

DESIGN, IMPLEMENTATION, AND EVALUATION OF SELF-  
LEARNING PACKAGES FOR KITCHEN CUTTING  
TOOLS AND KITCHEN RANGES

By

MARYLIN JONES COLLIER

Bachelor of Science

Purdue University

Lafayette, Indiana

1964

Submitted to the Faculty of the Graduate College  
of the Oklahoma State University  
in partial fulfillment of the requirements  
for the Degree of  
MASTER OF SCIENCE  
May, 1971

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Thesis Approved:

*Helen McKinney*  
\_\_\_\_\_  
Thesis Adviser

*Gene M. Mans*  
\_\_\_\_\_

*Charles J. Johnson*  
\_\_\_\_\_

*D. D. Burham*  
\_\_\_\_\_  
Dean of the Graduate College

758223

## ACKNOWLEDGMENTS

The author wishes to express her sincere appreciation to Dr. Florence McKinney, for her guidance and her counsel during the preparation of this thesis.

Special recognition goes to Mrs. Gertrude Means and Mrs. Christine Salmon for serving as members on the thesis committee.

The author is indebted to Miss Sue Herndon, for her understanding and her patience during the duration of this study.

A vote of thanks is extended to Dr. Elaine Jorgenson, Dr. Joan Baird, and Miss Martha Crawford for proofing the self-help packages.

The author is grateful to the students enrolled in HMGT 3223 Fall Semester, 1970.

A special thanks goes to Miss Eloise Dreessen for typing the thesis.

Special recognition goes to the author's husband, George A. Collier, for his valuable assistance in the analysis of the data.

A special thanks also goes to the author's son, Trey Collier, for his encouragement during the course of this study.

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## CHAPTER I

### INTRODUCTION

Individual instruction is not a new teaching technique. Socrates used it during the 400 B.C. However, not until the 1920's did individual instruction start to flourish in America. Almost simultaneously several institutions developed an individual study program: Smith, Brown, and Swarthmore in 1920, Princeton in 1923, Stanford in 1937, and Harvard in 1938. The development of individual study was similar in these schools. The first independent study courses were developed in one department and then were expanded later to other departments. They were designed for junior and senior honor students and were required courses for graduation.

To foster learning, Ahmann and Glock have identified three major educational goals: to present the subject matter to the student, to help the student to reason and to think for himself, and to develop skills and techniques. Have these goals been met today by the teacher? Will these goals be met tomorrow by individual instruction? These are questions that must be answered.

Taylor in Portrait of a New Generation, stated: "the direction of educational thinking is conservative, restrictive, and reactionary" (29,p.89). He further explained how individual students are expressing their own concern for the importance of the individual. In College Freshman Speak Out, Townsend emphasized that students considered their

curriculum meaningless. They want to become more actively involved in their learning processes, their curriculum schedule, and their educational goals. "Students' individual satisfaction with the climate of the class makes for learning," according to Walberg and Anderson (33, p.414).

Since more of our young people are entering colleges, it is more difficult to teach each one as an individual under our present educational system. Webster states: "Along with an increasing proportion of youth entering college, greater diversity of student characteristics is clearly observed among and with institutions of virtually all types (37,p.145). Each student is different in abilities, attitudes, achievements, and interests from other students. Thus, each student learns in different ways and at different rates. Some of the classroom's major problems are due to individual differences among students (7).

Each person is unique. This is the most significant , most important fact about any human being. The fact that each individual is unique means that each person has something, which nobody else on earth has or knows (16,p.55).

Recent quantitative studies conducted by The Center for the Study of Higher Education have provided data showing a large degree of differences in student's personality, attitudes, interests, and study techniques. Tyler also confirms this theory of student uniqueness and states individual differences exist in student's academic achievement and psychomotor skills (32).

From the students who were enrolled in the household equipment course at Oklahoma State University, the researcher asked them to describe their own ability and their knowledge of household equipment. Although they were all junior and senior students majoring in home

economics education, the researcher found their experiences and knowledge of household equipment placed them on unique levels. A few, (less than ten per cent), had no previous experiences in either school or home. A limited amount of experience such as helping at home was indicated by half the class. Several, (fifteen percent), had some type of formal education from junior colleges and 4-H work on the basic principles of the use and the care of household equipment. Students who were married and lived in their own homes or apartments totaled twenty-four percent. They had operated and had cared for their own household equipment every day from a few months to as long as twelve years. These variations in previous experiences emphasized a need for not only allowing the students to pace their learning but also to increase their factual knowledge in household equipment.

Individual differences refer to the dissimilarities among the various members of a class or age group in any characteristic that can be identified . . . Individual instruction meets the needs of the pupils each of whom is a unique individual (6, p.267).

Individual instruction helps the student learn by providing a new arrangement of the subject with effective and efficient techniques. Students are forced to participate because the program waits until the student responds to the activities. Students work at their own pace by constructively using unscheduled time and by responding to learning objectives and learning activities.

Peter Drucher, author of Landmarks of Tomorrow, is an advocate of individual learning. He calls this technique, "creating tailored learning experiences" (9,p.124). The goal of individualization is a development of human potential and a total response from the individual.

Individual instruction is receiving more and more attention from



psychologists and educators. Skinner states: "Educational technologists are greatly concerned about the conditions and the educational environment which bring about such behaviors in the student" (27, p.829). However, the potential value as an educational aid has only begun to be recognized.

#### Statement of the Problem

The problem of this research on individualized instruction is to develop a more effective method for teaching large classes of college students who are enrolled in the first year household equipment course, Home Management 3223, at Oklahoma State University, Stillwater, Oklahoma. Two self-help packages for individual student work were designed in the areas of selection, care, and use of kitchen cutting tools and kitchen ranges. The packages were evaluated as to their effectiveness of learning.

#### Hypothesis

- $H_0$ : The null hypothesis is that there is no significant difference in overall academic achievement of learning by the students using the self-help packages compared to those taught by the traditional method.
- $H_a$ : The alternative hypothesis is that there is a significant difference in the overall academic achievement of learning by the students using the packages compared to those taught by the traditional method.

### Objectives

1. To design two individual self-help study packages that can be used by the students to perform laboratory assignments and lecture assignments at the students own pace and own time.

2. To administer the self-help packages to the students enrolled in the first year household equipment course, using experimental groups and control groups.

3. To determine through objective test scores how effective the packages are as a teaching aid compared to the traditional method of teaching.

4. To determine the attitudes of the students toward this type of teaching aid.

5. To recommend improvements of the packages and the areas for further study.

### Assumptions

1. The student grade point averages are a measurement of student academic ability.

2. The control groups and the experimental groups would not exchange the two self-help packages.

3. Students are capable of learning independently and are capable of being self-directed.

### Limitations

1. The sample was limited to forty students of junior and senior standing who were enrolled during the 1970 fall semester in the first

year equipment course HMGT 3223 at Oklahoma State University.

2. The self-help packages were limited to two areas: selection, care, and use of kitchen cutting tools, and selection, care, and use of kitchen ranges.

3. The post-test evaluation was limited to 30-35 minutes instead of an unlimited amount of time.

4. The criteria used to divide the students into "matched groups," one control and one experimental, were the students' grade point averages.

#### Definitions

1. Traditional teaching method: students learn by the lecture system during scheduled hours and laboratory classes.

2. Individual study: each student pursues package's goals at student's own pace and student's own time in-place of regularly scheduled classroom hours.

3. Self-help learning packages: a complete unit containing written objectives, learning experiences, self-evaluations, pre-test, and post-test, to be used by the student as the student sees fit to further knowledge in the area of study.

4. Experimental group: students from two laboratory sections who used the self-help package as a learning device.

5. Control group: students from two laboratory sections who used the traditional method of learning.

## CHAPTER II

### REVIEW OF LITERATURE

The most fundamental reason for studying teaching methods is to determine what conditions favorably affect student learning (24,p.111).

#### Studies of Individualized Instruction

Results of most research data on individualized instruction provides no significant difference in learning. These results cause a wide difference of opinion as to its success. Today many new techniques such as: nongraded classes, flex-modular scheduling, team teaching, computer-assisted instruction, independent study program, and self-initiated learning units are trying to meet the educational goal of individualized instruction. However, none are fully effective as a learning device (28). Even though McKeachie's material did not support increase in learning through individual instruction, the students found the individual instruction more involving and more interesting than the regular teaching method (18).

Generally, field studies such as those done at Winnetka (35), Stanford (23), Wooster (5), and Parsons (21), revealed more favorable reaction to individual instruction than the conventional instruction. The Parsons' study in 1957 provided data that students working independently made higher test scores on the final examination than the students in structured classrooms (21). A study at Cornell University on

curriculum packages also showed the students made significant gains in knowledge (14).

One of the most recent studies was made at Portland's Marshall High School. The formula used in the study was to let the students do their own learning. Marshall's program was based on Stanford University School Scheduling System. The study concluded: "students learned as much or significantly more in certain areas than students under the former traditional program" (22,p.170). A follow-up study showed a longer retention rate held by the students using individual instructional materials. The students also had a positive attitude toward the individual instruction. The study's most important development was the learning packages.

#### Individual Study Packages

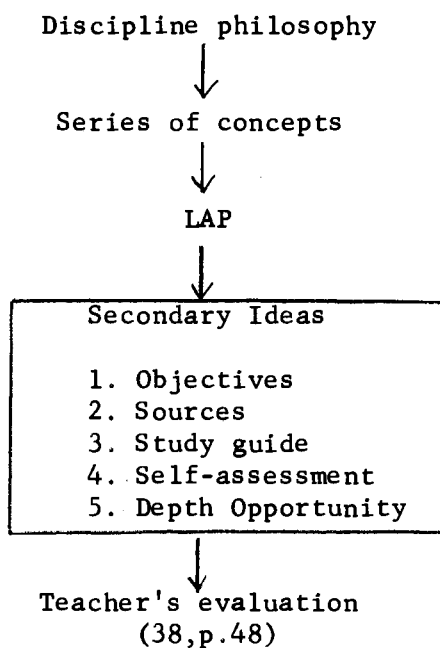
McNeil states: "Independent study programs offer the teacher a practical and an effective means for improving and strengthening instruction and for guiding the individual learner" (19,p.16). A study conducted at Pennsylvania State University indicated the self-directed and the self-initiated learning units were the most practical at the present time (25).

