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## **Current Practices, Problems, and Opinions as They Relate to the Articulation of High School and College Programs of Home Economics**

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To the Graduate Council:

I am submitting herewith a dissertation written by Ruth Arkin Hackman entitled "Current Practices, Problems, and Opinions as They Relate to the Articulation of High School and College Programs of Home Economics." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Human Ecology.

Ilene Brown, Major Professor

We have read this dissertation and recommend its acceptance:

Florence MacLeod, Bernadine Meyer, Helen Starck, Elbert Henson

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

July 14, 1961

To the Graduate Council:

I am submitting herewith a thesis written by Ruth Akin Hackman entitled "Current Practices, Problems, and Opinions as They Relate to the Articulation of High School and College Programs of Home Economics." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Home Economics Education.

Helene Brown  
Major Professor

We have read this thesis and  
recommend its acceptance:

Ida Lem Starck

Florence MacLeod

Bernadine Meyer

Elbert C. Henson

Accepted for the Council:

H. E. Squire  
Dean of the Graduate School

CURRENT PRACTICES, PROBLEMS, AND OPINIONS AS THEY RELATE  
TO THE ARTICULATION OF HIGH SCHOOL AND  
COLLEGE PROGRAMS OF HOME ECONOMICS

---

A Thesis

Presented to  
the Graduate Council of  
The University of Tennessee

---

In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

---

by  
Ruth Akin Hackman  
August 1961

## ACKNOWLEDGEMENTS

The writer wishes to express her sincere appreciation to the members of her Graduate Committee, Dr. Ilene Brown, Chairman, Dr. Florence MacLeod, Dr. Bernadine Meyer, Miss Helen Starck, and Dr. Elbert C. Henson, for their assistance and cooperation in the preparation of this study. Special acknowledgement is given to the chairman, Dr. Ilene Brown, for her kindness, patience, understanding, and helpful criticisms during the period of this investigation.

Appreciation is expressed to Dr. Druzilla C. Kent and to Dr. Orin B. Graff, former members of the Graduate Committee, for their aid in the early stages of defining the problem.

Thanks are due to the administrators of college departments of home economics, the state supervisors of home economics education, and the college seniors of home economics who cooperated by completing questionnaires from which data were secured for the study.

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## CHAPTER I

### INTRODUCTION

A focal point in educational circles today is that of improved articulation between the curriculum of the secondary school and that of the college or university. This situation is evidenced by the great amount of space given to the subject in educational literature. Concern is expressed over excessive duplication in college courses of content and experiences included in high school courses. Attention is focused on more effective continuity of study at the two levels with a minimum of overlap. There is considerable activity throughout the United States as organized groups of educators are studying this problem and making recommendations for ways of bringing about improvements. Practices are being re-examined and policies re-evaluated.

The importance of taking a critical look at the home economics program in light of its policies and practices has been recognized by leaders in the field of home economics. A challenge to work toward more effective transition from one educational level to another has been made to home economics educators. A review of the literature, however, fails to reveal any organized effort by home economics personnel which is aimed at attacking this problem. Very few individual attempts to help improve the transition from high school to college for students of home economics have been reported.

#### A. STATEMENT OF THE PROBLEM

The purpose of this study was to compile information and opinions

which might help students of home economics make a smoother and more effective transition from high school to college.

To accomplish this purpose, the following questions were used as guides:

1. What are the opinions of college seniors of home economics regarding (a) the extent to which there is duplication in college home economics courses of experiences and understandings acquired before college, and (b) the value attached to duplication when it occurs?
2. What are the policies, practices, and procedures of state departments of vocational home economics education regarding provisions in high school for the college-bound student in home economics?
3. What are the policies, practices, and procedures of college departments of home economics regarding placement of home economics freshmen?
4. What are the opinions of college staffs of home economics and of state supervisory staffs of home economics education regarding (a) the need for better articulation between the two instructional levels, and (b) ways of meeting this need?
5. Is there sufficient cooperation between the high school vocational home economics programs and the programs of college departments of home economics in working toward meeting the challenge of effective progression from one educational level to another?

## B. HYPOTHESES AND ASSUMPTIONS

The hypotheses and assumptions which also gave direction to this



study are presented in this section.

### Hypotheses

1. The college student who majors in home economics comes to college with a strong pre-college background in home economics.
2. There is a tremendous amount of duplication between the high school and the college courses in home economics.
3. Insufficient steps have been taken toward the establishment of policies and practices for eliminating the duplication occurring between the college and the high school home economics programs.
4. Students enrolled in the college home economics curriculum are not provided for adequately in terms of their previous experiences in home economics.

### Assumptions

1. College seniors in home economics would be able to recall and evaluate learnings acquired before college and while in college.
2. College administrators of home economics departments and state supervisors of home economics education would be willing to take an objective look at the problem of high school-college articulation, and to report opinions and practices relating to this problem.
3. Carefully devised questionnaires would be valid instruments for the collection of the necessary data.
4. An analysis of existing conditions should indicate some possibilities worthy of consideration for bridging the recognized gap between the home economics experiences of the secondary school and those

of the college or university programs of home economics.

### C. IMPORTANCE OF THE STUDY

A criticism often aimed at programs of study is that there is a vast amount of repetition in learnings as students progress from one educational level to another. The field of home economics has not escaped this criticism. No one, at the present time, can say to what extent such a critical observation is justified. There can be no doubt that some duplication of experiences does occur between the different high school courses, between high school courses and college courses, and between the various college courses.

High school girls were asked in a study (32) to suggest how high school home economics courses could be made more valuable. Many of the girls answered that pretesting should be a part of class planning, since much repetition occurs and the overlapping makes for boredom on the part of the pupils. College students often report that duplication, which they consider wasteful of time and talent, takes place between the high school and the freshman college courses in home economics. Butler (13, p. 499) speaks of the duplication of the content in courses between the twelfth grade of high school and the freshman year in college as being the most conspicuous area of waste and repetition in the educational system.

Nelson (49), in a study which attempted to locate the reasons for college students' lack of interest in home economics and for eventual withdrawal from home economics, found one of the factors to be an

undesirable amount of repetition between high school and elementary college work. That articulation among college courses is often woefully lacking is an observation made by Fleck (31, p. 6). Assuming that these are valid observations, it is evident that there is a real need for research in this area.

This study, in which groups of students and leaders in home economics in one geographical area of the nation were surveyed regarding articulation and related problems, seemed to be justified as one attempt at answering the criticism of duplication between the high school and college home economics programs.

In home economics, instructors are confronted with students with a wide diversity of experiences and knowledge in the subject matter to be presented. Students enter college with as much as six years of home economics training in the junior and senior high schools and with as little as none at all. One aim of educators is to teach in such a way that each individual is stimulated to learn. Such wide variations in the background experiences of students make the accomplishment of such an aim very difficult. Thus it becomes imperative that schools and departments of home economics and individual teachers within each unit be concerned with each student's past experiences and present abilities.

Hall (34, p. 252) challenges those who work with college students majoring in home economics to remember that students differ not only in their ability to profit from instruction, but also in personal and background factors that may relate to their level of achievement. A dean of a school of home economics, as reported by Christopherson (15, p. 210),

deplores the practice of too little recognition by the schools of home economics of work done in high schools and in 4-H Clubs.

In Fleck's opinion, also, there is insufficient concern about what previous education in home economics a student brings to college (31). She calls attention to actual experience in homemaking as well as high school work in homemaking and experience in 4-H Clubs, all of which many college instructors do not recognize. In a national conference of college teachers of foods and nutrition (7), some time was given to a consideration of the student's background of experiences and needs. It was concluded by this group that a better job needs to be done in the evaluation of what students bring to college from high school and from other previous education and experiences. Each institution has the responsibility for identifying the ability of its students and for evaluating its program continually so that students are stimulated to measure up to their potential, according to Hall (34).

Society is concerned today, as it should be, with the wasted intellectual ability of its citizens. All branches of education are cognizant of the fact that no longer can the brain power and talent of youth be wasted on the chance of favorable conditions for college adjustment. Administrators and faculty in home economics, as in other academic fields, are aware that many college students are not utilizing their intellectual talents to their full capacity. The extent to which the failure of students to measure up to their greatest potential is a result of the boredom of repetition is not known.

Certainly no one would question the statement that excessive

overlap in the curriculum creates boredom, at whatever educational level it may occur. When this takes place at the freshman level in college, it is particularly serious. The freshman student looks forward to something new and different in the college courses. It is small wonder that a lack of interest and a minimum of effort on the part of the student result when elementary courses fail to provide the challenge needed. It can be said that duplication at this educational level is more than a waste of time; it is a positive evil that has a deadly effect on students. Double exposure to the same subject does not sharpen the image; "it may instead fog the student's mind and deaden his perception" (36, p. 61).

Home economics is continually having to prove itself worthy of academic recognition, even though it is taught in school systems throughout the length and breadth of the United States, and has an established place in nearly five hundred colleges and universities. In recent years new attacks have been leveled at the home economics field, as emphasis has been centered upon subjects of a strictly academic nature. The many challenges which home economics faces warrant the study of its present position in light of the challenges of education in general.

Many of the disciplines have recognized the need to eliminate excessive repetition and have come to grips with the problem in the form of organized activity. Such activity in the field of home economics, as reported through the educational press, is noticeably lacking. If home economics is to maintain its rightful place in the educational world, and if it is to hold the respect of the other disciplines, it cannot afford to lag behind in attacking this problem of unnecessary duplication in the field.

#### D. DEFINITION OF TERMS

The following terms are defined as used in this study:

##### Administrator

The dean of a school or college of home economics, or the head, chairman, or director of a department of home economics in a college or university.

##### Articulation

The degree to which the interlocking between training in the secondary school and that in the college facilitates the continuous and efficient educational progress of students.

##### Duplication

The repetition of content in courses offered at different educational levels. The term was used interchangeably with overlap or overlapping, and repetition.

##### F H A

Future Homemakers of America: "A national organization of junior and senior high school students who are or have been members of homemaking classes" (33, p. 243).

##### 4-H Club

Four-H Club: "A club of boys and/or girls organized under the cooperative agricultural extension work system for training in agriculture and home economics, the improvement of farm and home practices, and the

development of rural leadership" (33, p. 237).

### Home Economics

A discipline concerned with the development of understandings, skills, and attitudes essential to the improvement of the ways of living of individuals, families, and community groups.

### Homemaking Education

A program of study designed to help girls and boys, at below college level, gain some homemaking skills and understandings toward the achievement of more satisfying home living in their families today and in the future. The term was used interchangeably with home economics education, with home economics in the secondary schools, and with high school home economics.

### Placement

A process which has for its major objective the matching of an individual student and an array of particular educational experiences in such a way that the student will likely attain maximum benefit.

### Pretest

Any measuring instrument administered prior to a period of instruction.

### Problem

A significant, perplexing, and challenging situation which requires reflective thinking and action for its solution.

### Supervisor

The state supervisor, or the director of homemaking education (or home economics education) in the State Department of Education.

### Vocational Home Economics

A program of education for homemaking which meets the requirements of a state plan for vocational education for reimbursement from federal funds for vocational education.

## E. LIMITATIONS OF THE STUDY

This study was confined to twelve states in the Southern Region of the United States<sup>a</sup> and to Puerto Rico. Three groups of people within this region were selected to participate, namely:

Group I. The home economics administrators of the predominantly white colleges and universities approved to train teachers for vocational home economics.

Group II. The state supervisors of home economics education.

Group III. College seniors in home economics from selected colleges in Virginia, and from the University of Tennessee, all of which are approved to train teachers for vocational home economics. The study of the major part of the data from this group was limited to those students who had had a minimum of two years of high school home economics.

The data from the college seniors of home economics were related

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<sup>a</sup>The twelve states are Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.



particularly to the area of foods and nutrition.

#### F. PROCEDURE

This investigation dealt with some of the factors which affect the efficiency of transition from high school to college for home economics students. The three groups of individuals who participated were chosen as being representative of those who are vitally concerned with this problem. It was felt that the information and opinions gathered from administrators, supervisors, and college seniors of home economics would present an over-all picture of conditions in the area to be studied. It was believed that: (a) data obtained from the administrators would reflect the policies and practices of their faculty; (b) data obtained from the supervisors would reflect the policies and practices of their supervisory staff and, indirectly, those of the high school teachers; (c) data obtained from college seniors would reflect more mature and reflective judgment than might be obtained from students at a lower educational level; and (d) data obtained from seniors of colleges in two states would be indicative of that which would be obtained from other states in the Southern Region.

A letter explaining the nature of this study and asking for cooperation was sent in November, 1960, to the administrators of the colleges in Tennessee and Virginia which had been selected as a source of student data (see Appendix A, page 154). In this group were four predominantly white teacher education institutions in Virginia and the University of Tennessee. Positive replies were received from the

University of Tennessee and three of the colleges in Virginia. The administrator of the fourth Virginia college expressed regret that she could not participate because of staff shortage. The colleges participating in furnishing student data, then, were Virginia Polytechnic Institute-Radford College, Madison College and Longwood College in Virginia, and the University of Tennessee. The administrators agreed to cooperate in four ways: (a) by granting permission for their seniors to fill in a questionnaire; (b) by administering the questionnaire at their convenience; (c) by returning the completed questionnaire to the investigator; and (d) by filling in a brief questionnaire which deals with the problems of articulation, as the administrator sees them.

#### Development of Materials Used in the Investigation

Data used in this study were collected by means of the questionnaire technique. Although the questionnaire does have certain limitations, it is undoubtedly the most frequently used of all observational techniques, having obvious advantages over other methods in economy of time, money, and effort. In the present study it would not have been feasible for the investigator to have obtained the information by any other method, since respondents were living in twelve states and in Puerto Rico.

Three questionnaires for the collection of data were developed during the fall of 1960, after a review of current literature. It was discovered from this review that there were many recognized problems related to this study. The questionnaires were designed so as to obtain the kind of opinions and information which, when compiled and analyzed,

might be of value in attempting to resolve some of these problems.

As preparation for the construction of the student questionnaire, college textbooks for introductory foods and nutrition courses, and high school home economics textbooks and state guides for homemaking education programs in the high schools were reviewed. Particular attention was given to the guides for the states of Tennessee and Virginia, since the questionnaire was to be submitted to students in those states. The investigator's experience as a college teacher of foods and nutrition and as a participant in regional and national conferences of college teachers of foods and nutrition was also of value in determining the items to be included in the questionnaire.

The questionnaire for students was constructed as a combined opinionnaire and checklist for factual information. It was designed to obtain information and opinions as to: (a) the value of high school experience to work in college home economics, (b) the extent to which there is duplication in college courses in foods and nutrition of experiences and understandings acquired earlier, and (c) the degree to which such duplication, if present, is advantageous to the student or is wasteful of time and talent. A copy of the questionnaire appears in Appendix B.

Shorter questionnaires were prepared for the administrators of college home economics departments and for the state supervisors of homemaking education (see Appendix B, pp. 160 and 167). Each of these questionnaires was constructed in two parts to obtain (a) opinions and (b) information as to current practices. Some of the questions on each could be answered by means of checking items which had been listed, while

other questions were of the open-end type.

The information sought from the administrators and supervisors by means of these questionnaires was related to: (a) opinions as to the amount and nature of wasteful duplication which occurs between high school and college home economics courses, (b) opinions as to the kind of high school experience that best prepares the student for college home economics, (c) practices of the high schools toward the college-bound home economics student, (d) practices of the colleges toward placement of the freshman student in home economics, (e) attitudes as to the feeling of satisfaction with present practices in both high schools and colleges, and (f) opinions as to the desirability and means of improving articulation between high school and college home economics programs.

#### Pretesting of the Questionnaires

Tentative forms of the questionnaires were presented to the investigator's faculty advisory committee in November, 1960, after which revisions were made. In January, 1961, the revised questionnaires were tested. The student questionnaire was administered to twenty home economics seniors in an approved teacher education institution in Arkansas. Through results of this pilot study, a lack of clarity in the directions was revealed, making further revisions necessary. The average time reported for completion of the questionnaire was thirty minutes.

The questionnaire for administrators was tested by two retired deans of home economics; that for supervisors was submitted to an assistant state supervisor and to two area supervisors of homemaking

education. Minor revisions in the wording and in the spacing of items in the questions were made in these two instruments.

### Collection of Data

Copies of the student questionnaire, after final revisions, were mailed to the administrators of the participating colleges in Virginia in February, 1961. A large manila envelope, self-addressed and stamped, was enclosed for the return of the questionnaires. A letter expressing appreciation for participation in the study and giving instructions for the administration of the questionnaire was mailed under separate cover. The questionnaires for the administrators and the supervisors, with a stamped, self-addressed envelope, were mailed at the same time. A letter explaining the nature and purpose of the study and asking for the co-operation of each participant was enclosed with each questionnaire. Copies of the letters may be found in Appendix A, pp. 155 and 156.

The student questionnaire was administered by the investigator to the home economics seniors at the University of Tennessee in February and March, 1961.

Approximately three weeks after the mailing of the questionnaires, follow-up letters were sent to those supervisors and administrators who had not responded (see Appendix A, p. 157). A summary of the questionnaires sent and returned follows:

	Number sent	Number returned	Per cent returned
Supervisors	13	13	100
Administrators	60	49	81.7
Students	161	157	97.5

For various reasons, it was necessary to delete some of the returned questionnaires. Three administrators returned blank questionnaires, indicating that the department of home economics in the college in question failed to meet the criteria as set forth for this study. Of the 157 student questionnaires returned, forty-three could not be used for that part of the study which dealt with duplication since those students had not had as much as two years of high school home economics. One student questionnaire was incomplete. The usable questionnaires were: supervisors, 13; administrators, 46; and students, 113.

