might reflect:
   (a) The student's attitude towards planning convenient kitchens.
   (b) The student's willingness to correct faulty procedures in his use of household equipment.
   (c) Greater judgment in valuing household equipment as it relates to family and community health and sanitation.

Some data on the level of pertinent skills and abilities reached by the student may be secured by the use of performance tests. He may be given opportunity:

(1) To prove his ability to plan efficient kitchens and to select equipment intelligently. For example, he may be asked to draw a kitchen plan to scale which shows what equipment he considered essential, what desirable, what makes of equipment he would buy, where he would locate it, and what he would pay for it.
(2) To indicate what changes he would recommend for a specific known kitchen which is inefficiently arranged and poorly equipped.
(3) To make recommendations for the purchase of new laboratory equipment.
(4) To collect pictures showing various types of well-arranged kitchens and indicate under what circumstance he would recommend each type.
(5) To give demonstrations dealing with the efficient arrangement, the factors to consider in the wise selection, the rules to respect in using, and the care to give various pieces of equipment.
(6) To repair equipment under supervision or on his own judgment.

The development of detailed plans for appraising both the extent to which learning has occurred for the student and the relative wisdon with which class objectives and procedures have been selected by the teacher must of necessity follow specific situations. Therefore, the above represents merely general suggestions for possible evaluative procedures which are currently accepted as sound.

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