Several designs of individual study packages have been developed. Descriptions of five different package designs will be presented briefly in the discussion that follows. These five packages are identified as: (1) Learning Activity Packages, (2) Individually Prescribed Instruction, (3) Unit Packages, (4) Teaching-Learning Units, and (5) Home Economics Learning Packages.

The Learning Activity Package (LAP) is designed by Dr. James Smith

at Nova Schools in Fort Lauderdale, Florida (19). A package contains course objectives, curriculum and study material, lesson plans, and teacher resource material. LAP is designed for the student to use at his own pace.

The over-all organization of the packages can be expressed schematically:



The basic concept of LAP is an identification of a learning area. Further, LAP directs the student's learning by a set of learning experiences and asks the student to demonstrate the learning experiences. The responsibility of learning is placed directly on the student by allowing him to complete the package at his own pace and his own level of ability. Learning experiences are designed so that the student is involved in decision making.

Not only do the packages meet individual needs of a student, but they also provide alternative activities and guide the learner toward

his area of interests (15). Activities with the student's peers and student's instructors are made available throughout the package.

The evaluation techniques used for LAP are comparison scores on the pre-test and the post-test, depth of study, and amount of time it took to complete the package. The pre-test relates to specific behavioral objectives. This test helps determine the level of ability for each student. The post-test is administered to each student when both he and the teacher think he is prepared to perform correctly the course objectives. The test measures to what degree student achievement has been attained. Self-evaluations included in the package are student directed. The student answers a group of questions and corrects them with the answer key available in the package. The student is then able to determine his own level of achievement and his own progress toward the objective.

The Learning Research and Development Center (LRDC) developed Individually Prescribed Instruction (IPI). The program involves three goals: "to provide mastery of a subject matter, to develop self-directed and self-initiated learners, and to help students become more actively involved in the learning process" (4,p.829). At the beginning of each year the students take a placement test to determine their general placement. The IPI uses the pre-test to measure the student's ability for each objective within a unit. A post-test aids the student and the teacher to decide when the student is ready for the next learning program.

A third self-instructional unit called Unit Packages (UNIPACS) were developed by the Kettering Foundation's Institute for Development of Educational Activities (I/D/E/A) (28). Under the guidance of a

workshop sponsored by the Materials Dissemination Center, teachers developed self-instructional materials. The development for both the UNIPACS and IPI are similar to that described for the LAP. However, the Center has an exchange system. Teachers can send in a self-designed UNIPAC and can receive another package. The UNIPAC sent in return can be the area of the teacher's choice.

Flanagan's Teaching-Learning Units (TLU's) use current reference material on grade school subject matter to help the students pursue individual areas and to meet the stated objectives (7). TLU's recommend the following as an outline for developing units: (1) develop a comprehensive list of general concepts, (2) state the behavioral objectives as to what the student will be expected to do after instruction, (3) develop learning activities for each objective, and (4) develop evaluation standards. TLU's are developed so students can learn at their own rate. However, the students direct themselves toward the objectives independently. Each study unit has a time limit of approximately two weeks.

At the 1969 American Home Economics Association Post-annual meeting, Shear and Ray introduced a teaching aid for individual learning called Home Economic Learning Packages (HELP). These packages are designed so that the teacher can develop and can test them on her own. Each package presents a basic concept of some home economics subject matter. A package is divided into several lessons. Each lesson represents a learnable idea of the general concept. The students are able to work through the package at their own pace and their own style. Each learning package follows the same design and is made of six components.



Components of the learning packages:

1. Concept--general idea to be learned
2. Instructional or behavioral objectives--statement telling the students exactly what they will be expected to do
3. Multi-dimensional learning materials--range in the type and complexity
4. Diversified learning activities
5. Evaluation activities--pre-test, post-test, and self-evaluations
6. Quest--optional further study material for the student. (25,p.769).

Evaluation Devices

An educational program is incomplete until evaluation is accomplished. Evaluation is not an independent part but an integral part of the educational program. Evaluation is a positive look at the degree to which students have achieved the behavioral objectives. The progress of the student is recorded in evaluation. Evaluation reveals strengths and weaknesses in the program which helps the student and the teacher make further decisions about the course objectives.

According to Wilhelms, evaluation should: (1) help the learner to decide what is important, (2) give feedback for guidance in further study, (3) help see progress, (4) encourage more learning, (5) give basis on which to make decisions, (6) challenge students not threaten them, (7) proceed continuously, (8) give the opportunity to appraise oneself, (9) facilitate learning, teaching, and self-evaluation, and (10) provide a reappraisal and a basis for making new decisions.

Evaluation helps the teacher determine the degree to which educational objectives have been achieved. The course objectives must be known before good evaluation devices can be developed. Evaluation of a program without objectives is impossible. An objective describes the

kind of behavior the student is expected to demonstrate. Today educational objectives reflect the needs of the students and society.

Objectives are classified into three domains: cognitive, affective, and psychomotor. These objectives are described in Bloom's Taxonomy of Educational Objectives which is a classification of learning behaviors of students.

Cognitive Domain:

Knowledge--remembering by recall  
 Comprehension--making use of facts  
 Application--solving lifelike problems  
 Analysis--clarifying organization by parts  
 Synthesis--combining elements in an organization  
 Evaluation--developing criteria to establish a goal

Affective Domain:

Attending--awareness, willing to learn  
 Responding--react out of compliance  
 Valuing--accepting idea and develop it  
 Organizing--determining interrelationships of values  
 Characterizing--selected values interwoven into a total philosophy

Psychomotor Domain:

Observe--watches  
 Imitate--follows directions with effort  
 Practice--perform habitually  
 Adapt--make modification in process to suit particular circumstances (3).

Because human behavior is so complex, it cannot be adequately measured by one type of evaluation. Student achievement is also divided into the same domains: cognitive, affective, and psychomotor. An evaluation of academic achievement belongs in the cognitive domain. Various types of evaluation are needed to appraise progress in all types of learning behavior not only factual knowledge.

Evaluation devices are designed to determine the effectiveness of stated objectives. According to Ahmann and Glock, today the most

popular and the most effective evaluation is the group written achievement tests (1). However, one test score should not be used for the complete evaluation. Several types of achievement tests are used to measure how the student's knowledge compares with other students.

A pre-test determines a student's strong and weak areas in the learning program. The pre-test is also used with the post-test to measure student progress and student ability. A post-test evaluates the student's individual growth and points out the problematic areas.

Academic achievement tests measure the mastery of the subject area. If given after a time lapse, it also measures retention. Achievement tests need to be reliable and valid. Reliability gives constant results no matter who takes the test. Validity measures what is intended to be measured. Every objective taught is tested. A table of specification increases the validity of the test. This table is a chart of the behavioral objectives and the level of attainment.

The following are criteria for developing good evaluation devices: (1) an adequate sample of difficulty, behavioral objectives, learning areas, and type of answers, (2) appropriate to student's level of ability but challenging, and (3) practical to record and to score the answers.

Academic achievement is not limited alone to paper and pencil tests. Performance tests, individual conferences, self-evaluations, anecdotal records, and rating scales are also used to measure changes in student behavior.

Students need to evaluate themselves, according to Ahmann and Block (1,p.554). Self-evaluation involves the student and increases motivation toward further learning. Students can judge their own

progress. However, they may not be as accurate as the teacher's evaluation.

Anecdotal records are notes written by the teacher summarizing the student's major action in learning. Individual conferences are used by the teachers for evaluation devices, for improvement of teacher-student relationship, and for better acquaintance with student. The student and the teacher look at the student's progress; together arrive at the next step of instruction.

Evaluation of attitude is covered by the affective domain. Attitude scales and attitude questionnaires are effective in measuring student attitudes. Ahmann and Glock state: "The concept of attitude refers to the way individuals act and think toward and about people, objects, and situations they encounter, as a result of their previous experiences" (1,p.454). A common form of attitude scale measures each characteristic on a continuum from unfavorable to highly favorable (Thurstone and Chave, 1929) (30).

Evaluation of development of motor skills belongs in the psychomotor domain. Performance skills are usually an evaluation of the procedure and/or product while the student is in a near natural realistic situation such as in a home economics kitchen or a food laboratory.

Many educators believe that the educational goal of meeting each student's needs have not been achieved today by our educational system. However, educators also believe that this goal could be met by concentrating on the technique of individual instruction. Now, we will view the development, the administration, and the evaluation of the household equipment individual study packages.

## CHAPTER III

### METHODOLOGY

It has become palpably absurd to expect to achieve uniform results from uniform assignments made to a class of widely differing individuals. Throughout the educational world there has therefore awakened a desire to find some way of adapting schools to the differing individuals who attend them. (34,p.x).

Agreeing with this 1925 quotation from Washburne, Shear and Ray in 1969 state that the most practical method of individual instruction today is the individual study packages. The results from studies presented in the review of literature indicate that learning can be improved. Individual study packages meet individual needs, enable the faster student to reach the goals more quickly, and allow special attention for the student who needs a slower pace.

For this research individual study packages similar to the HELP formats were developed in two areas: kitchen cutting tools and kitchen ranges (11). The first and most important step, stated in all the packaged learning units reviewed, was developing the objectives of learning. The curriculum objectives from several sources influenced the writer in developing objectives for her packages. Serving as guidelines were statements accepted by the American Home Economics Association as well as curriculum objectives of the Oklahoma State University Home Economics Faculty.

The guidelines of the Committee on Philosophy and Objectives of

Home Economics by the American Home Economics Association are:

1. Educating the individual for family living.
2. Improving the services and goods used by families (20).

The purposes of the College of Home Economics at Oklahoma State University for undergraduate students are:

1. Understand themselves as individuals and work effectively toward the development of their potentials.
2. Prepare for effective roles in family living.
3. Prepare for intelligent participation in effective citizenship.
4. Prepare for professional careers concerned with the well-being of families. (8).