#### Organization of the Study

Chapter I is organized so as to give the reader an understanding of: (a) the problem and its importance, (b) the purpose of the study, (c) the hypotheses to be tested and the assumptions made, (d) the sources of data to be used, and (e) the procedure to be followed in carrying out the study.

Chapter II is a review of the literature dealing with articulation as it relates to the curriculum. Studies related to this investigation are included in the review.

The analyses of the data are presented as follows:

Chapter III is an analysis of the data obtained from college home economics seniors as it relates to (a) the home economics experiences of the students before entering college, (b) the duplication of subject matter in high school and college home economics courses, and (c) the value to the student of the duplication which occurs.

An analysis of opinions and practices relating to the provisions

in high school for the college-bound student in home economics, and of the provisions for placement of the student in college is presented in Chapter IV.

A discussion of the opinions regarding improved articulation between high school and college home economics curricula, as shown by the analysis of data, is included in Chapter V. A summary of effort being exerted toward meeting this need is given.

Chapter VI includes a summary of the findings and the major conclusions of the study.

## CHAPTER II

### REVIEW OF LITERATURE

Many educators have written papers and articles for professional journals which deal with articulation in general, and with certain phases of articulation as applied to education. Studies have been conducted and reported which deal directly or indirectly with this subject. Certain findings in the literature which are pertinent to this study will be reviewed in this chapter. The following topics will be examined: Clarification of the term "articulation," recognition of the problem of inarticulation and reasons for its existence, suggestions for dealing with the problem, attempted solutions to the problem by disciplines other than home economics, and attempted solutions to the problem by home economics.

#### A. CLARIFICATION OF THE TERM "ARTICULATION"

The term "articulation" has usually been defined in the literature of professional education in terms of the relationship of the various organizational parts of the education program and the facility with which transition occurs among these parts (59, p. 70). Discussions were found of articulation (a) of curriculum offerings with extracurricular activities; (b) of the instructional program with the guidance program; (c) of the school's program with the educational programs of other community institutions and agencies; and (d) of articulation of the various levels of the educational system with one another (5, p. 4).



The last-mentioned concept of articulation is the one most frequently used and the one which is reviewed here. Specifically, this review is concerned with articulation in curriculum between the secondary school and the college. When one speaks of articulation between school and college, he means a "close fit" between the student's school program and his college program. "Ideally there will be no gulfs that cannot be leaped, no mountains that must be climbed again and again for the same view." (27, p. 110)

#### B. RECOGNITION OF THE PROBLEM OF INARTICULATION AND REASONS FOR ITS EXISTENCE

Articulation is considered a problem when the student is faced with barriers and difficulties in his transition from the lower to the next higher level of education (45, p. 51). Educators have recognized this problem and have expressed concern as to its cause and possible solution over a period of years. It has been the subject of some few investigations.

Among the first of the investigations was that of Koos (40). His purpose was to try to determine the amount of overlapping of subject matter at the high school and college levels. Koos employed the method of textbook analysis supplemented by analyses of syllabi and courses of study. Offerings of twenty-six high schools in six north central states and forty-one higher institutions scattered over eleven states in the north central region were examined. It was concluded from the comparisons made that: (a) the courses in chemistry at the high school and first-year

college level were much alike; (b) in economics, English, literature, English composition, elementary French, algebra, and American history, the situation was almost equally as striking with respect to the nature and the amount of overlapping; and (c) high schools and colleges were doing very little to avoid teaching the same material.

Mills (47) reported on a study conducted by W. J. Osburn. The technique used was similar to that employed by Koos but considered more accurate in that, instead of analyzing high school and college courses of study for the same year, Osburn investigated the courses actually taken by each student as a high school student and as a freshman in college. In this way the overlapping in the case of each student included in the investigation was studied. Osburn's conclusions confirmed in all respects those of Koos (40).

In 1929, Vaughan (65) attempted to discover some of the causes of the lack of articulation between the English offered in the senior year of high school and that offered in the freshman year of college. He cited the complaints voiced in educational literature for several decades as evidence of the lack of articulation in the English offerings, aims, and procedures at the two levels. Data were gathered from a variety of sources, including twenty-one Southern college catalogs, high school English courses of study of the State Department of ten Southern states, questionnaires submitted by the twenty-one colleges and sixty-six accredited Southern high schools, correspondence with the heads of departments or chairmen of freshman college English in the Southern colleges, and surveys of work being done in English in the high schools and colleges of the Southern states.

Vaughan concluded that articulation between the fourth-year high school English and college English, as affecting a group of Southern institutions, was slight. He further concluded that little effort was being made to bring the high school and college teachers together in an effort to smooth out the chaotic problems of articulation.

Mills (46, p. 216) called attention to the recognition of the problem of inarticulation between high school and college during the decade prior to 1934, as shown by (a) reports of numerous studies designed to eliminate some of the more obvious inarticulations, and (b) the adoption of this topic as the subject for the 1929 yearbook published by the Department of Superintendence of the National Education Association. The same problem engaged the attention of that body during 1928 and 1931. The great majority of the studies referred to by Mills had been directed toward phases of the problem other than that of duplication of course content. Mills deplored this situation, stating that the study of these other problems had not led to the elimination of that duplication. He concluded, as did Vaughan (65), that little in the nature of a direct attack on this problem had been undertaken.

The investigation carried out by Budd (11), reported in 1956, was an attempt to determine the status of high-school college cooperation in Kansas. Specifically, Budd sought to find answers to the following questions:

What cooperative efforts have been made in Kansas to improve high school-college relations?

What agencies have attempted to promote cooperation between high school and college?

Is there a need for more high school-college cooperation than exists at present?

What problems of cooperation are currently most pressing?

What groups should be represented in an organization whose main purpose is improvement of high school-college relations?

Data were obtained in several ways--by reviewing the official minutes of agencies which had attempted to improve high school-college relations in Kansas, by correspondence with educational leaders in the state, by personal contact with school personnel during several conferences, and by means of a questionnaire. Three hundred four persons responded to the questionnaire. High school respondents included principals, counselors, and teachers; college respondents included registrars, counselors, and teachers. The respondents expressed the belief that the important problems of high school-college cooperation are broad questions affecting both levels of education. The problem of coordinating the curriculum was one of the three problems most frequently listed.

Within the decade prior to the present study, there have been many statements in educational literature which indicate general recognition of the problem created by duplication of subject matter at the different educational levels. Simpson (58, p. 35) suggested that repetition of subject matter is to be avoided. Conant (19, p. 33) recognized the lack of articulation in subject matter to be a serious problem in many school systems. Hochman (36, p. 61) expressed the belief that the lack of the proper relationship between what is taught in high school and what is taught in college may be one of the greatest areas of waste in the American education system. An observation made by Grobman (28, p. 93) in relation to school-college articulation in biology was that the high school and collegiate curricula have developed in "isolated

proximity." He reported that introductory collegiate biology courses do not build on high school courses.

The problem of school-college articulation in matters of curricula took on a tone of urgency in the writings of Kraushaar (42, p. 27) and Poppendieck (55, p. 6). The necessity to narrow the gaps in curriculum so that competent students can move ahead without failure and defeat, and to eliminate overlap in the curriculum to prevent boredom was given emphasis by Poppendieck. Kraushaar stated a conviction that less and less of the overlapping and faulty articulation that was tolerated in the past will be so tolerated in the future. Both of these educators believed that corrections in the matter of articulation can be made only by joint study and action of schools and colleges.

Those who are concerned with this problem have sought to establish a rationale for its existence. Many theories have been expressed which, in the last analysis, are all closely related. Mills (46, p. 213) mentioned the tendency of colleges to decry the preparation which students have received in high schools. Dearing (23, p. 77) suggested, as a first step in improving articulation, the abandonment of the idea that students reach college so nearly illiterate that it is necessary to start at the beginning. The failure of the college to apprise itself of the material covered in high school courses and the all-too-common disregard of what the student has compassed in his high school training were cited as causes of duplication by several educators. It was suggested that high schools are also responsible in part for the existence of overlapping of subject matter, in that they fail, in many instances, to differentiate

between those who are going to college and those who are not (46).

Watson (67, p. 152) referred to the gulf that separates high school and college teachers. He stated that there is little real understanding and often no communication at all between the two groups, that each group goes about its work ignorant of, or indifferent to, the problems or the aims of the other.

The proceedings of a conference of school and college officials of the North Central Association in 1960, were summarized by Fisher (30, p. 12). The feelings expressed by the secondary school officials in relation to the problems of articulation were that: (a) higher institutions, in cooperation with secondary schools, have not clearly defined the nature of the competencies required for smooth transition from high school to college; (b) many higher institutions of learning do not attempt to make effective use of available data in cumulative records of high school college-bound graduates; and (c) many higher institutions appear to be aloof to common problems of school-college relationships. College officials were reported to feel that the problems surrounding articulation of school-college courses are due to the lack of cooperative effort on the part of the institutions at both levels (30).

A theory expressed by Cook (20, p. 167) was that increased college enrollments and the more heterogeneous background of today's college students result in making articulation between the secondary school and the college a more serious problem and a greater challenge to the institutions at both the high school and college levels.

### C. SUGGESTIONS FOR DEALING WITH THE PROBLEM

Problem identification is logically followed by suggestions for possible solutions to the problem. A review of the literature revealed a wide variety of points of view among educators regarding ways and means of improving school-college articulation.

The importance of the proper attitude toward the problem received emphasis. Medsker (44, p. 121) stated his conviction that unless the parties involved believe it is necessary to remove the obstacles in students' paths and unless they come to want to do something about it, obviously there will be no workable process. The opinion of another educator was that the problem must be stripped of emotionalism and prejudices and viewed rationally (28).

One point of view upon which there appeared to be general agreement concerned the value of closer cooperation between schools and colleges. Traxler (62, p. 28) expressed regret that even though the high school preparing the candidate and the college to which he applies are located close together, there is still a great deal of misunderstanding between the two institutions. It was suggested that the proximity of the institutions could be a great aid if full advantage were taken of the opportunity to practice the old American art of neighborliness. An expression of a necessary approach to the solution of the problem was that high school and college people work together, with mutual respect and understanding, in defining their respective roles and responsibilities (28). Poppendieck (55) asserted that corrections in the gaps and overlap in the curriculum cannot be made by teachers on one side of the

transition alone. Each must know and understand the other's efforts, values, and standards.

Hochman (36) declared that colleges and high schools can solve the problem of wasteful duplication by looking for solutions together in regular meetings over a period of time. Two ways in which this might be done were suggested: (a) a planned series of meetings during the school year between neighboring high school and college faculty members in the various subject-matter fields, in which common problems like the apparent duplication in high school and introductory college courses could be discussed; and (b) a series of summer seminars for high school teachers which would provide the chance for systematic discussion of the whole issue of the relationship between high school and college teaching. The responsibility for taking the initiative in arranging for periodic conferences between college and high school teachers and administrators was placed on the colleges by the participants at the Fortieth Annual Meeting of the American Council on Education (25, p. 113).

The following additional suggestions for dealing with the problem of inarticulation were expressed by various educators: (a) both school and college teachers should undertake a revision of the curriculum in the various subject areas for the purpose of avoiding duplication or gaps (25); (b) institutions at the different levels should decide what are the essentials of the education for which they are dividing the responsibility (50, p. 196); (c) college faculties should abandon the tendency to think that students remember little or nothing they have been taught in high school, and try to build on high school work to a greater



extent instead of repeating it (36, p. 62); and (d) high schools and colleges should prepare and follow descriptive statements of subject content and instructional procedures in the courses which are required at both levels (20, p. 168). Hochman (36) and Dearing (23) suggested that colleges grant advanced standing to high school graduates who have demonstrated their knowledge in a given field.

The emphasis of those offering suggestions for solving the problem is on the cooperation of schools and colleges. Certainly there are many ways in which the institutions at the two levels can cooperate in order to prevent higher education from overlapping secondary education in matters of curricula. Poppendieck (55) indicated that cooperation does not insure fewer problems, but that cooperative action and mutual understanding can improve the prospect of finding solutions.

#### D. ATTEMPTED SOLUTIONS TO THE PROBLEM BY DISCIPLINES

##### OTHER THAN HOME ECONOMICS

The picture that one gets from a review of the literature on articulation is one of considerable activity. According to the data furnished by Steinberg (60, p. 363) in April, 1959, thirty-one of the then forty-eight states of the United States either had organized articulation programs or in some other way had accomplished significant work in school-college articulation. In three other states, the entire area of school-college articulation and organizations for its improvement were under study. Kraushaar (42) reported that a number of colleges and universities had held or were planning to hold school and college

conferences for the purpose of exploring ways and means of improving the articulation of school and college studies. Poppendieck (55), in 1960, revealed that individual staff members at the high school and college levels were making personal contacts with their counterpart at the other level in encouraging numbers. The meetings, publications, and programs of action of professional associations were cited as evidence that educators are disposed to do something about the problems of articulation.

A plan worked out at the Nanuet, New York, public schools was related by Cooke (21, p. 48). The plan evolved from the realization that effective education in the elementary school, the secondary school, and the college demands planned articulation from one level to the next, and that the burden of this planning falls to the secondary schools. Workshops and half-day staff conferences were the techniques used during the two years of operation of the Nanuet plan. Administrators, pupil-personnel directors, and teachers united to see where the current educational planning was to go next and what pupil needs were not being met at that time.

Reports of a number of conferences addressed to the study of articulation in special subject matter areas were found in the literature. Watson (67, p. 153) reported in March, 1958, on a workshop held at Louisiana State University in cooperation with the State Department of Education in Louisiana. The purpose of the conference, attended by high school English teachers, principals and supervisors, and college teachers of English, was to attempt to improve articulation between high school and college programs in English. One outgrowth of the workshop was an informal visitation program that enabled college English teachers to visit English classrooms in

five different Louisiana high schools. This action resulted from the admission by college teachers that they had no idea of what was going on in a typical high school English class.

Goucher College (55) was host in January, 1958, to a conference dealing with the teaching of English composition and literature. Fifty-six public and private schools in the Baltimore area and the District of Columbia, and twenty-seven colleges and universities in that area were represented. It was stated that this gathering of college and secondary school faculties was the first in a series designed to promote articulation between schools and colleges. The conferences to follow were to deal with the teaching of various subjects required in institutions at both levels.

A somewhat different approach to this problem has been undertaken at Lawrence College, as reported by Thompson (61). The college mails a letter in the spring or summer to all school seniors accepted or provisionally accepted for the next year's freshman class. This letter makes clear the level of attainment in writing which the college expects of freshmen, and gives the prospective freshman a chance to do something about English before he comes to the campus. It is felt that this plan serves as a means of acquainting parents, principals of schools, and teachers of English, as well as the incoming freshmen, with the college standards. The college hopes thus to assist and encourage high school teachers in preparing pupils for college English.

A survey conducted by the Research Committee of the Foreign Language Association of Northern California was reported by Shadi (57) in 1957. The purpose of the study was to determine the seriousness of

the problem of articulation between high school and college foreign language courses. Information was gathered through questionnaires and interviews from the heads of foreign language departments of the public high schools and the four-year colleges and universities of Northern California. Questions concerned placement, course content, objectives, and methods. It was believed that the response was sufficient to give a reliable cross section of practices and policies in the northern part of the state. The questions regarding placement revealed that five of the colleges require the freshmen to take a placement examination before being assigned to a class in a foreign language. Sixteen colleges stated that placement of freshmen was determined by high school credit, though six of the sixteen offer the examination as an alternate. The conclusions drawn from the study suggested possibilities of specific improvements in the system in use at the time. It was felt that the many problems which came to light through the survey could be dealt with, and that better articulation between high school and college foreign language courses could be achieved.

Kraushaar (42) told of a conference on "The Education of Chemists" which was convened by Johns Hopkins University, in 1958, under the sponsorship of the National Science Foundation. High school science teachers and administrators, and college science faculty from sixteen different Middle Atlantic, New England, and Southern states were brought together. The purpose of the conference was to discuss the aims of secondary school and college chemistry courses, and how these aims relate to the common objective of courses intended for professional training and as part of general education. A visiting college science professor made this

illuminating comment on the conference: "The ignorance of many college professors about the problems of secondary school science teaching disturbed me again as it has in the past, and I hope that some missionary work was accomplished at this conference." (42)

The broad-scale efforts directed toward the improvement of the secondary school science and mathematics programs are believed to constitute the most likely source of improving continuity between high school and college in those fields, as stated by Finlay (28, p. 92). Among such efforts mentioned were the School Mathematics Study Group, the Biological Sciences Curriculum Study, The University of Illinois Committee on School Mathematics, the Chemical Bond Approach Committee, and the Physical Science Study Committee. These groups, although they differ somewhat in objectives, were said to have several common characteristics. Among the characteristics mentioned were: (a) each group is engaged in defining and producing teaching materials to be used directly by students; and (b) each has directly involved both university and secondary school teachers. The institute programs that have been held in connection with the Physical Science Study Committee's course in high school physics have brought together over a thousand high school physics teachers and about a hundred college physics teachers for periods ranging from full time for six to eight weeks, to once a week for a year or more.

The work of the Commission on Mathematics, a commission of the College Entrance Examination Board, was described by Kraushaar (41, p. 4). The objectives of the Commission were: (a) to investigate the subject of the teaching of mathematics in the last two years of high school and

the first two years of college; (b) to propose, in due time, an entirely new curriculum in the teaching of mathematics, particularly in the schools; (c) to provide new textbooks for the teaching of the subject in this new way; and (d) to provide appropriate tests to certify the student's knowledge in the field.

Many educators have expressed the opinion that the Advanced Placement Program of the College Entrance Examination Board is one of the most promising approaches to the problem of articulation between high school and college. The Advanced Placement Program is a flexible plan provided especially for capable and ambitious students in secondary schools. Extensive and intensive work of high quality by students, under careful guidance of teachers at the secondary schools, entitles them to take college-level examinations under the supervision of the College Entrance Examination Board. Success in these examinations may result in college credit or advanced standing when the students enter college. The number of schools and colleges which are participating in this program has increased immeasurably since the first conference under Advanced Placement Program auspices was held in June, 1954 (38, pp. 6-7). Dudley (24) presented the following figures which show the growing interest of the institutions at both levels in the program:

In May, 1957, there were 2,000 students who took 3,700 Advanced Placement examinations. A year later, 3,700 students took 6,900 examinations. In the spring of 1958, a survey of 360 colleges indicated 150 colleges granting appropriate placement to students who had taken Advanced Placement courses and who had performed creditably on the College Board's Advanced Placement examinations. Of the 360 colleges, 210 gave academic credit as well as placement.

Parker (52, p. 349) reported that 10,500 students from 890 high

schools took 14,300 advanced standing college subject examinations in 1960. The rapid rise in the number of students who are availing themselves of the opportunity afforded by the Advanced Placement Program is an indication of the popularity of this method of placement among gifted students.

Various plans for implementing the Advanced Placement Program in secondary schools were reported. Bernstein (8, p. 22) described the plan in use at Midwood High School in Brooklyn, New York. Before students enter the high school, the personnel in charge of articulation evaluates the records in the feeding schools, visits the schools, and interviews pupils, parents, and teachers. The exceptionally bright pupils are thus identified and can begin in the tenth grade the three-year program planned for them. In the senior year these students are ready for college-level work. A similar plan was reported (26, p. 32) for Senn High School in Chicago, whereby capable students earn credit in a special history class during the senior year of high school.

Burnside (12, p. 28) has pointed out that the instruction in Advanced Placement courses at Monroe High School, Rochester, New York, has been entirely tutorial guidance of students studying independently. More advanced texts and source materials are used. Whipple (69, p. 26) reported on the steps being taken at Memorial High School in Pelham, New York. Individual teachers direct special study in the different fields in order to prepare students for Advanced Placement in college. The educational fields mentioned were English, French, and social studies. Rock Island Senior High School, Rock Island, Illinois, has introduced classes for Advanced Placement in English, history, and chemistry,

according to Austin (6, p. 54).

As a result of freshman placement tests in English and mathematics at Ohio State University in the fall of 1957, thirteen per cent of the students received a proficiency rating and were assigned to a third-level English course; 1.8 per cent received proficiency rating in mathematics and were placed in a third-level course, while other students were placed in second-quarter courses (54, p. 118). Great importance was attached to the fact that so many students were placed in advanced courses and received proficiency credit. The great saving of time both for the staff and the students, and the greater potential achievement on the part of the students were pointed out. Since 1954, three colleges in Atlanta, Georgia, have successfully integrated their freshman year with the last two years of cooperating high schools (52).

It has been shown in this section that there are many groups and many individuals concerned about improving the articulation of school and college studies. Various methods for reaching this objective have been reviewed. The general attitude of educational leaders appears to be that although some steps have been taken toward solving this problem, more needs to be done and needs to be done now.

#### E. ATTEMPTED SOLUTIONS TO THE PROBLEM BY HOME ECONOMICS

In spite of the fact that during the past few decades educational literature has contained many reports of studies and cooperative action by various disciplines toward improved high school-college articulation, no study in the field of home economics could be located which dealt



directly with this problem. A review of literature indicates that two approaches have been followed by home economics researchers as a means of investigating the relationship that exists between school and college home economics curricula. In both cases the approach was a unilateral one, carried out at the college level. Neither approach could be said to be in the nature of a direct attack on the central problem. Both, however, indicate that the investigators believed that previous experiences of students may need to be reckoned with in planning the college program of the individual student.

One approach dealt with the relationship between achievement in high school homemaking and achievement in college home economics in general, or in specific areas of home economics. Several such studies were found.

Allen (1), in a study reported in 1935, made a comparison of students who had home economics in high school with those who did not have high school home economics. The records of 210 graduates were studied. It was found that a somewhat higher grade average was made in college home economics by those students who had home economics in high school. The investigator recommended that students who major in home economics in college elect home economics in high school. It was recommended, also, that separate sections of home economics in college be provided for those who had home economics in high school and those who did not.

A study designed to identify the effect of a student's previous experience in clothing on achievement in a college clothing course was

reported by Wright (71). Data were obtained from each student through questionnaires and personal interviews with respect to the amount and kind of previous experience the student had received. From these data each student was placed in one of the following groups: (a) experience in all fields of clothing (junior high school, senior high school, 4-H Club, and home experience); (b) no 4-H Club work; (c) no high school work; (d) neither high school nor 4-H Club experience; and (e) no previous experience. Careful evaluation was made of each individual student during and at the close of the first course in college clothing. From the evidence she obtained, Wright concluded that previous experience in clothing construction is a factor of achievement in the freshman clothing construction laboratory at the college level, and that the amount rather than the type of previous experience in clothing construction has a definite effect on the attitudes and achievement of the students.

Cannon (14), in a similar study, attempted to determine the influence of high school homemaking on achievement in the beginning clothing course at the University of Colorado. It was concluded that not only is high school homemaking a factor in achievement in college clothing, but that there appears to be a definite relationship between the amount of high school homemaking and achievement in college clothing.

A second approach has been in the nature of an attempt to find out, through the use of testing instruments, the level of proficiency of the student entering college for the first time. Theoretically, then, the student would be placed in courses geared to his capability. Army expressed approval of this plan in the following statement, published

in 1953:

Try to visualize what would happen if all colleges permitted students to start where their level of proficiency indicated they could do successful work; allowed credit for each course from which they were exempted; and urged superior students to begin graduate work when they had met undergraduate requirements, so that they would be well on their way toward a Master's degree at the end of four years. Even if students were not given credit for the courses from which they were exempted, they could either obtain a broader education during their sojourn in college or attain a higher level of proficiency in their specialized field than is now possible in the typical institution of higher learning. (4, p. 44)

A number of investigators, realizing the need for an effective measure of the home economics student's standing upon college entrance, have devised placement tests in the areas of clothing and textiles, and foods and nutrition. The purpose of the study by Saddler (56) was to prepare a placement test which could be used to section students enrolled in elementary clothing construction at Iowa State College in homogeneous groups. Two sections were included in the test, a paper-and pencil section to determine the acquisition of information and a practical section to test sewing ability. It was found that if both sections of the test were used together, better prediction could be made than if either section of the test were used alone.

Bray (10) developed a pencil-and-paper test, in 1949, to determine placement of students at the Ontario College of Agriculture in clothing courses, and for measuring achievement after instruction. The test was given to entering freshmen and students were classified on the basis of the test scores. The investigator concluded, after a trial period, that the test was a valid device for classifying students in beginning college clothing classes.

Davis (22), in a study reported in 1952, indicated that placement tests in clothing had been used for the previous four years by the Division of Home Economics at West Virginia University. These tests were administered before registration, and students were exempted from elementary clothing on the basis of a high placement test score. The purpose of Davis' study was to determine the validity of the tests used. Mean grades of students exempt from elementary clothing and those not exempt were analyzed. The data showed a difference of nearly one whole letter grade. From this evidence, Davis concluded that the tests were valid ones for exempting students from elementary clothing.

Three recent studies were reported in the area of foods and nutrition. The purposes of the study by Colburn (17) were:

To create a device which would be instrumental in classifying students in foods classes where the time would be spent in the acquisition of new and challenging experiences, learnings, and understandings;

To help incoming students to realize the depth and scope of the field so that they may feel the need for further study to supplement what they have already learned in the home, the classroom, or as an observant member of society;

To perfect the device by careful analysis and comparison of the tests as a whole and each individual part for reliability, validity, and objectivity.

Two tests were prepared, one measuring knowledge of food principles involved in food preparation and the other, the definition of terms used in food preparation. The two tests were tried out with Homemaking III students in three high schools and with freshman home economics students at South Dakota State College.

Students, in general, had a great deal of difficulty with the test

dealing with principles of food preparation. This led Colburn to conclude that more emphasis had been placed on the actual preparation of food in high school than on principles of cookery. The students were also better informed on the definition of terms used in cookery than on the application of principles. The reliability coefficient of the combined tests, however, was sufficiently high to warrant a trial use in the classification of freshmen in beginning college foods classes.

A study concerning the same problem was carried out by Wangsgard (66) in 1958. The purpose of this study was to develop a laboratory examination which would objectively measure a student's experience in food preparation both as to quality and breadth. The difficulty of measurement by the usual laboratory test of having the student prepare one or two finished products was recognized. Wangsgard attempted to design an instrument which would measure a student's understanding of a variety of processes involved in food preparation and her ability to carry out the processes. The test was made up of a series of specific procedures which are crucial in determining the quality of many products. It was found that many procedures could be measured in a shorter period of time than would be required to finish the preparation of any one product. Wangsgard recommended that this type of laboratory examination be used in conjunction with a written examination designed to test knowledge of subject matter, as a means of providing an understanding of a student's background in the field of foods.

A study by Nowlan (51), reported in 1960, had as its purpose the construction of a nutrition pretest to measure the student's knowledge

and understanding about nutrition before he undertakes any formal university course of instruction in the subject. It was not the purpose of the pretest to test for course accomplishment, but rather to test for existing knowledge and attitudes which might have been acquired from out-of-school as well as in-school experiences. Items were designed which would indicate whether or not the student had the nutritional information necessary to make wise selections in food, and to differentiate between the whole truth and partial truths with which everyone is confronted.

The pretest was given to freshman students at Cornell University prior to any college instruction in nutrition. The fact that those students who stated that they had received previous training in nutrition made slightly higher scores in the pretest than those without previous training was taken as support of the content validity of the pretest. It was concluded that the instrument was basically sound at the time, but one which should be modified and improved with usage. Results obtained from use of the pretest should serve as an aid to the teacher in planning a course in elementary nutrition for freshman students.

Although little information has reached the educational press which would indicate constructive action by home economics educators in trying to cope with the problem of school-college articulation, there can be no doubt that some such action has taken place in isolated cases. The subject of the pretesting of students prior to registration in elementary courses has been discussed at a number of national meetings of college teachers of foods and nutrition. Various uses made of the results of pretests in foods, as stated by college teachers from a number of

institutions, were reported by Hussemann (37, p. 95): students are excused from a course, put into different sections, provided opportunities for different kinds of experiences during laboratory hours, or given credit for the course. One institution provides for a remedial course without credit for those students who lack skill and certain basic understandings. All students can then begin the second semester with a more similar background. Another institution asks all students to attend lectures and demonstrations but to decide for themselves whether they need the laboratory work when individual foods are prepared. They are expected to be present when meals are prepared.

Some college departments of home economics have been working for a number of years in the direction of permitting students to start where their level of proficiency indicated that they could do successful work. Arny (4) pointed out that one eastern college has discovered that it is possible to exempt about half of their freshman students from one or more of the elementary courses previously required of all students. Significantly, these students almost always received better-than-average marks when they took the later courses in the sequence.

In this section, some reports of literature have been reviewed which indicate that home economics educators at the college level realize the importance of trying to meet the needs of freshman students. Several methods have been shown to be in use over a period of years, all aimed at finding out the capability of the student entering college for the first time in order to deal more effectively with the student in college courses. Reports of cooperative action between high schools and colleges

for the purpose of improving the articulation of home economics courses at the two levels were noticeably missing from the literature.



## CHAPTER III

### PRE-COLLEGE EXPERIENCES AND DUPLICATION OF EXPERIENCES IN COLLEGE OF A SELECTED GROUP OF HOME ECONOMICS SENIORS

The purpose of this chapter is to present and interpret data which were secured from college home economics seniors in regard to the background of experiences before college and the duplication in college home economics courses of (a) experiences performed and (b) understandings acquired before college.

As stated in Chapter I, departments of home economics in three Virginia colleges and the College of Home Economics of the University of Tennessee participated in the study. In some instances the findings will be presented as applying to the total group, in others as separate groupings for the two states.

The student questionnaire used in this study contained three parts (see Appendix B). The information sought in Parts I and II concerned the area of foods and nutrition. Part I was made up of forty-two experiences believed to be representative of those in which most students engage, either in school or in out-of-school situations. A list of the items as numbered in the questionnaire appears in Appendix C, page 174.

Part II of the questionnaire contained thirty-eight basic understandings which students probably acquire at some time in their training. The principles listed cut across all areas of cookery and included items which are purely nutritional in character. Only one item dealt specifically with the management of time and energy in the preparation of food.

A list of the items, numbered as they were in the questionnaire, appears in Appendix C, page 176.

This chapter will deal largely with these data. Some data pertinent to the topics included in this chapter were obtained from Part III of the student questionnaire.

#### A. BACKGROUND EXPERIENCES RELATED TO HOME ECONOMICS

Information concerning the experiences of students before entering college is important in the planning of college courses in any curriculum. The situations in which students engage in food and nutrition activities, in particular, were considered to be: the high school class, the local chapter of the Future Homemakers of America, the 4-H Club, and the home.

##### Time Spent in High School Homemaking, F H A, and 4-H Club

Part III of the questionnaire contained questions intended to determine (a) the amount of time spent by the respondents in high school homemaking classes, (b) the approximate proportion of that time devoted to the study of foods and nutrition, and (c) the years of membership in the Future Homemakers of America and in the 4-H Club. Table I presents the findings related to the number of years spent in those activities with the exception of the time devoted to the study of foods and nutrition, which is presented in Table II.

An analysis of the data indicated that home economics students at the University of Tennessee were likely to have taken more home economics at the high school level than were those students from the three colleges in Virginia. More than two-thirds (67.4 per cent) of the seniors

TABLE I

TIME SPENT IN HIGH SCHOOL HOMEMAKING AND IN MEMBERSHIP IN  
FHA AND 4-H CLUB AS REPORTED BY A GROUP OF COLLEGE  
SENIORS OF HOME ECONOMICS, 1961

Situation and time spent	University of Tennessee N=92		Three Virginia colleges N=64		Total N=156	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
High school homemaking						
None	8	8.7	10	15.6	18	11.5
One year	11	12.0	14	21.9	25	16.0
Two years	19	20.7	12	18.8	31	19.9
Three years	43	46.7	18	28.1	61	39.1
Four years	11	12.0	10	15.6	21	13.5
F H A						
None	29	31.5	18	28.1	47	30.1
One year	10	10.9	7	10.9	17	10.9
Two years	12	13.0	7	10.9	19	12.2
Three years	16	17.4	13	20.3	29	18.6
Four years	25	27.2	19	29.7	44	28.2
4-H Club						
None	56	60.9	27	42.2	83	53.2
One year	3	3.3	3	4.7	6	3.8
Two years	7	7.6	4	6.3	11	7.1
Three years	3	3.3	4	6.3	7	4.5
Four or more years	23	25.0	26	40.6	49	31.4

TABLE II

TIME SPENT BY STUDENTS IN STUDY OF FOODS AND NUTRITION  
 BY NUMBER OF YEARS OF HIGH SCHOOL HOMEMAKING AS  
 REPORTED BY A GROUP OF COLLEGE SENIORS  
 OF HOME ECONOMICS, 1961

Years of high school home economics	Number of students	Time spent in study of foods and nutrition							
		All		One-half		One-third to one-fourth		Less than one-fourth	
		Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
2	31	0	0	7	22.6	21	67.7	3	9.7
3	60	0	0	12	20.0	43	71.7	5	8.3
4	21	0	0	2	9.5	16	76.2	3	14.3
Total	112	0	0	21	18.8	80	71.4	11	9.8

from the University of Tennessee had had two to three years of high school homemaking, with almost one-half of the group having taken three years of home economics in high school (Table I). It was found, in comparison, that less than one-half (46.9 per cent) of the seniors from the Virginia colleges had had two to three years of high school homemaking, with slightly over one-fourth of the group having had as much as three years of home economics in high school. The total number of student participants from both Tennessee and Virginia who had completed four years of high school home economics (13.5 per cent) was only slightly higher than the number who had not studied home economics at all (11.5 per cent). The mode for each state and for the total group was three years of home-making in high school; the mean number of years spent in high school homemaking for the total group was 2.3 years.

Data pertaining to membership in the Future Homemakers of America showed that almost one-third of the seniors had never been members of that organization, while 28.2 per cent had been members for four years. More than one-half of the group (59.0 per cent) had belonged to one of the F H A chapters for two or more of their high school years.

Further analysis of the data in Table I indicates that more than one-half of the respondents had never been members of the 4-H Club as compared with the one-third who had never belonged to the F H A. The majority of those who had joined the 4-H Club, however, had remained as members for four or more years. Forty-three per cent of the total group belonged to the 4-H Club for two years or longer.

### Time Devoted to the Study of Foods and Nutrition

The investigator was concerned with securing some estimate of the total amount of time in home economics classes which had been devoted specifically to the study of foods and nutrition. As a follow-up to the question regarding the number of years of high school homemaking the student had had, the following question was asked: "Approximately how much of this time was spent in the study of foods and nutrition?" The responses of the 113 students who had reported having had two or more years of high school homemaking were checked for answers to this question.