The departmental objectives for Home Management, Equipment, and

Family Economics pertaining to equipment are:

1. Grow in the managerial abilities essential for satisfying personal and family living.
2. Grow in judgment in deciding on the standard desired for self and family which is in harmony with one's philosophy of life.
5. Understand and apply the principles necessary for effective selection, operation, care, and arrangement of equipment in the home, and its relation to the well-being of the family.
6. Develop increasing competence as a consumer of goods and services for personal, family, and community well-being.
7. Grow in the ability to make reasoned, intelligent decisions (in order to attain personal, family and social goals).
8. Grow in the ability to use work simplification as a tool of personal and home management. (2, pp.9-10).

Another set of objectives influencing the writing of the researcher's objectives was Mager's specific behavioral objectives. Mager gives three basic steps for writing behavioral objectives:

1. Identify specifically . . . what the pupil must be able to do in order to achieve the objectives.
2. Describe the important condition . . . or restrictions placed upon pupil when he must demonstrate his competence.
3. Specify the criteria of acceptable performance by describing at least the lower limit of such performance. (17,p.99).

On the basis of these objectives, the learning objectives for the packages were developed. The general concepts were formulated as to the role of kitchen cutting tools' and kitchen ranges' in household equipment. Three lessons were designed for each package: one in the selection of the equipment, another in the care of the equipment, and a third in the actual use and the actual performance of the equipment.

The second step in the development of the packages was stating the learning experiences or learning activities for the students. The experiences for the selection and the care lessons were designed to acquaint the students with the fundamental basic knowledge of materials, construction, quality, and care of the equipment. This development of lessons was based on knowledge and facts by professionals in the appliance field and information from filmstrips developed by the appliance manufacturers.

Most basic, factual information came from textbook and additional readings. Filmstrips and taped commentaries by this researcher as well as one done by a range manufacturer were another type of learning activity for providing more factual information about kitchen cutting tools and kitchen ranges. The care and use booklets were required reading of the students before any piece of equipment could be used. These instructional booklets were written by appliance authorities so that the consumer knows how to use the equipment effectively and safely.

Learning experiences were influenced by the resources available. The household equipment laboratory has a wide variety of cutting tools and ranges. The students were to handle as much equipment as possible, not just the ones with which they were familiar. In the performance lessons, the experiences were set up for actual use of the equipment. The students performed different cutting or cooking tasks by using various kinds of equipment. Their final learning objective was to evaluate the performance with the equipment and then to choose the best item by principles of work simplification. Since the students actually used the equipment, the involvement made an effective activity. According to Dr. James Smith, designer of LAP, practical experience will produce a longer and more lasting learning experience for the student because the student actually becomes involved in the learning (28).

The third step of the package development was the creation of the evaluation devices. Since evaluation is the student's main feedback, several devices were developed for each package: pre-test, self-evaluation quizzes, performance chart, and post-test. The achievement tests measured the student's individual growth of knowledge about the subject of kitchen cutting tools or kitchen ranges. To measure the knowledge growth accurately the pre-test and the post-test were used. A pre-test was given to each student using the package. Each learning objective was tested in different degrees of difficulty. Thus, each test question represented the objectives being tested. The purpose of the pre-test was to determine the student's level of proficiency for each learning objective.

The student completed the learning package within a two week period at her own pace and her own choice of time. The student then



took the post-test. The design was identical in format to the pre-test. The same objectives and the same levels of learning were tested; however, the questions were stated differently.

The final step was the development of the quests. Quests are suggestions for further study. These quests gave the student more breadth or depth in the subject area.

The sample involved in the individual study project was forty students of junior and senior college standing who were enrolled in the first year household equipment course, HMGT 3223 at Oklahoma State University during the fall semester of 1970.

A basic experimental/control group was utilized. The experimental group was used to test the effectiveness of the learning packages. Dividing the students into two groups was done on the academic abilities of the students in each of the four sections. The grade point averages represented the academic abilities of the students. The t test was used to determine if there was a significant difference of ability between the students in Experimental Group I (students in laboratory sections 1 and 3) and Experimental Group II (students in laboratory sections 2 and 4).

The third step in the procedure was the administering of the packages. The kitchen cutting tool packages were distributed to Experimental Group I for completion in two weeks (see Appendix A).

A pre-test was given to the students using the packages. Scoring the pre-test was a joint activity by both the student and the teacher. The student's correct answers represented strong areas of cognitive learning. These learning objectives and these learning experiences could be reviewed briefly by the student. The wrong answers

represented areas that needed more work before objectives were met. If the student showed a high proficiency level (90 percent-85 percent) for a learning objective, the student could skip those learning experiences. More attention could be given to objectives in the weaker areas.

The students completed the learning packages at their own pace, but within two weeks. They then took the post-test. Scoring the post-test was done only by the teacher.

Each student in the experimental group signed up for a half-hour individual conference with this researcher who is also the laboratory teacher. At this time the student checked an attitude rating scale and answered open-end questions concerning the packages. The student also reviewed the tests and the package, and asked any questions.

While Experimental Group I used the individual learning packages for two weeks, the Control Group I performed the traditional learning activities. These students met for organized and supervised classroom lectures and laboratory sessions at scheduled hours. The Control Groups I and II also had access to the filmstrips and the reading materials in the Home Economics Learning Center.

During the following two weeks Experimental Group II (laboratory sections 2 and 4) completed the range package (see Appendix B). The same procedures were followed as described above for the cutting tool package. The Control Group II (laboratory sections 1 and 3) studied ranges for two weeks by the traditional teaching method.

To measure the effectiveness of the packages the t test was utilized to determine any significant difference on the unit achievement test and the final examination for all the students. The final examination was used to measure the retention of the subject matter by

the students using the packages compared with those students not using the individual method of learning. This final was administered one and a half months after the completion of the range package and two months after the cutting tool package. The unit test and the final examination were not developed by the researcher but by the course instructor.

A rating scale and open-end questions were developed to be used by each student (see Appendix C). Within two weeks of the package completion, personal conferences were held between the student and this researcher using the rating scale and the open-end questions as evaluation devices. The purpose of the rating scale and the conference was to ascertain the student's attitude toward the package and this method of learning.

The student rating scale was adapted from several forms from the Teachers and Learners, The Interactive Process of Education by Alfred H. Gorman (12). Each statement had a continuum from an extremely low reaction to an extremely high reaction. The student was to circle the number from one (low) to seven (high) that best described the student's feeling about the statement of the rating scale. The mean was then calculated for each statement ranking the attitude of the students on that statement.

For individual instruction to work effectively teacher-student conferences ranked high on the agenda of planned evaluations. To insure a good communication the atmosphere was relaxed with a give-and-take relationship. The conference was aimed toward building student self-evaluation, challenging the student at the student's level, and encouraging learning.

## CHAPTER IV

### ANALYSIS OF THE DATA

The hypotheses tested are of the following type:

$H_{\text{null}}$ : There is no significant difference.

$H_{\text{alternative}}$ : There is a significant difference.

All hypotheses are tested with the alpha level (probability of rejecting the null hypothesis when in fact it is true) of one percent, which means that any significant difference that is found will be highly significant.

All tests are tests of difference between two sample means. Unpaired observations were used and equal variances were assumed. The appropriate test is, therefore, a t test and has the form:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_d}$$

$$\text{where } S_d = \sqrt{S^2 \left( \frac{1}{n_1} + \frac{1}{n_2} \right)} \quad \text{and} \quad S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{(n_1 - 1) + (n_2 - 1)}$$

for  $n_1 + n_2 - 2$  degrees of freedom (26).

The following methodological tests were made to check to see if underlying assumptions were met:

1. Assuming that grade point average is an adequate proxy for ability, each individual's grade point was obtained. Two groups were chosen, one having nineteen individuals (students in laboratory

sections 1 and 3 who were Experimental Group I and Control Group II), the other having twenty-one individuals (students in laboratory sections 2 and 4 who were Control Group I and Experimental Group II). There was no significant difference between the sample grade point averages of the two groups.

2. An underlying assumption is that the variances of the two samples are equal. In no case was there a significant difference between the variances of the two samples involved; thus, the assumption holds.

The following hypotheses were tested between the control and the experimental groups:

$H_0$ : There is no difference between the average number of wrong answers attained by the control group versus the experimental group on the unit test for cutting tools.

$H_0$ : There is no difference between the average number of wrong answers attained by the control group versus the experimental group on the unit test for ranges.

$H_0$ : There is no difference between the average number of wrong answers attained by the control group versus the experimental group on the final test for cutting tools.

$H_0$ : There is no difference between the average number of wrong answers attained by the control group versus the experimental group on the final test for ranges.

Alternative hypotheses are of the form stated above. In no case was the null hypothesis rejected.

The means of the attitude rating scale was used for the responses of each statement to arrive at the student's opinion of the kitchen cutting tools and the kitchen ranges. The researcher categorized the responses as follows: 4.0 indicated a neutral rating, below 4.0 an unfavorable rating, and above a 4.0 a favorable rating (see Table I).

Within two weeks after completion of the cutting tools, an individual conference was held between the student and the researcher. The following data describes these conferences and open-end questions.

Time allotted for completion of the learning activities in the cutting tool package was discussed: (1) average time spent on the package was 4.3 hours, (2) six of the nineteen students stated they could have completed the package in less than two weeks if given the opportunity, (3) two students said they felt rushed and wanted more time to complete the package. Fourteen students spent time viewing the filmstrip in the Home Economics Learning Center. The student's own cutting tools were used for several performance activities by five students.

The majority of the students liked the package; however, four students expressed a dislike toward this type of teaching technique. Several valuable activities mentioned by the students were: viewing the filmstrip, sharpening the knives, using different cutlery and different cutting tools, and answering the self-evaluation tests. Several students stated that the actual cutting of foods with different tools was "busy work" or a useless activity.