More than three-fourths (71.4 per cent) of the students estimated that from one-third to one-fourth of the time spent in high school homemaking was devoted to the study of foods and nutrition (Table II). Approximately one-fifth of the respondents who had taken two or three years of high school home economics (22.6 per cent and 20.0 per cent, respectively) reported that one-half of the time was spent in the study of foods and nutrition. It should be noted that only 9.8 per cent of the students who had spent four years in high school homemaking made such a report. The indication seems to be that greater blocks of time are allowed for the study of foods and nutrition in the first two or three years of high school homemaking, with the fourth year being devoted to other areas of home economics. Some weight is added to this observation when it is noted that a significant number (14.3 per cent) of the high school students who had completed four years of homemaking reported that less than one-fourth of the time in such classes had been directed to the study of foods and nutrition.

### Activities Performed in High School Class

In order to obtain information about the activities relating to foods and nutrition which are given emphasis in high school classes, students were asked to respond to the forty-two items listed in Appendix C, page 174. The results of this response for the 113 seniors who had had two or more years of high school homemaking are presented in Table XXVI, Appendix D. This table shows the total number and percentage distribution of students who had engaged in each experience. The mean number of activities performed in high school per student was found to be 15.8 out of a total of forty-two.

The experiences in which as many as three-fourths of the students had engaged in high school class were the preparation of eggs, biscuits, plain pastry, and hot chocolate or cocoa. From 50 to 74 per cent of the total group indicated having engaged in the following activities: the preparation of soft meringue, gelatin salad, broiled meat, white sauce, fresh fruit pie, yeast bread, butter cake, flour muffins, fondant and/or chocolate fudge, coffee, and the evaluation of a personal diet record in terms of an accepted food guide. That so many activities were reported to have been performed in high school class by a majority of the participating students seems to strengthen the opinion of Fleck (31) that experience in high school homemaking needs to be recognized by college instructors of home economics.

The items which were checked by less than 10 per cent of the group were the preparation of fresh broccoli and fresh cauliflower, participation in an animal-feeding experiment, and the analysis of food advertising

and of claims made by food faddists and promoters of reducing plans. Other items checked by only 10 to 14 per cent of the students--indicating a small amount of emphasis on those activities in high school--are those concerned with: the preparation of pot roast, roast fowl, and caramels; the use of the pressure canner in food preservation; and the use of the Table of Recommended Dietary Allowances in the evaluation of diets.

#### Activities Performed in Local Chapters of the F H A

Little experience in the area of foods and nutrition seemed to have been gained through membership in the Future Homemakers of America (Table XXVI, Appendix D). Thirty-three of the forty-two items either were not checked at all or were checked by less than 2.5 per cent of the respondents. A small percentage of the students indicated that they had engaged in such activities as the preparation of cakes, candy, and hot beverages. It might be assumed that these activities were connected with the serving of refreshments at chapter meetings. Item 10, biscuits, was checked by 5.3 per cent of the respondents, while 2.7 per cent of the group indicated that through the F H A chapter they had assumed full responsibility for meals for a real or simulated family.

#### Activities Performed in the 4-H Club

Relatively few of the forty-two experiences were reported to have been performed in the 4-H Club, as was true in relation to membership in the F H A (Table XXVI, Appendix D). Twenty-eight per cent of the respondents indicated that they had prepared biscuits as a 4-H Club project. This was the only activity which was reported to have been engaged in by



more than one-fifth of the group. Other food products which were prepared by as many as 15 per cent of the students were fruit pie, pastry, butter cakes, and chocolate fudge. Those items concerned with food preservation (items 31 to 34 inclusive) were checked by one-tenth of the respondents. The mean number of activities in the area of foods and nutrition engaged in by each student was found to be 2.8 of the total of forty-two. The view of a college administrator of home economics, reported by Christopherson (15), that the schools of home economics give too little recognition to work done in 4-H Clubs seems to receive little support from the findings in the present study.

#### Activities Performed in the Home

Home experiences in the area of foods and nutrition are many and varied. Knowledge of the kind and amount of such experience could provide valuable assistance in the total evaluation of the student's ability upon entering college. The data presented in Table XXVI, Appendix D, indicate that the 113 college seniors in this study, as a group, had participated in the home in all of the forty-two experiences. An analysis of the data, however, reveals a wide variation in the frequency of participation for the different items.

It is recognized that such activities as participation in an animal-feeding experiment (item 36), making a detailed analysis of a dietary and energy requirement of an individual (item 37), and using the Table of Recommended Dietary Allowances in the evaluation of diets (item 41) are rarely practiced in the home. Less than 3 per cent of the students indicated home participation in any one of those experiences.

The items, in addition to those just mentioned, that were checked by fewer than 10 per cent of the group are items 38, 40, and 42. These are the activities concerned with the evaluation of diets in terms of an accepted food guide such as the Basic Seven or Basic Four, work on food budgets at different cost levels, and an analysis of food advertising. Cheese souffle and mayonnaise were seldom checked as having been prepared at home. Only 17.7 per cent of the respondents indicated that the evaluation of meals in terms of calories was a home activity.

More than nine out of ten students reported that they prepared eggs, broiled meat, and made biscuits, butter cakes, fondant and/or chocolate fudge, coffee, and hot chocolate or cocoa in the home. The following items were checked as having been prepared at home by more than three out of four students: soft meringue, gelatin salad, lemon pie filling, fresh fruit pie, applesauce and/or stewed apples, and boiled frosting. Eighty per cent of the seniors indicated that they had had full responsibility for meals in the home, that is, for the selecting, purchasing, preparing, and serving of food for the family. Fourteen additional activities were a part of the home experiences of five out of ten students.

Of the forty-two selected experiences, the mean number performed in the home per student was much greater than the number performed in any of the other situations, as is shown by the following tabulation:

<u>Situation</u>	<u>Mean number of experiences performed</u>
Home	24.2
High school class	15.8
4-H Club	2.8
F H A	.6

### Understandings Acquired Before College

Knowledge of the stage in the training of home economics students when emphasis is given to certain basic principles could be of value in helping to solve articulation problems between high school and college courses in foods and nutrition. In order to obtain some such information, students participating in this investigation were asked to indicate when they had first acquired some concept of each of the thirty-eight understandings listed in Appendix C, page 176. Responses of the 113 college seniors to this request are presented in Table XXVII, Appendix D.

An examination of the data revealed that very few of the thirty-eight basic principles of foods and nutrition were reported by the respondents to have been understood before high school. The mean number of understandings acquired per student was found to be 3.9. Approximately one out of three respondents said they had had an understanding of the value of proper placement of tools and equipment as a means of saving time and energy in meal preparation (item 19). A similar number reported an understanding of the value of citrus fruits as a source of vitamin C (item 36). Slightly more than 25 per cent of the students had learned before entering high school that green, leafy, and yellow vegetables are good sources of vitamin A and iron (item 17); that the caloric value of foods increases as the amount of fat in the diet increases (item 18); and that the three functions of food in the body are (a) to build tissue, (b) to regulate body processes, and (c) to supply energy (item 21). Items 13 and 14, which

concerned the extraction of tannin from coffee grounds and tea leaves, and the prevention of a scum on heated milk, were listed as being understood before high school by one out of five respondents. The great majority of the items were checked by less than 10 per cent of the students.

In comparing the responses in the column headed "before high school" with those in the column entitled "in high school," it was found that a much larger percentage of the items were checked in the latter column. The following figures show the mean number of the thirty-eight selected understandings which were acquired per student in high school in comparison with those acquired before high school:

<u>Period of time</u>	<u>Mean number of understandings acquired</u>
Before high school	3.9
In high school	15.7

The understandings checked most frequently by the 113 students as having been acquired in high school were those pertaining to (a) the functions of food in the body, (b) the sources of the various food elements, (c) the value of the proper placement of tools and equipment to the conservation of time and energy in meal preparation, and (d) some of the simpler principles of cookery as stated in items 1, 3, 6, and 29 (Table XXVI, Appendix D). The understandings referred to in a, b, and c above are items 17 to 22 inclusive, 30, 31, 33, and 36.

The item checked by the fewest number of students (8.0 per cent) concerned the hydrolytic effect of acid upon starch (item 5). Less than

one-fourth of the students reported an understanding in high school of items 7, 8, 12, 23, 24, 34, and 38. A check of the above-mentioned items will reveal that, in most instances, they involve the cookery and nutritional principles which are more complex and scientific in nature.

The responses to items 15 and 24 seem difficult to reconcile. Although 40.7 per cent of the respondents indicated that they had acquired an understanding of the factors involved in successful preservation of food (item 15), only 16.8 per cent reported an awareness in high school of the safest method of achieving this goal in the canning of low acid foods (item 24). The assumption might reasonably be that the water-bath method of canning such food continues to be in use and is considered an acceptable practice, or that canning as a method of preserving food has given way to the quick-freezing method to such an extent that less attention is being directed to the principles of canning by high school teachers.

#### B. DUPLICATION OF HOME ECONOMICS EXPERIENCES AND ITS POSSIBLE VALUE

The questionnaire used in this study was so constructed that students could indicate the experiences performed and the understandings acquired in college as well as those of the pre-college period. In this way information relative to the extent of college duplication of subject matter in the area of foods and nutrition was secured.

##### College Duplication of Experiences

Some duplication in college was reported for each of the forty-two

experiences used in this study. The percentage of students reporting college duplication for the individual activities ranged from 2.7 per cent to 94.7 per cent (Table XXVIII, Appendix D). The mean number of activities repeated per student was found to be 22.4. The items involving the greatest amount of repetition in college, in their order of frequency were: biscuits, plain pastry, coffee, and broiled meat (94.7 to 92.9 per cent); eggs, butter cake, hot chocolate or cocoa, and white sauce (84.9 to 82.3 per cent). Three out of four respondents indicated duplication in the case of gelatin salad, yeast bread, fondant or chocolate fudge, and in the assuming of full responsibility for meals for a family. A total of twenty-six experiences were reported to have been duplicated by five out of ten respondents.

The activities reported by the fewest number of respondents as having been duplicated were: participation in an animal-feeding experiment (item 36); evaluation of food advertising and of claims made by food faddists and promoters of reducing plans (item 40); use of the Table of Recommended Dietary Allowances in the evaluation of diets (item 41); and the preparation of cheese souffle, fresh broccoli, fresh cauliflower, and caramels (items 2, 23, 25, and 27). Reference to the data in Table XXVI, Appendix D, will reveal that these activities were checked by a decided majority of students as either having been carried out at the college level only, or as not having been performed at any time. Approximately two out of five respondents indicated that they had never cooked fresh broccoli or fresh cauliflower. This seems to reflect the extensive use of partially prepared foods in the preparation of meals both at school and in the home.

Other experiences which had never been performed or had been carried out at the college level only by a large number of the respondents were: preparation of roast fowl, mayonnaise, and pop-overs or cream puffs; making a detailed analysis of the dietary and energy requirements of an individual; and working out food budgets at different cost levels (items 9, 12, 18, 37, and 42). Consequently, very few of the respondents reported duplication in college of those experiences.

Attention is called to the data in the area of food preservation (items 31-34 inclusive). Forty-four per cent of the students reported duplication in preparing and packaging a green vegetable for the freezer. Fewer students (approximately 30 per cent) indicated that they had repeated canning by the water-bath method and/or by use of the pressure canner in college, while only 26 per cent reported duplication of jelly making. A greater percentage of students indicated having packaged food for the freezer in both the high school class and at home than had taken part in canning or jelly-making in either situation (Table XXVI, Appendix D). Conversely, fewer students reported that they had never packaged food for the freezer than was so reported in the case of canning and the making of jelly. The well-known trend toward a preference for quick-freezing as a method of preserving food appears to be indicated by these data.

In Part III, question 10, of the student questionnaire, opinions were asked concerning the extent of repetition in college of experiences had earlier in three areas of foods and nutrition. A majority of the respondents (87.6 per cent) believed that there is some or much repetition

in college in the area of food preparation as opposed to the 11.5 per cent who did not report that any duplication had occurred (Table III). Sixty per cent of the students expressed the opinion that some or much repetition occurred in meal management, while a slightly greater number (68.1 per cent) reported some or much repetition in learnings in the area of nutrition. It is significant to note that in the column headed "much," the greatest number of students (9.7 per cent) checked food preparation. It was indicated by 4.4 per cent of the group that much repeating occurred in nutrition learnings, while only 2.7 per cent so reported as applied to meal management.

The students were also asked to indicate the courses in these areas in which, in their opinion, unnecessary duplication of experiences occurred (Table IV). Analysis of the data indicates that approximately three-fourths of the students felt that useless repetition took place in one or more courses in the area of foods and nutrition. Of the total group, 58.4 per cent indicated that this occurred in the first course in food preparation, while 31.9 per cent believed that this was the case in the first course in nutrition. Another 9.7 per cent of the respondents reported unnecessary repetition in the meal management course. Six of the 113 students (5.3 per cent) expressed the opinion that useless duplication took place in the second food preparation course.

One could reasonably assume that the student would fail to be challenged in college courses to the extent that repetition of course content occurs. Table V contains a summary of the students' responses to a question aimed at disclosing consistency of opinions regarding the



TABLE III  
 OPINIONS OF COLLEGE HOME ECONOMICS SENIORS REGARDING  
 THE AMOUNT OF REPETITION GENERALLY OCCURRING  
 IN COLLEGE IN THREE AREAS OF FOODS  
 AND NUTRITION, 1961

Area and college	Number of seniors	Amount of repetition <sup>a</sup>					
		None		Some		Much	
		Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Food preparation							
University of Tennessee	73	7	9.6	57	78.1	8	11.0
Three Virginia colleges	40	6	15.0	31	77.5	3	7.5
Total	113	13	11.5	88	77.9	11	9.7
Meal management							
University of Tennessee	73	24	32.9	47	64.4	2	2.7
Three Virginia colleges	40	21	52.5	18	45.0	1	2.5
Total	113	45	39.8	65	57.5	3	2.7
Knowledge of nutrition							
University of Tennessee	73	21	28.8	46	63.0	4	5.5
Three Virginia colleges	40	13	32.5	26	65.0	1	2.5
Total	113	34	30.1	72	63.7	5	4.4

<sup>a</sup> Some percentages will total less than 100 since three of the students did not respond to all items.

TABLE IV  
 OPINIONS OF COLLEGE HOME ECONOMICS SENIORS CONCERNING  
 THE EXISTENCE OF UNNECESSARY DUPLICATION IN  
 VARIOUS AREAS OF FOODS AND  
 NUTRITION, 1961<sup>a</sup>

Area of unnecessary duplication	University of Tennessee N=73		Three Virginia colleges N=40		Total N=113	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent <sup>b</sup>
First course in food preparation	42	57.5	24	60.0	66	58.4
Second course in food preparation	5	6.8	1	2.5	6	5.3
First course in nutrition <sup>c</sup>	27	37.0	9	22.5	36	31.9
Meal management course	10	13.7	1	2.5	11	9.7

<sup>a</sup>26.0 per cent of the students from the University of Tennessee and 27.5 of those from Virginia said there was no unnecessary duplication.

<sup>b</sup>Percentages will total more than 100 since a number of students checked two or more courses.

<sup>c</sup>The second course of nutrition was mentioned by one Virginia student.

TABLE V

RESPONSES OF COLLEGE SENIORS IN HOME ECONOMICS TO THE QUESTION,  
 "DID YOUR COLLEGE WORK IN FOODS AND NUTRITION  
 CHALLENGE YOUR BEST THINKING ABILITY?"

College	Number of students	Yes		No		Partially	
		Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
University of Tennessee	73	49	67.1	7	9.6	17	23.3
Three Virginia colleges	40	14	35.0 <sup>a</sup>	2	5.0	23	57.5
Total	113	63	55.8	9	8.0	40	35.4

<sup>a</sup>Percentages will total somewhat less than 100 since one Virginia student did not respond.

existence of repetition and the lack of challenge. A comparison of the data in Tables III, IV, and V reveals some similarity in the responses which appear to be significant. Of the total group, 9.7 per cent reported much repetition in the area of food preparation, with lesser percentages indicated in the other two areas of foods and nutrition (Table III). These numbers are somewhat in agreement with the 8.0 per cent of students who stated that college work did not present a challenge (Table V). The number of Virginia students who indicated that college courses offered only a partial challenge (57.5 per cent) appeared to be consistent with the responses of that group indicating "some" repetition in college courses, when the average for the three areas was considered. There appeared to be no close relationship between the high percentage of Tennessee students who answered "yes" to the question concerning the challenge of college courses and their previous indication of some or much repetition in college classes.

#### Value Attached to College Duplication of Experiences

Information regarding the amount of duplication that occurs in college courses in home economics will have significance for this study only as it relates to the value attached to this duplication by the students involved. Respondents to the questionnaire indicated the extent to which they thought skills and/or knowledge were gained when an experience was repeated in college (Table XXVIII, Appendix D).

Of the 2,535 instances in which duplication of experiences were said to have occurred, approximately one-fourth were reported to be of no value, one-fourth to be of much value, and one-half to be of some

value (Table VI). The experiences through which students indicated the greatest benefit from college repetition were those related to the planning and serving of meals (items 35 and 42). More than three-fourths of the students reported that much value resulted from continued emphasis upon these activities in college. Other experiences from which much benefit was gained through college repetition were: participation in an animal-feeding experiment, analysis of dietary and energy requirements of an individual, evaluation of diets both in terms of a layman's food guide and of the N R C <sup>a</sup> allowances, and analysis of food advertising and of claims made by food faddists and promoters of reducing plans (items 36, 37, 38, 40, and 41). Little attention was reported to have been given to these items at the pre-college level (Tables XXVI and XXVIII); hence few cases of duplication were indicated.

The experiences from which the respondents apparently gained the least benefit through college repetition were the preparation of coffee and cocoa or hot chocolate (items 29 and 30). A great majority of the students indicated much duplication involving these items, to which they attached no value. In at least four instances out of ten, no new skills or additional knowledge were reported as having been acquired through repeating in college the cooking of eggs, soft meringue, escalloped potatoes, lemon pie filling, stewed fruit, and broccoli. In approximately one-third of the cases, no benefit was reported to have been gained in college from the following activities: the preparation of

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<sup>a</sup>Recommended Dietary Allowances set up by the National Research Council.

TABLE VI

RESPONSES OF HOME ECONOMICS SENIORS REGARDING THE VALUE  
OF DUPLICATION IN COLLEGE OF FORTY-TWO SELECTED  
EXPERIENCES IN FOODS AND NUTRITION, 1961

College	Number of students	Instances of duplication reported		Value attached to duplication					
		Num- ber	Per cent	None		Some		Much	
				Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
University of Tennessee	73	1,706	55.6	498	29.2	826	48.4	382	22.4
Three Virginia colleges	40	829	49.3	196	23.6	378	45.6	255	30.8
Total	113	2,535	53.4	694	27.3	1204	47.4	637	25.1

gelatin salad, fresh fruit pie, butter cake, boiled frosting; and the preparing and packaging of a green vegetable for the freezer.

In comparing the responses from students at the University of Tennessee with those from the three Virginia colleges where there are smaller enrollments, a striking similarity may be noted (Table VI). The size of the home economics department had no apparent effect upon the amount of duplication in college home economics courses reported by its students, nor upon the value attached to that duplication by the students. This finding is not in agreement with that of Nelson (49), who reported in her study that more of the respondents from the small colleges than those from colleges with larger enrollments considered their elementary college courses had been a repetition of materials studied in high school home economics.

An aspect of the present study which seemed to be worthy of consideration was the attempt to determine whether an increase in high school homemaking beyond two full years had any effect upon the feeling of the students regarding repetition of foods and nutrition experiences in college home economics courses. Analysis of the data in Table VII indicates that the respondents who had been enrolled in high school homemaking for two years reported as many instances of duplication as did those with three and four years of high school home economics. Slightly less value was attached to the repetition of course material in college by those students with a background of four years of home economics in high school. It would appear from this study that an increase in high school courses in home economics beyond two years has no significant

TABLE VII

VALUE ATTACHED TO DUPLICATION IN COLLEGE OF FOODS AND  
NUTRITION EXPERIENCES BY NUMBER OF YEARS OF  
HIGH SCHOOL HOMEMAKING AS REPORTED BY  
A GROUP OF COLLEGE SENIORS  
OF HOME ECONOMICS, 1961

Years of high school homemaking	Number of students	Instances of duplication reported		Value attached to duplication					
				None		Some		Much	
		Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
2	31	704	54.1	185	26.3	337	47.9	182	25.9
3	61	1,354	52.8	368	27.2	629	46.4	357	26.4
4	21	477	54.1	141	29.6	238	49.9	98	20.5
Total	113	2,535	53.4	694	27.3	1204	47.4	637	25.1



effect upon the feeling regarding the amount of duplication in college foods and nutrition courses, nor upon the value assigned to that duplication by the students. These findings tended to confirm the observation made earlier that the study of foods and nutrition for the students in this study was largely confined to the early years of high school homemaking.

A similar investigation was undertaken to determine whether the college majors in foods and nutrition expressed opinions regarding the value of the repetition of foods and nutrition experiences in college which differed from those of students majoring in other areas of home economics. Of the 113 student participants in the study, there were twenty-eight who had chosen some phase of foods and/or nutrition as an area of special interest. A random sampling procedure was used in selecting an equal number of participants from other areas of special interest. Those chosen included nine from textiles and clothing, eleven from child development and family relations, four from related arts and crafts, three from home management, and one with a major in housing and interior design. In order to eliminate any effect which the number of years of high school homemaking might have on the results, the sampling was carried out in such a way that the two groups were equalized in this respect.

A somewhat larger number of instances of repeated experiences in college were indicated by the foods and nutrition majors than by those of the other group (Table VIII). There appeared to be no difference in the opinions of the students of the two groups concerning the benefits

TABLE VIII

VALUE ATTACHED TO DUPLICATION IN COLLEGE OF FORTY-TWO  
 SELECTED EXPERIENCES IN FOODS AND NUTRITION BY  
 COLLEGE MAJOR AS REPORTED BY A GROUP OF  
 COLLEGE SENIORS OF HOME  
 ECONOMICS, 1961

College major	Number of students	Instances of duplication reported		Value attached to duplication					
				None		Some		Much	
		Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Foods, nutrition, institutional management	28	700	59.5	208	29.7	340	48.6	152	21.7
Other areas of home economics	28	620	52.7	206	33.2	286	46.1	128	20.6

derived from duplication in college of pre-college experiences in foods and nutrition.

#### Repetition in College of Previously Acquired Understandings

An analysis of Table XXVII, Appendix D, revealed that in many instances the respondents indicated that their first concept of a particular understanding was acquired in college. No attempt was made to evaluate growth in comprehension of the thirty-eight basic principles which might have taken place during the four college years. The data in this section relate to those principles of which the student had some knowledge upon college entrance and with the contributions made by college courses in supplementing the previously acquired knowledge.

Each of the thirty-eight basic principles was reported by some students to have been partially or completely understood before college (Table XXIX, Appendix D). The number of students indicating pre-college understanding of the various items ranged from nine (8.0 per cent) on item 5, to 110 (97.3 per cent) on item 36. The mean number of items understood before college per student was 19.6, slightly more than one-half of those listed.

The data were checked to determine what relationship, if any, seemed to exist between the number of years of high school homemaking and the measure of pre-college understanding claimed by the respondents. According to the findings presented in Table IX, no greater understanding of the principles was indicated by the students who had taken three and four years of high school homemaking than by the group with a high school background of two years of home economics.

TABLE IX

MEAN NUMBER AND PER CENT OF SELECTED COOKERY AND NUTRITION  
PRINCIPLES UNDERSTOOD BEFORE COLLEGE BY NUMBER OF  
YEARS OF HIGH SCHOOL HOME MAKING AS REPORTED  
BY A GROUP OF COLLEGE SENIORS OF  
HOME ECONOMICS, 1961

Years of high school homemaking	Number of basic principles	Mean number of principles understood before college	Per cent of principles understood before college
2	38	19.5	52.2
3	38	19.8	52.0
4	38	19.4	51.0
Total	38	19.6	51.6

The principles of cookery least often reported as being understood before college were the following:

Excessive beating coagulates the albumin of egg white, causing loss of elasticity.

Heating collagen in the presence of moisture converts it to gelatin.

Starch hydrolyzes readily when heated in the presence of an acid, and eventually forms substances which lack thickening power.

The amount and quality of gluten in flour determine the strength of the flour.

Sugar and fat interfere with the development of gluten, thus tenderizing baked products.

Pressure canning is the safest method of canning foods with low acid content.

The presence of sugar interferes with the softening effect of moist heat on plant cells, thereby helping fruit to retain its shape during the cooking process.

In the presence of acids, chlorophyll decomposes and forms compounds which vary in color from yellow to olive brown.

The greater the concentration of a sucrose solution, the higher is its boiling point.

The following principles of cookery were said to have been learned before college by more than fifty per cent of the respondents:

Intense heat or long cooking causes excessive coagulation of high protein food resulting in toughness, shrinkage, and/or dryness of the product.

Cooking meat by dry heat methods can be applied successfully only to the tender cuts.

A scum on heated milk may be prevented or broken up after formation by beating the milk with a rotary beater.

Lumping of starch or flour is prevented by combining it with sugar, fat, or cold liquid before heating and by stirring while cooking.

Successful preservation of food depends upon the control of the agents which are responsible for food spoilage--namely, enzymes and the micro-organisms: yeasts, molds, and bacteria.

The principles of nutrition reported to have been understood before college by the fewest number of students were:

An animal will not grow if gelatin is the only protein in its diet.

The nutritional requirement of a pre-school child is higher than that of an adult in proportion to body weight.

A well-planned, low-cost diet is often higher in nutritive value than a high-cost diet.

The following nutrition principles were indicated as having been learned before college by more than four-fifths of the respondents:

The citrus fruits are dependable sources of vitamin C.

The three functions of food in the body are (a) to build tissue, (b) to regulate body processes, and (c) to supply energy.

Green, leafy, and yellow vegetables are good sources of vitamin A and iron.

The caloric value of food increases as the amount of fat in the food increases.

In addition to the previously stated principles, some concept of the following principles of nutrition was reported to have been acquired before college by at least 50 per cent of the student participants:

The nutrition of women as potential mothers affects the health of unborn children and, therefore, future generations.

Vitamin C is the most easily destroyed of the known vitamins.

Enriched bread contains added amounts of iron, thiamine, riboflavin, and niacin.

Eggs, milk, and meats contain complete proteins.

Milk is an excellent source of riboflavin.

Cereals contribute important amounts of protein to the diet.

Reducing diets can be adequate in all nutritive essentials.

Attention should be given to items 17 and 27. Whereas 92 per cent of the students indicated that they had learned before entering college that green, leafy, and yellow vegetables are good sources of vitamin A (item 17), only 44.2 per cent knew before college that the source of this vitamin in green and yellow vegetables is the provitamin, carotene (item 27). This, as well as other similar examples in these data, seem to indicate that pre-college training in foods and nutrition often consists of learning isolated facts without acquiring an adequate scientific background upon which the facts are based.

#### Contribution of College Home Economics Courses to Previously Acquired Understandings

The purpose of this part of the study was not only to try to determine the amount of overlapping in college of foods and nutrition subject matter already learned, but to assess the value of continued emphasis on certain selected understandings in this area. To this end, the questionnaire was constructed so that the students could indicate the extent to which their previous concept of these understandings was increased by college courses by checking one of three columns, headed "none," "some," and "much."

For purposes of clarification in interpreting and presenting the data, the thirty-eight understandings were classified in two groups--namely, principles of nutrition and principles of cookery. The latter group was further divided into several groups representing various

types of cookery. Tables X to XIII inclusive present the data resulting from this classification. Table XIV gives the findings pertaining to the remaining principles--those of a miscellaneous nature.

In a large majority of the instances (84.7 per cent), it was indicated that college courses increased "some" or "much" the understanding of those nutrition and cookery principles of which the student had some previous knowledge (Table XXIX, Appendix D). In more than one-fourth of the cases much increase in understanding of the various items was indicated as having been acquired in college, while in 15.3 per cent of the instances no value was attached to repeating the study of these principles in college.

Analysis of Table X will reveal that the principles of nutrition to which college courses made the greatest contribution, as indicated by the large number of respondents who checked the columns "some" and "much," were items 20, 25, 27, 34, 35, and 38. These items, as a group, concerned the why's and how's of nutritional knowledge rather than the statement of mere facts. The nutrition principles to which college courses made the least contribution, as indicated by the comparatively high percentage of students who checked the "none" column, were those pertaining to a knowledge of the source of the various food nutrients (items 18, 32, 33, and 36). These responses would seem to indicate that the average student in this study had learned before college the names and some of the food sources of the body nutrients, but felt insecure in her knowledge of why and how to apply these facts toward the achievement of improved nutrition.

The responses of the students regarding the contribution of college



TABLE X

CONTRIBUTION OF COLLEGE COURSES TO INCREASED UNDERSTANDING  
OF PREVIOUSLY LEARNED PRINCIPLES OF NUTRITION AS  
REPORTED BY A GROUP OF COLLEGE SENIORS  
OF HOME ECONOMICS, 1961

Item num- ber	Basic principle	Number reporting pre-college understanding	Contribution of college courses (responses expressed in per cent)		
			None	Some	Much
17	Green, leafy, and yellow vegetables are good sources of vitamin A and iron.	104	10.6	50.0	39.4
18	The caloric value of foods increases as the amount of fat in the food increases.	93	19.4	59.1	21.5
20	The nutrition of women as potential mothers affects the health of unborn children, and, therefore of future generations.	80	3.8	43.8	52.5
21	The three functions of food in the body are (a) to build tissue, (b) to regulate body processes, and (c) to supply energy.	101	9.9	54.5	35.6
22	Vitamin C is the most easily destroyed of the known vitamins.	66	15.2	63.6	21.2
25	Good nutrition demands that one be able to discriminate between fact and fallacy in the vast amount of advertising and popular beliefs about the use of foods.	54	5.6	61.1	33.3
26	The term "metabolism" refers to the changes which take place in the foodstuffs after they have been absorbed from the digestive tract of the body.	55	9.1	50.9	40.0
27	Carotene, known to be a precursor of vitamin A, occurs in the natural orange-yellow coloring matter of green and yellow vegetables.	50	4.0	62.0	34.0

TABLE X (continued)

Item num- ber	Basic principle	Number reporting pre-college understanding	Contribution of college courses (responses expressed in per cent)		
			None	Some	Much
28	In foods and nutrition there is an evergrowing body of knowledge based on experiments and the laws of science.	53	11.3	35.8	52.8
30	Enriched bread contains added amounts of iron, thiamine, riboflavin, and niacin.	74	16.2	66.2	17.6
31	Eggs, milk, and meats contain complete proteins.	78	16.7	51.3	32.1
32	Milk is an excellent source of riboflavin.	57	22.8	66.7	10.5
33	Cereals contribute important amounts of protein to the diet.	65	18.5	61.5	20.0
34	An animal will not grow if gelatin is the only protein in its diet.	18	5.6	88.9	5.6
35	A well-planned, low-cost diet is often higher in nutritive value than a high-cost diet.	41	4.9	39.0	56.1
36	The citrus fruits are dependable sources of vitamin C.	110	24.5	65.5	10.0
37	Reducing diets can be adequate in all nutritive essentials.	65	9.2	60.0	30.8
38	The nutritional requirement of a pre-school child is higher than that of an adult in proportion to body weight.	28	3.6	50.0	46.4

TABLE XI

CONTRIBUTION OF COLLEGE COURSES TO INCREASED UNDERSTANDING  
OF PREVIOUSLY LEARNED PRINCIPLES OF PROTEIN COOKERY  
AS REPORTED BY A GROUP OF COLLEGE SENIORS  
OF HOME ECONOMICS, 1961

Item num- ber	Basic principle	Number reporting pre-college understanding	Contribution of college courses (responses expressed in per cent)		
			None	Some	Much
1	Intense heat or long cooking causes excessive coagulation of high protein food resulting in toughness, shrinkage and/or dryness of the product.	76	3.9	59.2	36.8
2	Excessive beating coagulates the albumin of egg white, causing loss of elasticity.	40	27.5	62.5	10.0
3	Cooking meat by dry heat methods can be applied successfully only to the tender cuts.	69	5.8	72.5	21.7
14	A scum on heated milk may be prevented or broken up after formation by beating the milk with a rotary beater.	64	45.3	50.0	4.7
23	Heating collagen in the presence of moisture converts it to gelatin.	15	13.3	60.0	26.7

TABLE XII

CONTRIBUTION OF COLLEGE COURSES TO INCREASED UNDERSTANDING  
OF PREVIOUSLY LEARNED PRINCIPLES PERTAINING TO THE  
COOKERY OF BREADS AND STARCHES AS REPORTED  
BY A GROUP OF COLLEGE SENIORS OF  
HOME ECONOMICS, 1961

Item num- ber	Basic principle	Number reporting pre-college understanding	Contribution of college courses (responses expressed in per cent)		
			None	Some	Much
4	The fact that starch may be used as a thickening agent is due to the ability of starch granules to swell to many times their size in hot water.	54	29.6	51.9	18.5
5	Starch hydrolyzes readily when heated in the presence of an acid, and eventually forms substances which lack thickening power.	9	22.2	44.4	33.3
6	Lumping of starch or flour is prevented by combining it with sugar, fat, or cold liquid before heating and by stirring while cooking.	81	29.6	54.3	16.0
7	The amount and quality of gluten in flour determine the strength of the flour.	29	24.1	37.9	37.9
8	Sugar and fat interfere with the development of gluten, thus tenderizing baked products.	27	18.5	59.3	22.2

TABLE XIII

CONTRIBUTION OF COLLEGE COURSES TO INCREASED UNDERSTANDING  
OF PREVIOUSLY LEARNED PRINCIPLES PERTAINING TO FOOD  
PRESERVATION AS REPORTED BY A GROUP OF COLLEGE  
SENIORS OF HOME ECONOMICS, 1961

Item num- ber	Basic principle	Number reporting pre-college understanding	Contribution of college courses (responses expressed in per cent)		
			None	Some	Much
15	Successful preservation of food depends upon control of the agents which are responsible for food spoilage--namely, enzymes and the micro-organisms: yeasts, molds, and bacteria.	62	8.1	54.8	37.1
16	Enzymes and micro-organisms and their spores remain dormant as long as freezing temperatures are maintained, but become active upon thawing.	52	9.6	55.8	34.6
24	Pressure canning is the safest method of canning foods with low acid content.	24	33.3	54.2	12.5

TABLE XIV

CONTRIBUTION OF COLLEGE COURSES TO INCREASED UNDERSTANDING  
OF A MISCELLANEOUS GROUP OF PREVIOUSLY LEARNED  
PRINCIPLES OF COOKERY AS REPORTED BY A  
GROUP OF COLLEGE SENIORS OF HOME  
ECONOMICS, 1961

Item num- ber	Basic principle	Number reporting pre-college understanding	Contribution of college courses (responses expressed in per cent)		
			None	Some	Much
9	The presence of sugar inter- feres with the softening effect of moist heat on plant cells, thereby helping fruit to retain its shape during the cooking process.	32	21.9	59.4	18.8
10	In the presence of acids, chlorophyll decomposes and forms compounds which vary in color from yellow to olive brown.	38	10.5	68.4	21.1
11	Foods cooked in fat absorb more fat at low than at high temperature.	65	16.9	75.4	7.7
12	The greater the concentration of a sucrose solution, the higher is its boiling point.	21	14.3	38.1	47.4
13	Boiling or long contact with very hot water extracts enough tannin from coffee grounds and tea leaves to make the beverage bitter.	70	28.6	54.3	17.1
19	Time and energy are saved in meal preparation if tools and equipment are placed so that they are easy to see, easy to grasp, and easy to reach.	99	9.1	45.5	45.5
29	The longer the period of cooking, the greater the loss of minerals in solution.	96	10.4	65.6	24.0

courses to the understanding of cookery principles present a diversified picture (Tables XI, XII, XIII, and XIV). The majority of respondents in practically all instances reported that work in college was of some value in helping them to understand the principles and techniques of cookery. Otherwise, there was evidence of a wide difference of opinion concerning the importance of college work in adding to previously acquired knowledge. An examination of Table XII, which deals with those items concerning starch cookery, will show the dissimilarity and wide range of student responses. This situation is evident also in the answers to those principles in Table XIV. An exception is shown in item 19, where more than 90 per cent of the students reported definite assistance from college work in their understanding of ways and means of conserving time and energy in meal preparation.