TABLE I  
RESULTS OF THE STUDENT RATING SCALE ON ATTITUDES  
TOWARD THE LEARNING PACKAGES DEALING WITH  
KITCHEN CUTTING TOOLS AND THE  
KITCHEN RANGES

Statement	Rating Scale*	
	Mean Responses Cutting Tools	Mean Response Ranges
My general interest in unit is	5.1	4.9
Knowledge of this unit has increased	5.1	5.5
Knowledge of myself has increased	4.6	4.6
I know my fellow students better	4.5	4.7
I know my instructor better	4.4	4.4
My general participation in unit was	5.0	5.5
Teacher direction	4.5	4.5
Time spent completing the unit	4.6	5.3
My influence toward fellow students	3.9	4.1
My overall reaction to the unit is	<u>4.7</u>	<u>4.9</u>
Mean Response to All Items	4.6	4.8
*Based on continuum of 1 (lowest) to 7 (highest)	7.0	7.0

Students wanted more participation in the areas of identification of different cutlery, different grinds, and various tool constructions. Also, students desired more information on cutlery other than the basic six cutlery group and desired further use of the blender and the food center. The suggestion most frequently mentioned by the students was a group discussion where learning experiences could be shared and questions could be answered. The students also suggested the instructions be made more definite and more specific. Demonstrations on cutting tools was also proposed by a number of students.

An identical conference was held for the twenty-one students who completed the range package. Most of the students thought the two weeks was a sufficient amount of time to complete the package. More time was desired by two students for completing the package but three students stated that they could have completed the package in less time. The average time the student spent on the range packet was 6.7 hours. The Home Economics Learning Center was used by all the students except three. Seven students used their own equipment in performing some of the learning activities.

The majority of the students liked the package; however, three did not approve of the package. Valuable experiences most frequently cited by the students were: using the different range features such as the meat probe, the thermostatic controlled cooking surface, and the self-cleaning oven. Also the students enjoyed the use of utensils of different materials, the use of the microwave oven, and the use of different types of ranges. The most frequently mentioned futile activity was cooking so many pancakes. Many students wanted more participation in self-cleaning ovens and microwave ovens. Also, they desired more



information on the transfer of heat.

Many of the students suggested a question and answer hour to resolve problems and to share learning experiences. Several students suggested that to work in groups of twos or threes would be beneficial. More specific instruction for the package were also recommended.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Harold Howe, former United States Commissioner of Education, stated: "We need more individualized instruction throughout the entire educational system . . ." (13,p.841) The Division of Home Economics at Oklahoma State University is continuously seeking new ways of improving the classroom instruction. Several departments, the Clothing, Textiles, and Merchandizing Department and the Home Economics Education Department, are using different types of individualized instruction. The Home Management Department is in the process of developing individual learning experiences for the junior and senior students enrolled in the first year household equipment course, HMGT 3223. The technique designed for this individual study was self-instructional packages similar to the Home Economics Learning Packages developed at Pennsylvania State University.

Two learning packages were developed: one on kitchen cutting tools and the other on kitchen ranges. The cutting tool packages were administered to Experimental Group I for two weeks then the range packages were administered to Experimental Group II for two weeks.

A t test was calculated using the students' grade point averages, which showed no significant difference of academic ability between Experimental Group I and Experimental Group II. The t test, the mean, and the individual conferences between the student and the researcher

were used to measure the achievement of the students, the attitudes of the students, and the effectiveness of the learning packages compared to the students taught by the traditional methods.

### Conclusions

Concluding from the criteria used in the research there were no significant differences in the level of learning attained from the traditional instructor oriented laboratory and the level of learning attained from the individual study packages supplemented by individualized personal consultation.

The students' attitude toward the package as a teaching aid was favorable. All the statements on the continuum rating scale scored a mean higher than 4.0, except the statement "my influence toward fellow students" for cutting tools was a mean of 3.9. About 70 percent liked the cutting tool package and would participate in another package. The range package was favorably accepted by 86 percent of the students. The students spent more hours completing the range package (6.7 hours) than the cutting tool package (4.3 hours).

### Recommendations

Specific recommendations by the researcher for future development of individualized learning packages are:

1. Develop more packages in different areas, on different levels of difficulty with multi-dimensional learning activities, in order that a student would have the freedom to choose a specific path of learning.
2. Introduce the self-instructional packages gradually having the students check with the instructor several times, until the students

can depend on their own judgment.

3. Schedule several students together to report on the progress of the student, the findings of the student, and the discussion of any problems.

4. Improve the package directions by making them more definite and more specific.

5. Use the information from the tests to improve the learning objectives of the package.

6. Extend research on the academic achievement and the attitude of the student toward individual learning packages.

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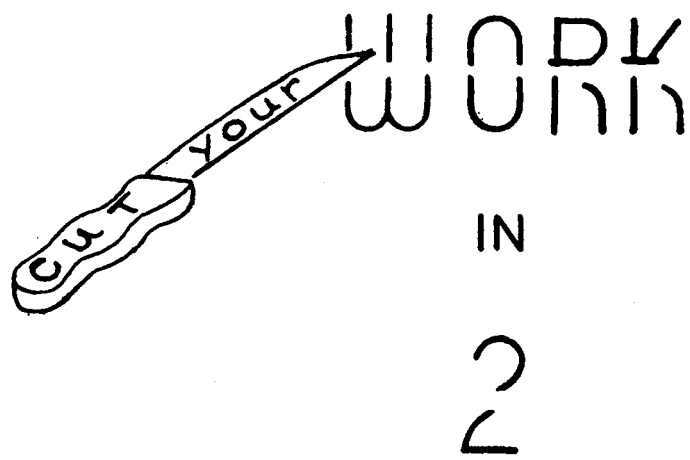
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**APPENDIX A**





**HOME ECONOMICS LEARNING PACKAGE****IDENTIFICATION PAGE**

**Title:** Cut Your Work in Two

**Subject:** Cutlery and Cutting Tools for the Kitchen

**Performance Level:** Junior and Senior College Students

**Purpose:** If the homemaker is to use less effort and time performing cutting tasks, she must choose the correct cutting tool. This unit is to help the student select a cutting tool for the given tasks which best utilizes the principles of work simplification.

**Producer:** Marilyn Collier  
Home Economics West  
Oklahoma State University  
Stillwater, Oklahoma 74074

**Date:** May, 1970

### PRE-TEST ON KITCHEN CUTTING TOOLS

#### Introduction:

Kitchen tasks can be frustrating if they are not performed using the principles of work simplification and the correct tools. With the combination of a large number of cutting tasks and tools to perform them, it is sometimes difficult to choose the right "formula". In order to succeed, you need to know the tool's capacities and limitations. The following evaluation is designed to determine your level of learning in the selection, care, and performance of kitchen cutting tools. It will also indicate how you will proceed with further study.

#### Directions:

1. Read each statement carefully. Directions for each group of questions will be stated.
2. Write the answers on this test paper. The test will not be graded. DO NOT GUESS.
3. When you are finished take the test to your instructor, so you both can grade it and decide your course of study.

Directions: For each of the following questions, select the correct answer or answers from the responses. Write your choice(s) on the blank preceding each question.

- \_\_\_ 1. Which of the following technique(s) represent(s) a knife of good construction?
 

A. Hollow grind	C. Beveled blade
B. Half tang	D. Comfortable to hold
  
- \_\_\_ 2. Which of the following material(s) is (are) durable for a knife handle?
 

A. Ebonite	C. Plastic
B. Pakkawood	D. Hardwood
  
- \_\_\_ 3. For the keenest and longest lasting cutting edge which of the following material is needed?
 

A. Stainless steel	C. High-carbon vanadium
B. High-carbon steel	D. High-carbon tungsten carbide
  
- \_\_\_ 4. The most important value of a cutting blade that will determine the cutting edge is the:
 

A. Grade of steel	C. Grind
B. Tempering	D. Forging the blade

List the different parts of the knife.

Directions: Determine whether each of the following statements is true or false. If the statement is true, circle the "T" preceding the statement: if it is false, circle the "F".

- T F 1. The knife handle should be seriously considered before purchasing.
- T F 2. The longer and wider the knife blade the longer the tang.
- T F 3. A beveled blade is found on top quality knives.
- T F 4. The electric knife is a time and labor saving device.
- T F 5. Wattage is an important factor to consider when buying a blender.
- T F 1. A honing steel will sharpen a dull knife.
- T F 2. Knives can be damaged while sharpening.
- T F 3. Knives with pakkawood can be cleaned in the dishwasher.
- T F 4. For most efficient results a blender should be operated at full capacity.
- T F 5. Always place the lid on the blender before turning on the motor.
- T F 6. Blender containers can be washed in the dishwasher.
- T F 7. A blender can be used in place of a mixer.
- T F 8. Stainless steel blades can be soaked in water since they will not rust.
- T F 9. Knives must always be washed separately.
- T F 10. A feeder cap regulates the amount of food to be shredded by an electric shredder.

List the equipment that can be used for sharpening knives.

Directions: Complete the following statements by listing the correct cleaning methods for each task.

1. Paring knife that has sliced lemons \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
2. Grater after grating cheese \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
3. Electric knife that has sliced a roast \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
4. Blender that has chopped onions \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Directions: Match the equipment that will best accomplish the cutting task using the principles of work simplification. A cutting tool may be used once, more than once, or not at all. Write your answer in the blank to the left of the cutting tasks.

CUTTING TASKS

- \_\_\_\_\_ 1. Dice 2 cups of celery
- \_\_\_\_\_ 2. Chop meat for a stew
- \_\_\_\_\_ 3. Slice turkey at Thanksgiving
- \_\_\_\_\_ 4. Remove a bone from meat
- \_\_\_\_\_ 5. Prepare condiments for hamburgers

CUTTING TOOLS

- A. paring knife
- B. slicing knife
- C. French knife
- D. butcher knife
- E. electric knife
- F. blender
- G. shredder

Why are kitchen knives used for cutting foods only?

Directions: Place an "X" in the box which best performs the given cutting task using the principles of work simplification.