There was a greater uniformity of opinion among those items concerning protein cookery (Table XI). More than 90 per cent of the respondents indicated that college courses contributed "some" or "much" to their previous knowledge of meat cookery (items 1 and 3). In the case of the techniques related to eggs and milk (items 2 and 14), the college work was reported to be of less importance. Examination of Table XIII will reveal that more than nine out of ten of the students felt that their understanding of the principles of food preservation was increased through the repetition of study in college (items 15 and 16).

An analysis was made to ascertain the effect of more than two years of high school homemaking on the feeling of students as to the

values attached to college work. No appreciable difference of opinion was found. A similar analysis was made to determine whether any noticeable relationship existed between the size of the department and the contribution of college courses to increased understanding of the basic principles, as reported by its students. In no instance was there more than a 4 per cent variation in the student responses.

The twenty-eight respondents who had majored in some phase of foods and/or nutrition were compared with a random sampling of twenty-eight students with a major in other areas of home economics. More than one-third of the respondents with a major in foods and nutrition reported that college courses had contributed "much" to increased understanding of the thirty-eight basic principles. In contrast, slightly less than one-fourth of the group who had majored in other areas of home economics made such a report. It may be reasonable to assume that this response was the natural result of the more advanced work in foods and nutrition taken by the majors in that area.

### C. CHAPTER SUMMARY

This chapter has been a presentation of the data obtained from a group of 113 college home economics seniors concerning the background of experiences related to home economics, the duplication in college of experiences and understandings in the area of foods and nutrition to which these students had been exposed earlier, and the value which was attached to that duplication by the students.

More than one-half of the participants had taken three or four



years of high school homemaking. The mean number of years spent in high school homemaking for the total group was 2.3 years. Membership in the Future Homemakers of America for two or more of their high school years was reported by 59.0 per cent of the students. Forty-three per cent of the group indicated membership in the 4-H Club for two or more years.

Most of the pre-college experience in foods and nutrition was obtained in the home and through high school class work. Of the forty-two selected experiences, a mean number of 24.2 and 15.8, respectively, were reported as home and school experiences. Very few food and nutrition experiences were reported as having been performed in connection with the F H A and the 4-H Club. Instances of duplication in college of pre-college experiences were evaluated by the students as follows: one-fourth of no value; one-half of some value; and one-fourth of much value.

The food and nutrition experiences involving the greatest amount of repetition in college in their order of frequency were: the preparation of biscuits, plain pastry, coffee, broiled meat, eggs, butter cake, hot chocolate or cocoa, white sauce, gelatin salad, yeast bread, fondant or chocolate fudge, and the assuming of full responsibility for meals for a real or simulated family. A majority of the students attached no value to repeating the preparation of coffee, cocoa, or hot chocolate in college classes. The experiences through which students indicated the greatest benefit from college repetition were those related to the planning and serving of meals, and the working out of food budgets at different cost levels.

Approximately one-half of the thirty-eight selected food and nutrition

principles were reported to have been understood to some degree before college entrance. In more than four-fifths of the instances of repetition, some or much value was reported to have been derived from the repetition. No increase in understanding was reported in 15.3 per cent of the instances.

The responses of the students would seem to indicate that the average student in this study had learned before college the three general functions of food in the body, the names and some of the food sources of the different body nutrients, but felt insecure in her knowledge of why and how to apply these facts toward the achievement of improved nutrition. Similarly as regards the principles of food preparation, the students appeared to have known before college that certain processes are necessary to success, but not to have understood the science behind the process.

The students reported that some or much unnecessary duplication of course material took place in college in all areas of foods and nutrition. More than one-half of the group (58.4 per cent) felt that such was the case in the first course in food preparation. Almost one-third of the students indicated that an unnecessary amount of repetition occurred in the first nutrition course. In contrast, fewer than one out of ten respondents felt that the repetition in the meal management course was unnecessary.

Neither the size of the home economics department nor an increase in high school homemaking beyond two full years appeared to have had any significant effect upon the amount of duplication reported by the students, nor upon the value attached to that duplication. The students who had majored in some phase of foods and/or nutrition reported a somewhat

greater amount of duplication in college of pre-college experiences and understandings in that area. The foods and/or nutrition majors tended to place greater value on the continued emphasis in college upon cookery and nutrition principles than did the students who had majored in other areas of home economics.

## CHAPTER IV

### ANALYSES OF FINDINGS RELATING TO SOME OF THE PROBLEMS OF ARTICULATION IN HOME ECONOMICS PROGRAMS

This chapter presents the opinions of college administrators of home economics and state supervisors of home economics education as they relate to problems of articulation between the high school and college programs in home economics. Included in the chapter are reports by all of the participants in the study--administrators, supervisors, and college home economics seniors--regarding policies and practices (a) of high schools in preparing students for college home economics, and (b) of colleges in making provision in college home economics courses for its students. Many of the statistical data are presented in tables which are followed by interpretations.

#### A. OPINIONS REGARDING THE KIND OF HIGH SCHOOL PROGRAM MOST APPROPRIATE FOR THE COLLEGE-BOUND STUDENT IN HOME ECONOMICS

An aspect of high school-college articulation which has been the subject of much discussion and some study is that of high school course requirements (a) for college-bound students in general, and (b) for college-bound students in specific curricula. Some attention has been directed to the pattern of high school courses which best equip a student for the study of home economics in college. Wheeler (68, p. 19) recognized the fact that increasing numbers of girls will continue their

formal education beyond high school, and discussed the necessity of giving due consideration to the college-bound student in home economics in order to prepare her for home economics study at the college level. At a southern regional conference of home economics educators held in 1956, the following question was raised: "Are we going to teach so we can hold pupils in school those last years of high school or are we to teach primarily to meet the needs of those who are to go on to college?" (64, p. 23)

A study by Lathrop (43), in which the high school transcripts and college performance of 333 home economics majors were examined, led the investigator to these conclusions: (a) the high school pattern of courses which seems to best equip home economics students for Iowa State College includes twelve semester hours of mathematics and science courses, and (b) the high school course patterns which are vocational in nature do not give as adequate a preparation for college as either the mathematics-science or the college preparatory pattern. Hall (35, p. 767) reported on a study in which a relationship was found to exist between the number of high school units in science and mathematics and the quality grade point average of sixty home economics majors. Allen (1, p. 91) recommended that students who major in home economics in college elect chemistry in high school.

#### Opinions Regarding the Amount of Homemaking in High School

The professional home economists who participated in the present study were surveyed concerning their views of the type of high school program most appropriate for the college-bound student in home economics, in general, and as it relates to the inclusion of specific subjects, one

of which was homemaking. Both college administrators and state supervisors expressed the belief that it is an advantage to the college home economics student to have had two years of high school experience in a home economics program of acceptable quality. With the exception of six administrators who indicated some uncertainty, there was general support of such a practice by the respondents (Table XV). It may be seen, however, that the supervisors tended to place much greater value on the experiences had by the student in high school homemaking than did the administrators. Whereas 92.3 per cent of the supervisors felt that high school experience was of "much" value to the college home economics student, only 55.0 per cent of the administrators expressed such a belief. The administrators were more inclined to believe that "some" rather than "much" value results from having had two years of high school home economics.

Both groups of respondents indicated less certainty concerning the added advantage to the college student of having had more than two years of high school homemaking. One-half of the administrators definitely answered "no" to a question aimed at getting the above information (Table XV), while another 30.4 per cent reported that they were uncertain as to the advantage to the college student of the additional high school courses in home economics. A somewhat different attitude was shown in the responses of the supervisors. Eight of the thirteen (61.5 per cent) expressed the opinion that it is beneficial to the college home economics student to have taken more than two years of high school homemaking, while only four supervisors did not believe such to be the

TABLE XV

RESPONSES OF ADMINISTRATORS OF COLLEGE DEPARTMENTS OF HOME  
ECONOMICS AND STATE SUPERVISORS OF HOME ECONOMICS  
EDUCATION TO QUESTIONS CONCERNING THE VALUE  
OF HIGH SCHOOL HOMEMAKING TO COLLEGE  
HOME ECONOMICS, 1961

Question	Administrators N=46		Supervisors N=13	
	Number	Per cent	Number	Per cent
Do you think that two years of high school experience in a home economics program of acceptable quality is an advantage to a student in college home economics?				
Yes	40	87.0	13	100
No	0		0	
Uncertain	6	13.0	0	
If <u>yes</u> , to what extent do you feel it is of value? <sup>a</sup>				
Much	22	55.0	12	92.3
Some	17	42.5	1	7.7
Little	0		0	
Do you feel that it is an added advantage to the college student of home economics to have had more than two years of high school home economics in such a program?				
Yes	9	19.6	8	61.5
No	23	50.0	4	30.8
Uncertain	14	30.4	1	7.7

<sup>a</sup>One of the forty administrators who answered "yes" did not respond to this question.

case. The difference in the position taken on this question by these two groups of home economists may be understandable when it is recalled that it is the college administrator and not the state supervisor who comes into direct contact with the college student and her problems.

#### Opinions Regarding the Amount of Science and Mathematics in High School

The college administrators were requested to indicate whether they felt that it was a decided advantage to the college home economics student to have had certain science and mathematics courses in high school. Table XVI presents the findings from this request. The respondents indicated general agreement on the value of high school science to the home economics student in college. Biology was considered to be of the greatest value, having been checked by 91.3 per cent of the group. More than four-fifths of the administrators (84.8 per cent) indicated that they believed the study of chemistry in high school to be beneficial to the college home economics student. A minority of the administrators reported that they were uncertain as to the worth of the different science courses, adding such comments as the following: "Depends upon the quality of the course"; "So many high schools have inadequately equipped departments and poorly qualified teachers"; "Experience has indicated that most sciences are taught without benefit of lab--students with no high school science do as well if not better in college science course"; and "Many times students without high school preparation do better than others."

Many of the comments, on the other hand, indicated strong support of high school science for college-bound students in home economics. The



TABLE XVI

RESPONSES OF FORTY-SIX ADMINISTRATORS OF COLLEGE DEPARTMENTS  
OF HOME ECONOMICS TO QUESTIONS CONCERNING THE VALUE  
OF HIGH SCHOOL SCIENCE AND MATHEMATICS COURSES  
TO COLLEGE HOME ECONOMICS, 1961<sup>a</sup>

Question	Yes		No		Uncertain	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Do you think it is a decided advantage to the college student in home economics to have had the following science courses, whether required or elective, in high school?						
General science	30	65.2	1	2.2	13	28.3
Chemistry	39	84.8	0		6	13.0
Biology	42	91.3	0		4	8.7
Physics	32	69.6	2	4.3	10	21.7
Do you think it is a decided advantage to the college student in home economics to have had the following mathematics courses, whether required or elective, in high school?						
Arithmetic	42	91.3	1 <sup>b</sup>	2.2	3 <sup>b</sup>	6.5
Algebra	43	93.5	0		3	6.5
Plane geometry	23	50.0	3	6.5	14	30.4

<sup>a</sup>Some percentages will total less than 100 as administrators did not respond to all items.

<sup>b</sup>It was felt by the respondents that a knowledge of arithmetic should be acquired during the elementary years.

belief that it is just as important, in some cases more so, for students to have a good background in science than to have had some home economics courses was expressed. Various areas of home economics in which science is of particular worth were pointed out. Several administrators stated that high school science of any kind, chemistry in particular, helps the student to overcome some fears and "mental blocks" concerning science courses, thereby eliminating the discouragement often experienced by home economics freshmen.

College administrators as a group tended to believe that a good background in arithmetic and algebra is a decided advantage to the student studying home economics in college (Table XVI). One-half of the respondents expressed a similar belief in regard to plane geometry, while 30.4 per cent stated that they were uncertain of the value of geometry to this particular curriculum. Such comments as the following are indicative of the opinions of the group: "College home economics is handicapped by weakness of students in mathematics"; "Home economics student doing graduate work is often hampered by lack of mathematics--needs enough mathematics to handle some statistics"; "Calculating per cent, division with fractions, writing simple equations important in home economics laboratory work"; and "Believe there is a strong correlation between high school mathematics courses and success in college chemistry."

#### Opinions Regarding the Kind of High School Program in General

The majority of the supervisors who cooperated in the present study indicated that they were not in favor of modifying the high school

program in home economics to meet the specific needs of the college-bound student. In response to the question, "Do you think the high school program in home economics should be somewhat different from that of the non-college-bound student?" more than three-fourths of the respondents answered "no," while two were uncertain and one said "yes." It was explained by some of the supervisors that the present program provides for increased scope and difficulty in experiences, and that the good teacher makes adjustments for individual differences. Two of the respondents felt that the advanced courses might be different for those students preparing to study home economics in college.

Participating college administrators were asked to state opinions regarding the kind of high school program which best equips a student for college work in home economics. In contrast to the belief of a majority of the supervisors that more than two years of high school homemaking is advantageous to the college home economics student, the administrators tended to place greater emphasis on a strong general academic background and to minimize the value of large blocks of time devoted to home economics in high school. Five respondents thought at least one year of homemaking should be included in the program of the college-bound student, while eleven (23.9 per cent) of the forty-six administrators indicated that two years of home economics could be taken by such a student provided the high school program is one of broad concept, well spread out over various areas. Only two of the administrators mentioned that the inclusion of more than two years of high school home economics would be of value to the college-bound home economics student.

In general, college administrators believed that the college-bound student in home economics should take a college preparatory course in high school which includes (a) two, preferably three years of science, (b) a minimum of two years of mathematics, and (c) a probable maximum of two years of home economics. The opinions expressed by this group of college administrators tended to be in agreement with the findings of Lathrop (43) that the high school course pattern which seems to best equip the college student of home economics is either the mathematics-science or the college preparatory pattern, rather than one which is vocational in nature.

Many of the administrators pointed out the importance of a good background in both written and spoken English, in social studies, and in the arts. Among the electives which were suggested as being appropriate for the college-bound student in home economics were foreign language (19.5 per cent) and typing (10.9 per cent). It was indicated by several of the respondents that the actual courses taken were of less importance to the prospective college student in home economics than was the development of the ability to study, to read with comprehension and a fair amount of speed, to express oneself both orally and in writing, to think logically, to assume responsibility, to make decisions, and to understand self and others. The type of program which would develop such competencies as those listed above was given priority over any set pattern of courses by 28.3 per cent of the administrators.

B. HIGH SCHOOL PRACTICES AS THEY RELATE TO THE  
COLLEGE-BOUND STUDENT IN HOME ECONOMICS

Another phase of the present study was to try to determine some of the current practices which are employed in dealing with the high school student who has signified an intention to study home economics in college. In view of the recent and increasing emphasis on mathematics and science, and of the reportedly close relationship between the study of these subjects in high school and success in college home economics, the practices of high schools relating to requirements and recommendations of these two subject matter areas were surveyed.

Practices Relating to Home Economics Courses

The majority of the state supervisors who participated in this study (61.5 per cent) were not aware of special provisions being made for the college-bound student in home economics in their states. The remaining 38.5 per cent had knowledge of some arrangements having been made in the high schools of their states for this group of students. No one of the group knew of an instance where college-bound students were placed in special classes in home economics. The following methods of providing for the college-bound students were designated: four supervisors indicated that college-bound students with already heavy schedules were allowed to take home economics as a fifth subject; three knew of instances where summer school courses in home economics were introduced as electives for the students who planned to major in home economics in college. Other means of providing for these students which were reported

by one supervisor in each case were: adapting home economics courses already set up to meet the needs of the college-bound student; and encouraging the college-bound student to enroll in home economics courses which are offered as electives.

The supervisors were requested to indicate whether they knew of provisions in their respective states for talented students to accelerate their high school program in home economics toward advanced placement in college home economics. Two of the thirteen respondents reported that they knew of such provisions. Of the two who gave this report, only one knew of any arrangement between the high schools and the colleges involved to provide for the students by advanced placement in college home economics courses.

More than one-half of the college seniors who cooperated in this study (54.0 per cent) reported that they were encouraged to take home economics in high school in preparation for the college home economics program (Table XVII). Home economics teachers and members of the student's family were the persons most frequently mentioned as being responsible for having given this encouragement (Table XVIII).

#### Practices Relating to Science Courses

The college seniors tended to believe that they received less encouragement to include science in their high school program in preparation for college home economics than was true in the case of high school homemaking. Only one-third of the group (33.6 per cent) indicated that they were advised to pursue such a course (Table XVII). The persons most often mentioned as having encouraged the students to take courses

TABLE XVII  
 RESPONSES OF 113 COLLEGE HOME ECONOMICS SENIORS  
 CONCERNING CERTAIN ASPECTS OF HIGH  
 SCHOOL GUIDANCE, 1961

Question	Yes		No		Do not remember	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Were you encouraged to take home economics in high school in preparation for the college home economics program?	61	54.0	42	37.2	10	8.8
Were you encouraged to take science in high school in preparation for the college home economics program?	38	33.6	65	57.5	10	8.8
Were you encouraged to take mathematics in high school in preparation for the college home economics program? <sup>a</sup>	20	17.7	79	69.9	13	11.5

<sup>a</sup>One student failed to respond.

TABLE XVIII

REPORT BY 113 COLLEGE SENIORS CONCERNING PERSONS RESPONSIBLE  
FOR ENCOURAGEMENT TO TAKE CERTAIN HIGH SCHOOL  
SUBJECTS AS PREPARATION FOR THE STUDY  
OF COLLEGE HOME ECONOMICS, 1961

Persons who encouraged students	Subject-matter fields		
	Home economics	Science	Mathematics
High school principal or superintendent	4 <sup>a</sup>	6	2
Teachers	5	16	12
Home economics teachers	38	18	4
Guidance director	4	4	
Home economics supervisor	1		
Home demonstration agent	5	2	1
Parents, family	26	13	5
Friends, home economics graduates	6	3	
College personnel		1	

<sup>a</sup>Numbers signify the number of students.



in science were home economics teachers, teachers, and parents or family, in that order (Table XVIII). Very few of the students indicated that either the high school principal or the guidance director encouraged them to include high school science in their program in order to better prepare them for the study of home economics in college.

In contrast to the beliefs of the students that they received little encouragement to take high school science in preparation for the study of home economics in college, more than half of the state supervisors indicated that there is a tendency in the high schools of their states to encourage prospective college home economics students to include biology, chemistry, and general science in their high school programs (Table XIX). It should be remembered that several years have passed since the students who participated in this study were enrolled in high school. A reasonable assumption might be that greater stress is being placed upon the value of science for all college-bound students, including those who plan to major in home economics, than was true five or six years ago.

Several of the supervisors pointed out that general science and/or biology were required for high school graduation and not specifically with the college home economics program in mind. No tendency to encourage college-bound students in home economics to take high school physics was indicated. Data beyond that summarized in the table indicated that chemistry, generally an elective subject, and biology, which may or may not be an elective, were looked upon by the greater number of educators as important in the preparation of students for college home economics study.

TABLE XIX

RESPONSES OF THIRTEEN STATE SUPERVISORS OF HOME ECONOMICS  
EDUCATION CONCERNING GUIDANCE PRACTICES OF HIGH  
SCHOOLS AS THEY RELATE TO SCIENCE AND  
MATHEMATICS FOR THE COLLEGE-BOUND  
HOME ECONOMICS STUDENT, 1961<sup>a</sup>

Question	Yes		No	
	Number	Per cent	Number	Per cent
Are you aware of any tendency in the high schools of your state to encourage students to take the following science courses, either required or elective, in preparation for the college home economics program?				
General science	7	53.8	4	30.8
Chemistry	7	53.8	3	23.1
Biology	8	61.5	3	23.1
Physics	1	7.7	6	46.2
Are you aware of any tendency in the high schools of your state to encourage college-bound students in home economics to include the following mathematics courses, either required or elective, in their high school program?				
Arithmetic	3	23.1	4	30.8
Algebra	8	61.5	3	23.1
Plane geometry	5	38.5	3	23.1

<sup>a</sup>Percentages will total less than 100 since supervisors did not respond to all items.

The participating college seniors in this study were asked to indicate the kind and amount of science they had taken in high school and its value to them in the study of a specific home economics area, foods and nutrition. An examination of the data in Table XX will reveal that 84.1 per cent of the students reported that they had had two or more years of science in high school. More than four out of five students (83.2 per cent) had studied high school biology, while 68.1 per cent indicated that they had taken general science and chemistry as high school subjects. A very small percentage of the seniors (6.2 per cent) reported having studied high school physics. Further analysis of the data in Table XX will show that 55.5 per cent of the students believed high school science courses to have been of some or much value in the study of college foods and nutrition. On the other hand, more than four out of ten respondents signified that they could see little or no value in the high school science courses as affecting foods and nutrition courses in college. It might be assumed that college teachers of foods and nutrition courses fail, in some instances, to structure their courses in such a way that the student's background in science is used.

#### Practices Relating to Mathematics Courses

College seniors were asked whether they were encouraged to take high school mathematics in preparation for the college home economics program. From the replies it appeared that little emphasis was placed upon the study of mathematics as it was related to the college home economics program. Fewer than one-fifth of the students reported that they received any encouragement to take mathematics (Table XVII). The

TABLE XX

RESPONSES OF 113 COLLEGE HOME ECONOMICS SENIORS CONCERNING  
HIGH SCHOOL SCIENCE AND ITS VALUE TO COLLEGE  
COURSES IN FOODS AND NUTRITION, 1961

Question	Number	Per cent
How much science did you take in high school?		
None	3	2.6
One year	15	13.3
Two years	48	42.5
More than two years	47	41.6
What science courses did you take in high school? <sup>a</sup>		
General science	77	68.1
Biology	94	83.2
Chemistry	77	68.1
Physics	7	6.2
To what extent were your high school science courses of value to you in college courses in foods and nutrition?		
Much	22	20.0
Some	39	35.5
Little	37	33.6
None	12	10.9

<sup>a</sup>One Virginia student had taken a course called Advanced Science.

persons most often responsible for giving this encouragement were the teachers (Table XVIII).

The state supervisors of home economics education indicated little awareness of a tendency in the high schools toward the encouragement of students to include mathematics in their high school program of studies in preparation for college work in home economics (Table XIX). Although a number of the supervisors checked "yes" to the question regarding this tendency, it was explained in most instances that certain mathematics courses were required for graduation or for college entrance, and not particularly as preparation for the college program in home economics.

Table XXI presents the data obtained from college home economics seniors concerning the mathematics courses taken in high school and the value placed upon these courses by the students as they relate to college courses in foods and nutrition. It was reported that 92 per cent of the students had taken as much as two years of high school mathematics, with 55.7 per cent having taken more than two years. With the exception of one student, all respondents indicated high school enrollment in first-year algebra, while approximately three-fourths of the group so indicated for Algebra II. One-half of the students had taken plane geometry. Four students reported having taken trigonometry in high school. Other courses mentioned by two and three respondents, respectively, were general mathematics and business mathematics. More than one-half of the students indicated that high school mathematics courses were of "some" or "much" help in college courses in foods and nutrition. Fifteen per cent of the students attached no value to high school courses in mathematics as they

TABLE XXI

RESPONSES OF 113 COLLEGE HOME ECONOMICS SENIORS CONCERNING  
HIGH SCHOOL MATHEMATICS AND ITS VALUE TO COLLEGE  
COURSES IN FOODS AND NUTRITION, 1961

Question	Number	Per cent
How much mathematics did you take in high school?		
One year	9	8.0
Two years	41	36.3
More than two years	63	55.7
What mathematics courses did you take in high school? <sup>a</sup>		
Arithmetic	30	26.5
Algebra I	112	99.1
Algebra II	84	74.3
Plane geometry	57	50.4
Solid geometry	3	2.7
To what extent were your high school mathematics courses of value to you in college courses in foods and nutrition?		
Much	16	14.2
Some	46	40.7
Little	33	29.2
None	18	15.9

<sup>a</sup>Four students had taken trigonometry, two general mathematics, and three business mathematics.

affected college foods and nutrition courses.

### General Practices

The supervisors were requested to indicate the type of high school program which, in general, was being recommended in their respective states for those students of home economics who planned to major in home economics in college. One respondent reported that the program in her state varied from school to school. The majority of the supervisors indicated that the program for college-bound home economics majors was the same as that for other college-bound students, and that no special guidance was given to the future home economics major.

The practices as to the amount of high school homemaking taken by the average college-bound student in home economics appeared to be at variance with the opinion of the supervisors that college students in home economics would benefit from having had more than two years of home economics in high school (Table XV, page 89). The supervisors tended to report that two years of homemaking were completed by most of the college-bound students in home economics. One supervisor reported that prospective home economics majors were advised against taking more than two years of home economics in high school in order to have time for science and mathematics. It was indicated that courses in home economics are elective courses with the occasional exception of a one-year required course. Girls interested in further studies in this field are encouraged to choose electives from among home economics or related courses, as reported by one supervisor. Other respondents indicated that such recommendations as the following were being made to those

students planning for college home economics work: two or three years of science; two years of algebra; and five subjects each year in grades ten, eleven, and twelve, including one or two years of home economics, as much science and mathematics as possible, one year of typewriting, and some economics and sociology if possible.

It appeared from the data submitted by the home economics seniors in this study that, in many instances, high school course patterns were affected by the decision while still in high school to major in home economics in college. Three-fourths of the number who reported having decided upon home economics as a college major before the senior year in high school indicated that this decision was taken into consideration when planning the high school program of courses. Various ways in which the high school program was affected were listed by the students. Eighteen of the sixty-six students in this group (27 per cent) stated that additional courses in home economics were taken. Such comments as the following were made:

I took home economics in addition to other academic subjects, carried a 6-class load.

I used study hall for home economics classes.

I took all of the home economics classes that were offered.

I chose to be active in F H A as well as the 4-H Club, and to take all the home economics offered.

More advanced home economics courses were scheduled.

I took Home Economics III instead of solid geometry.

I was allowed to "help" in second year home economics class, received grade but no credit.

Approximately four out of ten of the students indicated that more



science courses were included in the high school program as a result of the decision to major in home economics in college. Nine of the sixty-six students (13.6 per cent) reported an increase in the number of mathematics courses taken. Three students mentioned foreign language, indicating some relationship between the inclusion of this subject in their high school program and their intention to study home economics in college. It should be recalled that 19.5 per cent of the administrators favored a foreign language as an appropriate elective for the college-bound student in home economics. The following are some of the comments made by the students:

I didn't take as many vocational subjects; instead I took three years of mathematics and three years of science.

I rearranged courses in junior and senior years to get in all science and mathematics courses needed.

I took physics instead of economics.

I took chemistry which I would not have taken otherwise and worked hard at it.

I took chemistry instead of solid geometry and trigonometry.

I took three years of mathematics and a foreign language.

I took all language, science, and mathematics I could.

That several of the respondents were conscious of some inadequacies in their high school preparation for college home economics seemed apparent in the following comments:

I wish I had been encouraged to take more science.

I didn't take any mathematics except algebra, was told I wouldn't need any more.

I wish I had taken typing instead of geometry, it would have been more valuable.

Home economics program was dated--had only foods and clothing.

My high school had a poor home economics program.

C. POLICIES AND PRACTICES REGARDING THE PROVISIONS  
IN COLLEGE FOR HOME ECONOMICS STUDENTS

College freshmen are usually placed in beginning home economics courses without regard to home economics background, according to the report of the forty-six administrators who cooperated in this study (Table XXII). Although more than half of the respondents (56.4 per cent) indicated that such was the practice in their situation, many of them expressed dissatisfaction with the plan. Such comments as "this is what actually happens, not necessarily what we wish" is indicative of a rather general group opinion.

In fewer than one out of five (17.4 per cent) of the institutions surveyed were students placed in different sections of beginning courses on the basis of background experience in home economics (Table XXII). The reasons most often cited for this situation were: (a) small enrollment making it impossible to offer more than one section; (b) lack of effective testing instruments for determining the ability of students; (c) dissatisfaction with the plan after trying it; and (d) local circumstances which make such placement practices impossible.

The criteria most often used by those who reported sectioning students in beginning classes according to home economics background were pretest, high school record, and conference with student. In general, at least two of the above criteria were used in combination. More than one-fourth of the administrators (28.3 per cent) indicated that the results of

TABLE XXII

PRACTICES OF COLLEGE DEPARTMENTS OF HOME ECONOMICS IN THE  
 PLACEMENT OF HOME ECONOMICS FRESHMEN AS REPORTED  
 BY FORTY-SIX ADMINISTRATORS, 1961

Practice	Number <sup>a</sup>	Per cent
Students are placed in beginning courses without regard to home economics background.	26	56.4
Students are placed in different sections of beginning courses on the basis of background experiences in home economics.	8	17.4
Students with a strong background in certain areas of home economics are given advanced placement standing in those areas.	10	21.7

<sup>a</sup>Two administrators did not respond.

a pretest and a conference with the student were the basis upon which freshmen were placed in home economics classes. Approximately 15 per cent of the respondents reported using the high school records and a student-teacher conference. Another 15.2 per cent of the group indicated that pretests alone were used. The following additional criteria were mentioned by some few administrators: recommendation from the high school teacher, mental ability test scores, and home and/or 4-H Club experiences.

The only areas in which pretests were reported to have been used for college placement purposes were foods, nutrition, textiles, and clothing (Table XXIII). More than one-third of the administrators reported that both pencil-and-paper and performance tests were used to determine the ability of students in the area of clothing. In some instances (8.7 per cent), the written test alone was used. Saddler (56, p. 45) found that if the pencil-and-paper section and the practical section of the test were used together, better prediction of the student's knowledge and ability could be made than if either section of the test were used alone.

Several methods have been used in the past in an attempt to measure a student's previous experience and knowledge in the area of food preparation; none of these methods has been reported as being completely successful. A written examination has most frequently been used for measuring subject matter knowledge. With this type of examination, a wide area of subject matter can be covered but the results give little or no information as to the student's manual skill in food preparation (66, p. 2). Colburn (17) pointed out that the typical paper-and-pencil

TABLE XXIII

RESPONSES OF FORTY-SIX ADMINISTRATORS OF COLLEGE DEPARTMENTS  
OF HOME ECONOMICS REGARDING THE TYPE OF PRETEST USED  
FOR PLACEMENT PURPOSES IN VARIOUS AREAS  
OF HOME ECONOMICS, 1961<sup>a</sup>

Area	Type of pretest					
	Pencil-and-paper		Performance		Oral	
	Number	Per cent	Number	Per cent	Number	Per cent
Foods	15	32.6	9	19.6	2	4.3
Nutrition	6	13.0	1	2.2	1	2.2
Clothing	18	39.1	16	34.8	3	6.5
Textiles	2	4.3	1	2.2	0	
Child development	0		0		0	
Home management	0		0		0	
Related arts and crafts	0		0		0	

<sup>a</sup> Twenty-two of the respondents indicated that no pretests were used for placement purposes in their departments.

test has little value in measuring habits, attitudes, and feelings. Likewise, they do not adequately measure skills needed in the actual preparation of food. In none of the studies reviewed by Wangsgard (66) did the author indicate that the written test alone had proved to be a valid and reliable criterion for judging a student's knowledge, understanding, and skill in the area of foods.

Approximately one-third (32.6 per cent) of the administrators who cooperated in the present study stated that pencil-and-paper tests were used as a criterion for placing students in beginning foods classes. Of this group, eight (17.4 per cent) depended upon the written test alone for information regarding the student's ability, while only seven (15.2 per cent) used a combination of a written plus a laboratory test. Two of the respondents indicated that the practical test alone was employed as the criterion. Several administrators stated that the plan of sectioning classes had been abandoned for lack of satisfactory tests. The tendency to use only one type of pretest and to feel dissatisfied with the results seems to substantiate the evidence presented by Wangsgard (66), that adequate and valid criteria for placement in foods classes requires the use of both a written and a practical examination.

It should be noted that relatively few of the administrators (13.0 per cent) reported the use of pretests for placement in nutrition classes (Table XXIII). It will be recalled that almost one-third of the students who participated in this study (31.9 per cent) expressed the opinion that unnecessary duplication of subject matter occurred in the first college course in nutrition (Table IV, page 60). It appears probable that less

attention has been given to a study of the possibility of duplication in this area. In reporting the proceedings of a conference attended by college teachers of foods and nutrition, Hussemann (37) stated that the consensus seemed to be that pretests are more needed for foods courses than for nutrition courses, although some people felt that there was equal need for pretesting students enrolled in nutrition courses.

It is encouraging to note that qualified home economics students are being allowed to test out of beginning courses in some institutions. This trend is in line with the suggestions made by Arny (4) and Dearing (23) that colleges grant advanced standing to high school graduates who have demonstrated their knowledge in a given field. In the present study, more than one out of five respondents (21.7 per cent) stated that students with a strong background in certain areas were given advanced placement standing in those areas (Table XXII). Clothing and foods were the areas mentioned by the respondents.

The administrators tended to emphasize again and again the need for valid placement tests. That the tests or other criteria which had been used for advanced placement had proved unsatisfactory appeared to be evident in the following comments: "We tried the plan but were not satisfied"; "We are granting advanced placement in foods and clothing but haven't been too pleased with the results"; "Have had little success with the plan"; and "The practice of granting advanced placement to able students would be advisable provided effective tests could be made available."