TASK	PEEL	SLICE	DICE	MINCE	GRATE
Food	Potato	Tomato	Apple	Egg	Dry Cheese
Paring knife					
Utility knife					
Slicing knife					
French knife					
Waverly knife					
Electric knife					
Blender					
Food Center					
Chopper					
Shredder					
Peeler					
Cutting board					

What cutting tool would be needed to mince onion for hamburgers?

Under what conditions would you change cutting tools to mince onions? Why?

## LEARNING OBJECTIVES

No other kitchen tool is more used than a knife--or misused. An average of 32 cutting jobs are performed in the kitchen per day. The homemaker must choose from a large number of cutting tools one which will help her accomplish the job. Cutlery and other cutting tools which are well-chosen, of good quality, and well cared for will accomplish the task with little time and effort. In order to meet this goal, information is needed about quality, construction, materials, care, and design.

This packet is designed to help you become familiar with the various cutting tools and the specific jobs they are designed to perform. You are encouraged to use the equipment in the laboratory. However, if you own some cutting tools and would like to use them, check with your instructor for a workable solution.

Your instructor is always willing to discuss any section of the lessons with you.

- A. Identify the factors used for selecting cutting tools:
  - (1) when purchasing cutlery and other cutting tools and
  - (2) when selecting cutlery and other cutting tools for a specific task.
- B. Demonstrate the proper care of cutting tools:
  - (1) after using the equipment clean it correctly,
  - (2) sharpen a knife by using either the electric sharpener or an oil stone and
  - (3) realign the knife by using a sharpening-honing steel.
- C. For each given task use two different cutting tools to complete each task and state in writing:
  - (1) the tools used,
  - (2) evaluate the end product as to your satisfaction,
  - (3) evaluate your effort spent doing the task,
  - (4) evaluate the time accomplishing the task,
  - (5) evaluate the tool's performance,
  - (6) choose one tool most appropriate for each task,
  - (7) re-evaluate if the task were larger.

MATRIX SHOWING INSTRUCTIONAL OBJECTIVES FOR  
UNIT ON KITCHEN CUTTING TOOLS

Cognitive abilities involved	Selection of equipment	Proper Care of equipment	Correct Use of equipment
Knowledge	List materials and construction used in cutting tools	List the do's and don'ts for cleaning cutting tools	List cutting tools and their uses
	List criteria for cutting tools of good quality	List procedures for sharpening knives	List the correct uses for cutting tools
	State criteria for selection and quality of cutting tools in own words	State proper cleaning steps for cleaning equipment in own words	State why cutlery is used for only cutting foods
Application	Can relate factors and criteria to individual needs and make correct buying decisions	Can correctly clean equipment after use	Cut different foods using the most efficient method
		Can sharpen knives two different ways	Can relate the design of the tool to its function
Evaluate	Can evaluate each tool's performance for the cutting tasks and make choice using work simplification	Evaluate the most efficient way to sharpen cutlery	Evaluate tool's performance if the amount of food to be cut increased



## SELECTION LESSON

Purpose:

Selection of cutting tools.

Objective:

Identify the factors used for selecting cutting tools:

- (1) when purchasing cutlery and other cutting tools and
- (2) when selecting cutlery and other cutting tools for a specific task.

Learning Activities:

1. Read: Equipment in the Home, Ehrenkranz and Inman, Harper & Row, New York, 1966, pp. 74-77, 81.

Film: View filmstrip "All About Knives" (filmstrip and tape are in the Independent Learning Center).

Instruction:

The above learning activities are a few suggestions to help you meet the above objectives. However, you may not need to use all the activities or you may want to substitute other comparable activities. Use the activities which best benefit you.

Self Evaluation:

Use score sheet to complete the following evaluation. Check your own answers and if you score 90% or better, go to the next lesson. You may need to read the supplementary material listed under the Quest Opportunities: A; if your score is still below 90% or you still feel inadequate about selecting equipment. Key to test is on page ct15.

(See Page 50)

## SELF-EVALUATION ON SELECTION OF KITCHEN CUTTING EQUIPMENT

- Instructions:
1. Read each of the following statements.
  2. On the preceding blank write "true" if the statement is true. Write "false" if the statement is false and rewrite it so it is true.
  3. When you are finished check your own answers, Marking all items that are correct. The Key is at the end of the unit: page ct15.

(See Page 10)

- \_\_\_\_\_ 1. The material of a cutting blade that will keep a sharp edge the longest is high carbon steel.
- \_\_\_\_\_ 2. A waverly edge blade has a hollow grind.
- \_\_\_\_\_ 3. A good quality paring knife does not need a full tang.
- \_\_\_\_\_ 4. A hollow ground knife has the thinnest cutting edge and becomes dull quickly.
- \_\_\_\_\_ 5. Good quality knives are difficult to recognize, so the consumer must rely upon the salesman's and manufacturer's reputation.
- \_\_\_\_\_ 6. To use the least amount of effort to dice either 2 cups of celery or 2 tbsp. of onion is to use a French knife.
- \_\_\_\_\_ 7. The more speeds a blender has the more versatile it is.
- \_\_\_\_\_ 8. The storage factor is more important for a blender than for knives.
- \_\_\_\_\_ 9. Electric knives can be home-sharpened.
- \_\_\_\_\_ 10. Cutting board is an important piece of cutting equipment.

## CARE LESSON

Purpose:

Correct care procedures for kitchen cutting tools.

Objectives:

Demonstrate the proper care of cutting tools:

- (1) after using the equipment clean it correctly and
- (2) sharpen a knife by using either the electric sharpener or an oil stone and
- (3) realign the same knife by using a sharpening-honing steel.

Learning Activities:

1. Read: Equipment in the Home, Ehrenkranz and Inman, Harper & Row, New York, 1966. pp. 77-79.

Choosing and Using Home Equipment, Beveridge, Iowa State University Press, Iowa, 1966. p. 29.

Use and Care booklets for each tool used (are in the equipment Laboratory).

2. Film: View filmstrip "All About Knives" (filmstrip and tape are in the Independent Learning Center).

Instructions:

In order to meet the above objectives you will need three pieces of equipment.

Materials needed: one straight edge knife,  
an electric knife sharpener  
or  
an oil stone, and  
a sharpening-honing steel.

Method: First use the knife by slicing part of a potato.  
Clean, sharpen, and realign the knife.  
Slice the potato again and note any difference in the ease of the task.

If you have any problems or questions, ask your instructor.

Self Evaluation:

Before going on to the next lesson, complete the following evaluation. Use the score sheet to complete the evaluation. Check your own answers and if you score 90% or better, go to the next lesson. You may need to read the supplementary material listed under the Quest Opportunities: A; if your score is below 90% or you still feel inadequate about the care of equipment.

## SELF-EVALUATION ON CARE OF KITCHEN CUTTING EQUIPMENT

- Instructions:
1. Read each of the following statements carefully.
  2. On the preceding blank write "true" if the statement is true. Write "false" if the statement is false and rewrite it so it is true.
  3. When you are finished check your own answers, Marking all items that are correct. The Key is at the end of the unit: page ct16.

(See Page 51)

- \_\_\_\_\_ 1. Stainless steel cutting blades can be soaked in soapy water.
- \_\_\_\_\_ 2. Blenders are washed like a drinking glass.
- \_\_\_\_\_ 3. Cutlery should only be used for cutting foods.
- \_\_\_\_\_ 4. Since an electric knife is powered by electricity, it is versatile and can be used for cutting frozen foods.
- \_\_\_\_\_ 5. The blenders cut only small amounts of dry food at a time.
- \_\_\_\_\_ 6. Blenders are operated for only seconds.
- \_\_\_\_\_ 7. The ease of cleaning is related to the design of the tool.
- \_\_\_\_\_ 8. A blender can crush ice cubes.
- \_\_\_\_\_ 9. Dull knives are more dangerous than sharp ones.
- \_\_\_\_\_ 10. An electric knife sharpener and an oil stone will produce the same degree of sharpness.

## PERFORMANCE LESSON

Purpose:

Evaluating the performance of cutting tools.

Objective:

- (1) Using the principles of work simplification evaluate each cutting tool used for the given task.
- (2) Select the tool most appropriate for each task.

Learning Activities:

1. Read: Before you use the equipment read the Use and Care books.
2. Review: Objectives from lesson 1 and 2 may be used if needed. Equipment is to be cleaned correctly after using.

Instructions:

## Materials needed:

assortment of foods (obtain from the instructor)  
the following equipment  
cutlery: paring, utility, slicer, Cook's, waverly, electric knives  
blender  
shredders  
choppers  
peelers  
salad maker or food center  
cutting board

Fill out the enclosed chart on the Selection and Evaluation of Cutting Tools and turn in to your instructor.

Each of the following tasks are to be performed twice with two different tools: peel, slice, dice, mince, shred, and grate. Evaluate each tool as to:

- (1) the tools used,
- (2) end product - does it meet your standards?
- (3) ease of task - your work input to accomplish the task,
- (4) total time of task - include preparation time, time performing the task itself, and clean-up,
- (5) performance,
- (6) choose one tool most appropriate for each task.
- (7) If the quantity of food increased would your choice remain the same?

As soon as you have completed the packet return the packet to your instructor in order to receive credit for cutting tools.

## SELECTION AND EVALUATION OF CUTTING TOOLS

TASK	PEEL	SLICE	DICE	MINCE	SHRED	GRATE
Food Used						
1st Tool Used						
End Product						
Ease of Task						
Time of Task						
Performance						
2nd Tool Used						
End Product						
Ease of Task						
Time of Task						
Performance						
Choice of Tool						
Choice of Tool If Food Used Increased						

## KEY TO SELECTION SELF-TEST

1. **False** High-carbon steel will determine the sharpness of the blade, however, tungsten carbide will keep it sharp.
2. **True**
3. **True**
4. **False** A hollow grind edge will stay sharp, if it is not knocked against other hard materials.
5. **True**
6. **False** The French knife should be used for the celery. Unless the knife is already soiled the small amount of onion would not warrant its use.
7. **False** Research proves that 3 speed blenders are just as versatile as a 12 speed and without the added cost.
8. **False** Both are important. Knives will become dull by hitting other utensils if not stored separately. The use of the blender will be determined on how readily available it is.
9. **False** Most electric knives cannot be sharpened in the home due to its grind and the addition of tungsten carbide.
10. **True**

## KEY TO CARE SELF-TEST

1. False      The blades will not rust, but will become dull.
2. False      Most of the time blenders are self-cleaning: liquid detergent, warm water, and blend.
3. True
4. False      Very hard and dense food (frozen or fresh squash) will be impossible or difficult to cut and may burn out the motor.
5. True
6. True
7. True
8. False      Whole ice cubes should not be put in a blender, however, if it is cracked pieces of ice the blender can crush them easily.
9. True
10. False     The operator's skill will determine the sharpness. If he has experience with an oil stone a keener edge can be obtained. If he has little or no skill, an electric sharpener will do a better job for him.



## QUEST OPPORTUNITIES

The following suggestions are for further voluntary study on cutting tools.

Suggested Quest Opportunities:

A. Extended reading list.

Choosing and Using Home Equipment, Beveridge, Iowa State University Press, Iowa, 1966, pp. 36-40.

Household Equipment Principles, VanZante, Prentice-Hall, New Jersey, 1964, pp. 388-393.

Kitchen Reporter, "Project Pattern VIII Selection and Use of Kitchen Knives," Wiesendanger, (is in the Independent Learning Center).

The Cutlery Story, Bement, pp. 10-16, 18-25, (is in the Independent Learning Center).

- B. Design a bulletin board of the different cutting tools relating to their proper tasks.
- C. Write a lesson or a similar packet for high school students.
- D. Prepare a demonstration using different cutting tools for a group of "brides-to-be".
- E. Practice carving different cuts of meat.
- F. Compare Nutone-Built-In Food Preparation Center with a Ronson Foodmatic.

Consult with your instructor if you are interested in another area of study.

## POST-TEST ON KITCHEN CUTTING TOOLS

## Directions:

1. Read each statement carefully. Directions for each group of questions will be stated.
2. Write all your answers on this test paper.
3. When you are finished bring your paper to the instructor, and decide your next course of study.

## I. Matching Directions:

Match each blade description with the type of grind and construction by writing your choice or choices in the blank to the left of the description. A grind or construction may be used once, more than once, or not at all.

BLADE DESCRIPTIONS	GRINDS AND CONSTRUCTIONS
___ 1. Thinnest blade	A. "v"
___ 2. Blade thicker in middle	B. Hollow
___ 3. Sturdy blade	C. Beveled
___ 4. Concave on both sides	D. Stamped
___ 5. Permanent sharpness	E. Concave
___ 6. Hammered into shape	F. Forged
___ 7. Usually "v" grind	G. Waverly
___ 8. Gives longest service	
___ 9. Blade tapers from back to edge	
___ 10. Most expensive	

- II. List five factors that determine the quality of a knife.

III. List five materials used in making cutting blades and why they are used.

IV. True and/or False Directions:

Determine whether each of the following statements is true, false, or true under some circumstances and false under other circumstances. If the statement is true under all circumstances, circle the "T" preceding the statement; if it is false under all circumstances, circle the "F"; if it is true sometimes and false under others, circle the "TF".

- T F TF 1. Fine cutlery should never be used to cut bones, string, or paper.
- T F TF 2. Always cut food on a wooden board.
- T F TF 3. Never soak knives in soapy water.
- T F TF 4. The cutting blade cannot be damaged by heat since the steel has been tempered.
- T F TF 5. Sharpening-Honing steel will sharpen a dull knife.
- T F TF 6. Knives can be washed in the dishwasher.
- T F TF 7. An electric knife sharpener will produce a keener edge than an oil stone.
- T F TF 8. Before removing or replacing the electric knife blades, unplug the cord.

V. Describe the proper care that can be applied to all cutting tools.

VI. Problem Directions:

Directions: Read the following problem carefully. The underlined statement is assumed to be a correct answer. Following the problem are listed several statements, read them carefully. If it supports the underlined conclusion write "yes" in the blank preceding the statement. Write "no" if it does not support the underlined conclusion.

VII. PROBLEM STATEMENT:

Using a blender for the first time, Ann has made a guacamole dip by blending avacado, scallion, garlic, lemon juice, olive oil, and salt. The blender is of one piece construction. She has found it hard to remove all the dip and is not sure how she is going to clean it. Ann really need not worry. Blenders are self cleaning.

- \_\_\_\_\_ 1. Just as blending cuts up food, it will also produce a wash action and clean the container.
- \_\_\_\_\_ 2. The directions are in the use and care booklet.
- \_\_\_\_\_ 3. If the blender was of seven piece construction, it would easily come apart and washed.
- \_\_\_\_\_ 4. Soaking will damage the cutting blades.
- \_\_\_\_\_ 5. Detergent is added to warm water and then blended.
- \_\_\_\_\_ 6. Ann can ask her neighbor up the street who owns one.
- \_\_\_\_\_ 7. The blades are very sharp and can cut fingers easily, if Ann is not careful.
- \_\_\_\_\_ 8. After rinsing thoroughly, dry the blades before storing.

VIII. Compare the preparation time and the clean up time with the operation time when you used the blender. Evaluate the relationship of the three different times involved in the task.

**IX. Menu requiring the use of cutting tools:**

List the cutting tools that are needed to prepare and serve the following meal. Justify your choices.

Breaded Veal Cutlets  
Creamed Carrots & Onions      Buttered Zucchini Squash  
Apple and Raisin Salad  
French Bread  
Cherry Upsidedown Cake  
Coffee

- X. From your lab lesson identify one of the cutting tasks, the food used, the amount, the two tools used to perform the task, and your choice of tool. Justify your choice. Also justify your choice of tool if the amount of food had been increased.**

**APPENDIX B**



**HOME ECONOMICS LEARNING PACKAGE****IDENTIFICATION PAGE**

**Title:** Cooking with Ranges

**Subject:** Gas, Electric, and Electronic Ranges

**Performance Level:** Junior and Senior College Students

**Purpose:** If the homemaker is to use less effort and time performing cooking tasks, she must use the range correctly. This unit is to help students use the range which best utilizes the principles of work simplification.

**Producer:** Marilyn Collier  
Home Economics West  
Oklahoma State University  
Stillwater, Oklahoma 74074

**Date:** October, 1970



## PRE-TEST ON KITCHEN RANGES

## Introduction:

The following evaluation is designed to determine your level of learning in the selection, care, and performance of kitchen ranges. It will also indicate how you will proceed with further study.

## Directions:

1. Read each statement carefully. Directions for each group of questions will be stated.
2. Write the answers on this test paper. The test will not be graded. DO NOT GUESS
3. When you are finished take the test to your instructor so you both can grade it and decide your course of study.

## SELECTION

Directions: For each of the following questions, select the correct answer or answers from the responses. Write your choice(s) on the blank preceding each question.

- \_\_\_ 1. Which of the following choice(s) represent(s) good range construction.
 

A. Welded seams	C. Stainless steel oven liners
B. Bonderized panels	D. Rock wool insulation
  
- \_\_\_ 2. Minimum performance standards for ranges are tested by:
 

A. American Gas Association	C. Canadian Standards Association
B. Underwriters' Laboratory	D. National Electrical Manufacturers' Association
  
- \_\_\_ 3. The material used on ranges that is the most stain resistant is:
 

A. Stainless steel	C. Titanium enamel
B. Synthetic enamel	D. Porcelain enamel
  
- \_\_\_ 4. The following thermostatic control(s) is (are) not used in domestic ranges.
 

A. Hydraulic	C. Bimetallic strip
B. Resistance	D. Bellows

List the different styles of ranges.

Directions: Determine whether each of the following statements is true or false. If the statement is true, circle the "T" preceding the statement: if it is false, circle the "F".

- T F 1. Thermostatic controlled surface cooking is a time saving feature.
- T F 2. The most important factor to consider when cooking on the surface with thermostatic controls is the flatness of the utensil.
- T F 3. Gray enamel ovens produce a better baked product than shiny ovens.
- T F 4. Range handles should be seriously considered before purchasing.
- T F 5. Range manufacturers consider the pyrolytic self-cleaning ovens the most important feature on ranges.

#### CARE

- T F 1. For easy cleaning, place a piece of aluminum foil on top of the broiler pan.
- T F 2. While the oven is in the self-clean cycle, surface cooking cannot be performed.
- T F 3. The sensing element of a thermostatic unit or burner can be removed for easy cleaning.
- T F 4. The electric heating coil is self-cleaning since spilled foods are burned off the unit.
- T F 5. Acids will damage porcelain enamel.
- T F 6. When using the rotisserie splattering can be reduced by cooking with low heat.
- T F 7. Extra large utensils used on small units and burners will ruin enamel finish.
- T F 8. Electric ranges need just as much cleaning care as gas ranges.

T F 9. The time of satisfactory service of a range is directly proportional to the care it receives.

T F 10. Vinegar left inside the oven overnight will help in cleaning.

List the design features on ranges that aid in the task of cleaning.

Directions: Complete the following statements by listing the correct cleaning Methods for each task.

1. Milk on a hot range surface \_\_\_\_\_  
\_\_\_\_\_
2. Chocolate on a cold range surface \_\_\_\_\_  
\_\_\_\_\_
3. Soil on the surface thermostatic sensing device \_\_\_\_\_  
\_\_\_\_\_
4. Broiler pan after broiling steak \_\_\_\_\_  
\_\_\_\_\_

#### PERFORMANCE

Directions: Match the type of heat transfer that accomplishes the cooking tasks. A type of heat transfer may be used once, more than once, or not at all. Write your answer in the blank to the left of the cooking tasks.

COOKING TASKS	HEAT TRANSFER
___ 1. Bake cake in gas oven	A. convection
___ 2. Cook roast in electric oven	B. conduction
___ 3. Pop corn on electric unit	C. radiation
___ 4. Cook potatoes in electronic range	D. friction
___ 5. Broil steak in gas broiler	
___ 6. Fry bacon on gas burner	
___ 7. Cook chicken on rotisserie in electric oven	

How do features on ranges help the homemaker?

Directions: Place an "X" in the box which best performs the given cooking task.

TASK	FRY	ROAST	BROIL	BAKE	CLEAN
Food	Pancakes	Rib Roast	Steak	Oven Meal	Elec. Oven
Infra-red burner					
Thermostatic control					
Rotisserie					
Programed cooking					
Meat probe					
Pyrolytic					
Catolytic					
Double oven					
Electronic range					
Timer					

What range feature would be needed on your range?

Under what conditions would you change this feature? Why?

### LEARNING OBJECTIVES

Kitchen tasks can be frustrating if they are not performed using the principles of work simplification and the correct equipment. With the large number of different cooking tasks and ranges to perform them, it is sometimes difficult to choose the right "formula". In order to succeed, you need to know the range's capacities and limitations.

This packet is designed to help you become familiar with the various ranges, their features, and the specific jobs they are designed to perform. You are encouraged to use the equipment in the laboratory. However, if you have a range and would like to use it, check with your instructor for a workable solution.

Your instructor is always willing to discuss any section of the lesson with you.

A. Identify the factors used for selecting ranges:

- (1) when purchasing ranges and
- (2) when selecting features available on ranges for a specific task.

B. Demonstrate the proper care of ranges:

- (1) operate ranges correctly when using and
- (2) after using the equipment clean it correctly.

C. For each given cooking task use a gas and electric range to complete each task and state in writing:

- (1) ranges used
- (2) utensils used
- (3) evaluate the end product as to your satisfaction
- (4) evaluate the effort spent doing the task
- (5) evaluate the time accomplishing the task
- (6) evaluate the performance of the method used
- (7) choose the method most appropriate for each task
- (8) justify your choice
- (9) evaluation of special experiment

**MATRIX SHOWING INSTRUCTIONAL OBJECTIVES FOR  
UNIT ON KITCHEN RANGES**

<b>Cognitive abilities involved</b>	<b>Selection of equipment</b>	<b>Proper Care of equipment</b>	<b>Correct Use of equipment</b>
<b>Knowledge</b>	<p>List the features found on ranges</p> <p>List materials and construction used for ranges</p> <p>List criteria for quality ranges</p>	<p>List the do's and dont's for cleaning ranges</p>	<p>List type of cooking</p> <p>List the correct uses for the different types of cooking</p>
<b>Comprehension</b>	<p>State criteria for selection and quality of ranges own words</p>	<p>State proper steps in cleaning ranges in own words</p>	<p>State different ways a range can cook foods</p>
<b>Application</b>	<p>Can relate factors and criteria to individual needs and make correct buying decisions</p>	<p>Can correctly clean ranges after use</p>	<p>Successfully cook foods using all types of cooking</p> <p>Can relate the design of the range to its function</p>
<b>Evaluate</b>	<p>Evaluate features in terms of usefulness and cost</p>	<p>Evaluate design cleaning features to costs</p>	<p>Evaluate range's performance of the cooking tasks and make a choice of methods</p>

## SELECTION LESSON

Purpose:

Selection of ranges

Objectives:

Identify the factors used for selecting ranges:

- (1) when purchasing ranges and
- (2) when considering features for a specific task.

Learning Activities:

Read: Equipment in the Home, Ehrenkranz and Inman, Harper & Row, New York, 1966, pp. 167-217.

Films: View filmstrips "Introduction to the Portable Microwave Oven" and "Cookware in Kitchen Management".

View slides "The Counter That Cooks" (films and slides are in the Independent Learning Center).

Instructions:

The above learning activities are a few suggestions to help you meet the above objectives. However, you may not need to use all the activities or you may want to substitute other comparable activities. Use the activities which best benefit you.

Self Evaluation:

Use score sheet to complete the following evaluation. Check your own answers and if you score 90% or better, go to the next lesson. If your score is below 90% or you still feel inadequate about selecting equipment, you may need to read the supplementary material listed under the Quest Opportunities: A.

## SELF-EVALUATION ON SELECTION OF RANGE EQUIPMENT

- Instructions:**
1. Read each of the following statements.
  2. On the preceding blank write "T" if the statement is true. Write "F" if the statement is false and rewrite it so it is true.
  3. When you are finished check your answers, marking all items that are correct. The Key is at the end of the unit: page r18.

(See Page 75)

- \_\_\_ 1. The most stain resistant material for ranges is porcelain enamel.
- \_\_\_ 2. Programed cooking is a time saving feature.
- \_\_\_ 3. Controls for programed cooking are easy to set.
- \_\_\_ 4. Broiled meats taste better when broiled in an electric broiler.
- \_\_\_ 5. The automatic surface temperature control is the same as the oven temperature control.
- \_\_\_ 6. Family eating habits will change with the purchase of a new range with new and different features.
- \_\_\_ 7. The homemaker who does not work outside the home has no need for the programed cooking features.
- \_\_\_ 8. Sizes of ranges are becoming larger.
- \_\_\_ 9. Gas and electric oven vents are designed the same.
- \_\_\_ 10. An electronic range cannot replace the gas or electric range.



## CARE LESSON

Purpose:

Correct care procedures for kitchen ranges.

Objectives:

- (1) learn to correctly care for the various features of the range and
- (2) after using the equipment clean it correctly.

Learning Activities:

1. Read: Equipment in the Home, Ehrenkranz and Inman, Harper & Row, New York, 1966, pp. 178, 199, 215.

Choosing and Using Home Equipment, Beveridge, Iowa State University Press, Iowa, 1966. pp. 10-21.

Use and Care booklets for each range used (are in the equipment Laboratory).

Instructions:

In order to meet the above objectives you will need some cleaning equipment.

Materials needed: soft cloth  
liquid detergent  
steel wool (very fine)  
appliance wax

Method: Follow the Use and Care booklet for your range to clean:  
range surfaces  
oven walls and racks  
broiler pan

If you have any problems or questions, ask your instructor.

Self Evaluation:

Before going on to the next lesson, complete the following evaluation. Use the score sheet to complete the evaluation. Check your own answers and if you score 90% or better, go to the next lesson. If your score is below 90% or you still feel inadequate about the care of equipment, you may need to read the supplementary material listed under the Quest Opportunities: A.

## SELF-EVALUATION ON CARE OF RANGE EQUIPMENT

- Instructions:
1. Read each of the following statements.
  2. On the preceding blank write "T" if the statement is true. Write "F" if the statement is false and rewrite it so it is true.
  3. When you are finished check your answers, marking all items that are correct. The Key is at the end of the unit: page r19.

(See Page 76)

- \_\_\_ 1. Acid spills should be wiped up immediately with a damp cloth so the enamel finish will not be stained.
- \_\_\_ 2. The thermostatic surface sensing device is cleaned with a damp cloth or cleaned with fine steel wool.
- \_\_\_ 3. Self-clean ovens need extra insulation because of the extreme heat that is used.
- \_\_\_ 4. Pyrolytic self-clean ovens will reach temperatures of 800-900 degrees.
- \_\_\_ 5. Poor care of cooking utensils will adversely effect the range cooking.
- \_\_\_ 6. On thermostatic surface cooking only the temperature needs setting and the food is cooked automatically.
- \_\_\_ 7. It is very important for utensils to have a flat bottom when using thermostatic cooking surfaces.
- \_\_\_ 8. Good end results can be obtained by using any type of material in the utensil on thermostatic surfaces.
- \_\_\_ 9. Since the thermostat of the meat probe is surrounded by heavy metal, special handling is not needed.
- \_\_\_ 10. For easy cleaning, place a piece of aluminum foil in the rotisserie pan.

## PERFORMANCE LESSON

Purpose:

Evaluation of the performance of ranges.

Objectives:

- (1) Using the principles of work simplification evaluate each cooking method used for the given task.
- (2) Select the method most appropriate for each task.

Learning Activities:

1. Read: Before you use the equipment read the Use and Care booklets.
2. Review: Objectives from lesson 1 and 2 may be used if needed. Equipment is to be cleaned correctly after using.

Instructions:Materials needed:

assortment of foods (obtain from the instructor)  
the following equipment:  
aluminum skillet or range's griddle  
skillet of different material  
measuring cups and spoons  
spatula  
aluminum cooky sheet 9 x 14  
cooky sheet of different material or size  
hot pads  
paper liner for cupcake

Method:

1. When using a gas and electric regular cooking surface learn to reduce the heat accurately for maintaining a definite temperature.

Prepare an aluminum skillet by heating a little oil in it.  
For each pancake pour 2 T of batter in middle of the skillet.  
Turn when bubbles appear and cook about 30 seconds on second side.  
Remove pancake and repeat two more times.

2. When using a gas or electric thermostatic controlled cooking surface understand their functioning and know what can be expected of them.
  - A. Prepare an aluminum skillet or griddle as you did in method #1. Using the temperature recommended in the Use and Care book, cook individually 3 more pancakes.

- B. Choose a skillet other than aluminum and using the same thermostatic control cook 3 more pancakes.
3. Study the uniformity of heat distribution in the gas and electric and electronic ovens.
- A. In a gas and electric oven place a standard 8" x 14" aluminum cooky sheet with five evenly sliced sugar cookies (one cooky in each corner and one in the middle). Bake for 7 minutes at 375° F.
  - B. Repeat the above experiment with a different type cooky sheet using either a gas or electric oven.

Evaluate each method on the enclosed chart on the Selection and Evaluation of Ranges as to:

- (1) the range used,
  - (2) the utensil used,
  - (3) end product - does it meet your standards?
  - (4) ease of task - your work input to accomplish the task,
  - (5) total time of task - include preparation time, time performing the task itself, and clean-up,
  - (6) evaluate performance of the method used,
  - (7) choose the method most appropriate for each task,
  - (8) justify your choice.
4. Cook one paper cup filled with cake batter in the electronic oven for  $\frac{1}{2}$  minute and according to directions in the Use and Care book. Break open the cupcake and notice the heat pattern, taste, texture, and the texture 3-4 minutes after cooking.
5. Understand the functioning of one of the following features:
- A. Programed cooking
  - B. Rotisserie
  - C. Meat probe

Cook a hot dog following the instructions in the Use and Care book of the range you use.

D. Self-Clean oven

Mix 2 T shortening and 1 T cornstarch. Spread 1 teaspoon over oven walls and center panel of door with a damp sponge. Apply more soil at top of oven as it runs down when oven is heated. Heat oven at 450° F for 15 minutes. Soil may run down onto outer edge of oven door. Remove this soil before starting the cleaning cycle. Start automatic cleaning as directed in range Use and Care book.

Fill out the Report of Experiment sheet about the feature used.

## SELECTION AND EVALUATION OF KITCHEN RANGES

TASK	PANCAKES REGULAR SURFACE	PANCAKES THERMOSTAT SURFACE	COOKIES OVEN	COOKIES OVEN
Range Used	Gas:		Gas:	
1st Utensil Used	Aluminum	Aluminum	Regular 9" x 14"	Odd:
End Product				
Ease of Task				
Time of Task				
Performance				
Range Used	Electric:		Electric:	
2nd Utensil Used	Aluminum	Odd:	Regular 9" x 14"	
End Product				
Ease of Task				
Time of Task				
Performance				
Choice of Method				
Justify Choice				

## REPORT OF EXPERIMENT

**Feature Used** \_\_\_\_\_

**Object of the experiment:**

**What was done:**

**What was noticed:**

**Conclusions:**

### QUEST OPPORTUNITIES

The following suggestions are for further voluntary study on ranges.

#### Suggested Quest Opportunities:

A. Extended reading list.

Choosing and Using Home Equipment, Beveridge, Iowa State University Press, Iowa, 1966, pp. 79-91.

Household Equipment Principles, VanZante, Prentice-Hall, New Jersey, 1964, pp. 278-310.

Frontiers and Fundamentals, "Cooking Fundamentals" by Janice Heckroth; "Frontiers in Electronic Cooking" by Paul Crapuchettes; and "Use of the Microwave Ovens" by Norma Whaley, (are in the Independent Learning Center).

- B. Design a bulletin board of the different ranges relating features to their proper tasks.
- C. Write a lesson or a similar packet for high school students.
- D. Prepare a demonstration using one type of cooking for a group of "brides-to-be".
- E. Compare the electronic range with the electric range.

Consult with your instructor if you are interested in another area of study.

## KEY TO SELECTION SELF-TEST

1. **False** Titanium enamel with other stain-resisting ingredients is more stain-resistant than porcelain.
2. **True**
3. **True**
4. **False** Test studies show that meats tasted better when broiled in an infra-red gas burner.
5. **True**
6. **False** Habits are hard to break. A range should be purchased to meet the family's eating habits not to change them.
7. **False** Her family, outside activities, staggered meal times could warrant this feature.
8. **False** The trend is toward smaller sized ranges.
9. **False** Both are vented. However, the gas vent is larger and the outlet is on the backsplash and the electric vent is under the rear unit.
10. **True** Electronic ranges will perform 85% of all cooking tasks and some of these tasks are not performed satisfactorily.



## KEY TO CARE SELF-TEST

1. **False** Acid will damage enamel, however, a dry cloth is used when the range is warm. Temperature difference will craze the enamel. When the range is cool a damp cloth is used.
2. **True**
3. **False** The pyrolytic method uses high heat and needs added insulation. However, the catalytic method does not use extreme heat for cleaning, thus needs no extra insulation.
4. **True**
5. **True**
6. **False** A very important step needs to be performed: adjust the height of the flame or the size of the unit to fit the utensil.
7. **True**
8. **True**
9. **False** The probe has a delicate sensing device and should be handled gently to prevent damage.
10. **True**

POST-TEST ON KITCHEN RANGES

**Directions:**

1. Read each statement carefully. Direction for each group of questions will be stated.
2. Write all your answers on this test paper.
3. When you are finished bring your paper to the instructor, and decide your next course of study.

**I. Matching Directions:**

Match each range feature with the advantage by writing your choice or choices in the blank to the left of the features. An advantage may be used once, more than once, or not at all.

RANGE FEATURES	ADVANTAGES
_____ 1. Thermostatic surface	A. Best flavor
_____ 2. Removable range top	B. Easy cleaning
_____ 3. Rounded corners	C. Economy of fuel
_____ 4. Infra-red burner	D. Eliminates guesswork
_____ 5. Rotisserie	E. Convenience
_____ 6. Meat probe	F. Absentee cooking
_____ 7. Oven window	G. Self-basting
_____ 8. Range hood	
_____ 9. Delay-cook-hold	
_____ 10. Griddle	

**II. List five factors that determine the quality of a range.**

III. List five materials used in making ranges and why they are used.

IV. True and/or False Directions:

Determine whether each of the following statements is true, false, or true under some circumstances and false under other circumstances. If the statement is true under all circumstances, circle the "T" preceding the statement: if it is false under all circumstances circle the "F": if it is true sometimes and false under others, circle the "TF".

- T F TF 1. Poor care of cooking utensils will inhibit good results from thermostatic controlled surface cooking.
- T F TF 2. The intensity of heat used for cooking is proportional to the amount of time spent for cleaning.
- T F TF 3. Foil placed on oven racks can be used to help keep the oven clean.
- T F TF 4. Abrasive cleaners will not damage the range griddle.
- T F TF 5. Never soak burner heads in ammonia solution.
- T F TF 6. The porcelain enamel cannot be damaged by heat since it has been fired at temperatures of 1500° F.
- T F TF 7. Drip pans can be cleaned in the self-clean ovens.
- T F TF 8. An electric oven will produce a better sugar cookie than a gas one.

V. Describe the proper care that can be applied to all ranges.

**VI. Problem Directions:**

Read the following problem carefully. The underlined statement is assumed to be a correct answer. Following the problem are listed several statements, read them carefully. If it supports the underlined conclusion write "yes" in the blank preceding the statement. Write "no" if it does not support the underlined conclusion.

**PROBLEM STATEMENT:**

Ann is cleaning her electric self-cleaning range for the first time. She has found it quite soiled with burned sugar, starch, and grease. Ann is not sure how to clean it. She really need not worry. The range is automatically self-cleaning.

- 1. The oven will clean by a chemical change.
- 2. If the range uses the catalytic method, cleaning will take place simultaneously with normal oven use.
- 3. There is a cool down period at the end of the cleaning cycle.
- 4. After the cycle, Ann needs to wipe out the powdery ash with a damp cloth.
- 5. Ann's self-cleaning oven is more economical than other cleaning methods.
- 6. Just as heat cooks the food, it will also clean the oven.
- 7. The directions are in the use and care booklet.
- 8. Ann can ask her neighbor up the street who owns one.

**VII.** Compare the preparation time and the clean up time with the operation time when you used the thermostatic surface cooking. Evaluate the relationship of the three different times involved in the task.

VIII. Menu requiring the use of range cooking:

List the cooking methods that are needed to prepare and serve the following meal. Justify your choices.

Barbecue Chicken  
Creamed Carrots & Onions      Buttered Zucchini Squash  
Apple and Raisin Salad  
French Bread  
Cherry Upsidedown Cake  
Coffee

- IX. From your lab lesson identify the range and utensils used when baking the three batches of cookies. Then evaluate the browning between the gas and electric ranges. Was there any difference between the two? Why? Evaluate the browning between the two different cooky sheets. For a product similar to the one using the standard sheet, what adjustments would you have to make?

**APPENDIX C**

**POST UNIT SELF AND COURSE EVALUATION**

Your frank and thoughtful reactions to the unit of teaching we have just completed should be helpful in evaluating what we have done and planning for the future.

Circle the appropriate numbers. Number 1 is extremely low; and number 7 is extremely high.

My general interest in this unit is	1	2	3	4	5	6	7
My knowledge of this unit has increased	1	2	3	4	5	6	7
Knowledge of myself has increased	1	2	3	4	5	6	7
I know my fellow students better	1	2	3	4	5	6	7
I know my instructor better	1	2	3	4	5	6	7
My general participation in the unit was	1	2	3	4	5	6	7
Teacher direction was	1	2	3	4	5	6	7
Time spent completing the unit	1	2	3	4	5	6	7
My influence toward fellow students	1	2	3	4	5	6	7
My overall reaction to the unit is	1	2	3	4	5	6	7

Worthwhile experiences in the unit:

A

B

C

Non-worthwhile experiences in the unit:

A

B

C

Activities in which you wished more participation:

A

B

C

Suggestions that would make the activities more valuable.

For class to improve:

I should:

The instructor should:

## STUDENT CONFERENCE

Did you complete your laboratory work in a reasonable amount of time? Did you feel rushed?

Could the experiences gained in equipment be gained elsewhere? Explain: how?

Were the objectives of the unit met?

Were there any weak areas in the unit? Why?

What better methods could be used to overcome the weak areas?

Evaluation of post-test.

Student Name \_\_\_\_\_



VITA

Marylin Jones Collier

Candidate for the Degree of

Master of Science

Thesis: DESIGN, IMPLEMENTATION, AND EVALUATION OF SELF-LEARNING  
PACKAGES FOR KITCHEN CUTTING TOOLS AND KITCHEN RANGES

Major Field: Home Management, Equipment, and Family Economics

Biographical:

Personal Data: Born in Topeka, Kansas, June 21, 1940, the  
daughter of Mr. and Mrs. Howard W. Jones; married George A.  
Collier Jr., June 10, 1961.

Education: Received the Bachelor of Science Degree from Purdue  
University in January, 1964, with a major in Equipment and  
Family Housing.

Professional Experience: Pre-school teacher in Durant, Oklahoma,  
1966-1968; Graduate Teaching Assistant, Oklahoma State  
University, 1969-1970.

Professional Organizations: American Home Economics Association;  
Oklahoma Home Economics Association, Omicron Nu.