D. OPINIONS REGARDING THE ADEQUACY OF COLLEGE  
PROVISIONS FOR HOME ECONOMICS STUDENTS

The administrators who cooperated in this study held diverse opinions regarding the adequacy of the home economics program in their respective colleges for the student with a strong pre-college background in home economics. Almost one-fifth of the administrators (17.4 per cent) said definitely that they did not believe their home economics program made sufficient provision for such a student, and another 32.6 per cent indicated that they were uncertain in this regard. Several respondents stated that very few freshman college students had a strong background in home economics, but that more advanced courses were needed to provide for those few. Approximately four out of ten administrators (39.1 per cent) believed that their present curriculum is adequate for those students who come to college with a strong home economics background. It will be recalled that 21.7 per cent of the forty-six administrators indicated that qualified students in their colleges were allowed advanced placement in certain areas of home economics (Table XXII).

In general, the administrators appeared to be dissatisfied with the placement procedures they were using with college freshmen in home economics. More than two-thirds of the group (69.6 per cent) answered "no" to the question, "Do you feel satisfied with the present placement procedure in your department?" The tendency to point out the inadequacies surrounding their present practices and to recommend changes seemed to indicate wide interest in the problem.

Without exception, the respondents who indicated that they were



not satisfied with their present placement practices suggested changes which they would like to put into use. Recommendations thus made included the following: (a) develop sound pretesting devices, (b) revise the pretests now in use, (c) construct tests in areas other than clothing, and foods and nutrition, (d) schedule two sections of a course parallel in order to group students according to need, (e) revise the curriculum to include sections for advanced students, (f) increase the number of courses offered to provide for the superior students, (g) obtain additional laboratory facilities to provide for students with different abilities and experiences, (h) minimize the laboratory hours so that students with background experience and adequate knowledge in specified areas may move on into advanced courses, (i) continue examining core curriculum courses to see where duplication exists and the degree to which courses are college level, (j) improve counseling services, and (k) expand Honors Program whereby talented students may substitute an Honors course for a regular course.

The hypothesis that students enrolled in the college home economics curriculum are not provided for adequately in terms of their previous experience in home economics seems to have been given some support by the opinions of this group of administrators.

#### E. CHAPTER SUMMARY

This chapter has presented (a) the opinions of college administrators of home economics and state supervisors of home economics education from twelve southern states and Puerto Rico in regard to some of

the articulation problems between high school and college home economics programs, and (b) some policies and practices of high schools and colleges in this region concerning articulation as reported by college administrators, state supervisors, and college home economics seniors.

Both the administrators and the supervisors tended to believe that it is advantageous to the student majoring in college home economics to have had two years of high school homemaking. The supervisors tended to favor the inclusion of more than two years of high school home economics in the program of the college-bound home economics student. The administrators, on the other hand, tended to place less emphasis upon high school homemaking, and to favor a strong academic program including two to three years of science and a minimum of two years of mathematics. Whereas more than three-fourths of the supervisors reported that they did not believe the high school program in home economics should be any different for the college-bound student, the administrators tended to indicate that it could be.

The majority of the state supervisors knew of no particular plans in the high schools for providing for the college-bound student in home economics. The college seniors tended to believe that they received more encouragement in high school to take homemaking in preparation for the college home economics program than was true in the case of either science or mathematics. It appeared that, in most instances, the science and mathematics courses taken by the students were those required for high school graduation or for college entrance, and not with the college home economics program in mind.

Only two of the thirteen supervisors knew of provisions for the talented students to accelerate their high school program in home economics toward advanced placement in college home economics. Of the two, one supervisor reported knowledge of arrangements between the high schools and colleges involved to provide for those students by advanced placement in college home economics courses.

A majority of the administrators reported that college freshmen were placed in beginning home economics courses without regard to home economics background. In fewer than one out of five of the institutions surveyed were students placed in different sections on the basis of background experience in home economics. The administrators tended to cite the lack of effective testing instruments for determining the ability of students as being responsible for this situation.

Approximately one out of five administrators reported that their institutions permitted qualified students to test out of beginning courses in foods and clothing. The administrators tended to express dissatisfaction with the results experienced in attempts at advanced placement to date and to emphasize again and again the need for valid placement tests.

In general, the administrators indicated that they were not satisfied with present procedures in their respective institutions for the placement of home economics freshmen. The tendency to point out the inadequacies surrounding their present practices and to recommend changes seemed to indicate wide interest in the problem.

## CHAPTER V

### THE PRESENT STATUS OF HIGH SCHOOL-COLLEGE ARTICULATION IN HOME ECONOMICS AS REPORTED BY TWO SELECTED GROUPS OF HOME ECONOMISTS

It has been shown earlier in this report that educators in various fields of study have recognized that the inarticulation of subject matter between the high schools and colleges is a problem, that they have made suggestions as to methods of dealing with the problem, and that they have attempted to solve the problem in a variety of ways. In the present study, the investigator surveyed a group of college administrators of home economics and the state supervisors of home economics education in twelve southern states and Puerto Rico in an effort (a) to obtain opinions regarding the need for better articulation between the high school and college programs of home economics and the ways of meeting this need, and (b) to find out what efforts were being made in the field of home economics to bring about better articulation practices between the two instructional levels. This chapter presents the findings relating to the above purposes.

#### A. NEED FOR BETTER ARTICULATION

The administrators and the supervisors who participated in this study were in almost complete agreement regarding the need to improve articulation between the high school and the college programs in home economics (Table XXIV). All of the thirteen supervisors expressed the opinion that this need existed, and 82.6 per cent of the administrators

were of the same opinion. None of the group stated definitely that they did not believe such a need existed, although some uncertainty was expressed by six of the administrators.

The tendency of the respondents to take advantage of space in the questionnaire for additional comments suggested that there was a decided interest in this problem. The following comments appeared to reflect the feelings of the group:

A vital problem for teacher education.

A very real problem--one about which little is being done.

Much time needs to be spent on this problem.

To be commended on topic for study--high school and college teachers recognize the problem.

Research is needed on articulation between high school and college.

One of the most important problems in the whole of home economics. Articulation of high school and college is essential to the future development of each. Much study and joint effort in planning is needed for its success.

The relationship between high school-college duplication of subject matter and the lack of proper articulation at the two levels has long been recognized. The home economists who cooperated in the present study tended to agree with Hochman (36) that duplication of course content does take place between high school and college courses, and that this duplication represents an area of waste in the American education system. To the question, "Do you believe there is justification to the report by some college students that wasteful duplication exists between the college and the high school programs in home economics?" more than two-thirds of the administrators (68.2 per cent) and

TABLE XXIV

OPINIONS OF ADMINISTRATORS OF COLLEGE DEPARTMENTS OF HOME  
ECONOMICS AND STATE SUPERVISORS OF HOME ECONOMICS  
EDUCATION CONCERNING ARTICULATION BETWEEN  
HIGH SCHOOL AND COLLEGE PROGRAMS  
IN HOME ECONOMICS, 1961

Question	<u>Administrators<sup>a</sup></u>		<u>Supervisors</u>	
	N=46		N=13	
	Number	Per cent	Number	Per cent
Much is being said currently about the need to improve articulation between the high school and college programs in home economics. Do you agree that this need exists?				
Yes	38	82.6	13	100
No	0		0	
Uncertain	6	13.0	0	
To what extent do you believe cooperative effort is being exerted toward meeting this need?				
Much	2	4.3	0	
Some	30	65.2	11	84.6
Very little	12	26.1	2	15.4

<sup>a</sup>Two administrators failed to respond, one remarking that she had no information.

over three-fourths of the supervisors (76.9 per cent) answered in the affirmative (Table XXV). Among those who answered "yes" to the above question, a large majority of both administrators (65.2 per cent) and supervisors (84.6 per cent) indicated that they believed "some" wasteful duplication occurs (Table XXV). It was cited earlier that approximately three-fourths of the students who participated in this study expressed the opinion that unnecessary duplication of experiences between the high school and college programs took place in the area of foods and nutrition (Table IV, page 60). The fact that large majorities of the participating administrators, supervisors, and students in this investigation stated the belief that wasteful duplication takes place in home economics courses seemed to give evidence of the need for better articulation. This evidence tends, also, to support the hypothesis that there is a tremendous amount of duplication between the high school and college courses in home economics.

Both the administrators and the supervisors tended to be of the opinion that clothing construction and food preparation were the areas of home economics in which duplication is more likely to occur. Of the two areas, clothing was specified by a higher proportion of the respondents (67.4 per cent) than was foods (43.5 per cent). In support of their belief that more duplication occurs in these two areas than in others, the respondents made such comments as:

More time is given to foods and clothing at the high school level.

Foods and clothing are always included in any home economics program at the high school level.

Duplication could hardly occur in any of the areas except clothing

TABLE XXV

RESPONSES OF ADMINISTRATORS OF COLLEGE DEPARTMENTS OF HOME  
ECONOMICS AND STATE SUPERVISORS OF HOME ECONOMICS  
EDUCATION TO QUESTIONS CONCERNING  
DUPLICATION, 1961

Question	<u>Administrators</u> N=46		<u>Supervisors</u> N=13	
	Number	Per cent	Number	Per cent
Do you believe there is justification to the report by some college students that wasteful duplication exists between the college and the high school programs in home economics? <sup>a</sup>				
Yes	30	68.2	10	76.9
No	7	15.9	2	15.5
Uncertain	4	9.1	1	7.6
If <u>yes</u> , to what extent do you believe such duplication exists?				
Much	3	10.0	0	
Some	26	86.7	10	100.0
Very little	1	3.3	0	

<sup>a</sup>Percentage will total less than 100, since three administrators did not respond to this question.



and foods. These are the only areas in which the units are repeated each year and the ones most stressed--should not be so.

Foods and clothing are the areas in which high school home economics teachers have had more work in college.

Curriculum guides have frequently emphasized clothing construction and food preparation.

The only place where duplication could exist is foods and clothing. Subjects as family economics, child development and family relationships, and others are taught for such a short time and by teachers not particularly qualified themselves, so the student has virtually no preparation for solid college or university courses in these fields.

More duplication occurs in clothing, due to the "lag" in concept of clothing practices. Skills are, to a great extent, still being emphasized in both high schools and colleges. The poorly prepared high school teacher uses clothing experiences which "eat up" time as a crutch in teaching. The high cost of food and nutrition classes also contributes to the over-emphasis of clothing at the high school level.

Several of the respondents seemed to indicate by such comments as the following that college courses supplement rather than duplicate the work done in high school:

The student may be able to make basic foods as biscuits, pie or other, but have poor technic with equipment use and in service of the food, or fail to know the science behind the process.

I find that students have had limited experience in food preparation in high school. There might be repetition in the study of food principles, little duplication in skills. The duplication of skills is more likely to reflect home experiences than school experience.

Some students who come to college home economics classes have made wool suits and many outfits, yet they cannot design an outfit or write very intelligently about the subject matter. In college work there can be little duplication except in actual construction, and there should be much new to learn here too.

Other areas mentioned by individuals or by small numbers of respondents as those in which duplication might occur were health and home

nursing, child development and family relations, personal appearance and grooming, elementary nutrition, management of family and personal resources, and home furnishings. It was stated that a twelfth grade family living course taught by an excellent teacher might cover the same material as a college course in family relations. One supervisor felt that the content of an advanced high school course, "The Home," could very easily be duplicated in the college study of home furnishings.

#### B. SUGGESTED WAYS OF IMPROVING ARTICULATION

The suggestions made by the cooperating administrators and supervisors for improving high school-college articulation in home economics tended to fall into four categories: (a) closer cooperation of high school and college personnel in planning the home economics programs, (b) improvement in the counseling services at the high school level, (c) development of valid pretests for use at the college level, and (d) the establishment of standards of performance, basic facts and principles for home economics courses at the different levels.

##### Closer Cooperation of High Schools and Colleges

The recommendation made by the greatest number of respondents concerned the necessity of closer cooperation between those who are engaged in high school home economics work and those who direct and/or teach home economics at the college or university level. There was a decided tendency to agree with the views of Poppendieck (55) that corrections in the problems of curricular articulation cannot be made by teachers on one side of the transition alone. Although the greater number of respondents

did not elaborate on such recommendations as "closer coordination of high school programs and college home economics courses," there were some who did. It was believed by two of the supervisors that much could be gained by more cooperation in the planning and use of the curriculum study guides.

Other suggestions were:

Involvement of teaching staff at both levels in a self-study of current offerings;

Periodic evaluation of the home economics teacher training programs made jointly by members of the home economics staff of the institution and of the department of education in the light of pertinent changes and needs of the home economics program in the secondary schools;

Closer contact of teachers of subject matter areas and home economics graduates through study group meetings and/or through visits to home economics departments in the secondary schools, to determine strengths and weaknesses in the work and to help the home economics teachers with related problems.

The preceding suggestions appear to be in agreement with the statement of Hochman (36) that colleges and high schools can solve the problem of wasteful duplication by looking for solutions together in regular meetings over a period of time.

The tendency of colleges to place the blame for weak students on the high schools, and a similar tendency of high schools to blame the colleges for poorly prepared teachers has been recognized as an obstacle to reaching the goal of better articulation between schools and colleges. One of the supervisors saw this tendency as a real stumbling block, and asserted that the practice should be stopped--that both groups should recognize and assume full responsibility for solving the current problems and eliminating future problems. Dearing (23) expressed similar feelings by suggesting that a first step in improving articulation

is the abandonment of the idea among college teachers that college students need to start at the beginning.

An observation of one of the administrators that success in any attempt at improvement in articulation rests upon competent, alert staff members who are willing and well-informed concerning possible changes seemed to be substantiated by Medsker (44). It was the conviction of Medsker that unless the parties involved believe it is necessary to remove the obstacles in students' paths, and unless they want to do something about it, obviously there will be no workable process.

#### Improvement in High School Counseling

Some of the participants in this study stated the belief that progress could be made in effecting a smoother transition from high school to college in home economics by improving the counseling services at the high school level. It was indicated that there is a lack of understanding among high school counselors regarding the objectives and the scope of the college home economics program. As previously mentioned, relatively few of the college seniors in this study indicated that they had received any guidance in high school as regards three subjects (home economics, science, and mathematics) generally considered by home economists as being appropriate electives for the college-bound student in home economics (Table XVIII, page 98).

#### Development of Valid Pretests

Administrators and supervisors in the present study tended to believe that much of the inarticulation in home economics between the

high schools and the colleges could be eliminated by the use of valid tests. These opinions have been supported by those of other educators. Nelson (49) recommended pretesting to determine the most advantageous placement of able students. Peters (54, p. 113) believed that wasteful repetition of material already mastered by a student can be reduced if appropriate placement, through testing, can be made. Arbolino (3, p. 150) stated that the best way to establish and maintain curricular articulation is to ensure the proper placement of every student in every subject.

An administrator in the present study spoke of the necessity of developing sound pretesting devices so that the well-prepared college student in home economics can progress more rapidly than the usual four-year curriculum allows, and can have the opportunity to enrich his program and to satisfy more of his individual needs. This same view was expressed in 1953 by Army (4), as she envisioned the advantages of an advanced placement plan for superior students in home economics.

Kraushaar (41) stated that one of the objectives of the Commission on Mathematics, a commission of the College Entrance Examination Board, was to provide appropriate tests to certify the student's knowledge in the field. Evidence of a desire among the participants of the present study for such tests in the field of home economics was shown by this inquiry: "Is there some type of standard test which might be used in all colleges for pretesting?"

#### Establishment of Standards

Throughout this study many participants have tended to express the opinion that all attempts at improved articulation will prove

ineffectual until the field of home economics adopts standards of performance and of basic facts and principles which are to be expected at the different levels. The futility of trying to develop set tests for placement in college courses against the lack of standardized requirements for the different years of high school homemaking was indicated. The following comments seemed to disclose the feeling of many respondents in regard to (a) the lack of and (b) the need for standardization:

I feel inadequate as to what to expect from high school graduates.

I think it is important that the college and high school programs be correlated toward clear-cut, well-formulated objectives.

The home economics supervisory staff and the approved teacher training institutions should maintain cooperative relations toward more effective teaching of home economics in the schools. They should establish together standards to be maintained at the different levels of instruction.

High school teachers should require more of pupils.

Colleges must teach home economics on a higher level, with greater emphasis on technical and scientific information.

I believe that it is unfortunate that we do not have certain levels of performance and facts required in the secondary schools similar to those required by other subject matter areas so that, if the courses are well taught on the secondary level, a set test can be developed and used in the placement of these students on the college level.

A group of secondary school officials (30, p. 12) stated that higher institutions, in cooperation with secondary schools, had not clearly defined the nature of the competencies required for smooth transition from high school to college. The recommendation by Cook (20, p. 168) that high schools and colleges prepare and follow descriptive statements of subject content and instructional procedures in the courses which are required at both levels tends to substantiate the opinions of some of the participants in the present study.

### C. EFFORTS MADE TOWARD IMPROVED ARTICULATION

School and college personnel are fully aware that within each discipline the passage from school to college should be coordinated and continuous, in the opinion of Arbolino (3), but that little is being done of what is known to be right. The findings of this investigation tend to emphasize the reality of this situation with respect to home economics. As reported earlier, the majority of the home economists who participated in this study expressed the belief that improvement is needed in the articulation practices between the high school and college programs in home economics. Almost one-fourth (23.7 per cent) of this same group indicated that "very little" cooperative effort was being exerted to bring about this improvement. The majority of the administrators (65.2 per cent) and of the supervisors (84.6 per cent) tended to believe that "some" effort of a cooperative nature was being made to facilitate the transition of students from the high school homemaking program to the home economics program in college. Only two administrators (3.4 per cent) felt that "much" was being done in this direction. The report of the large majority of the combined group of administrators and supervisors (93.2 per cent) that some or very little was being done about the problem of high school-college articulation in the field of home economics tended to be in agreement with the opinion of Vaughan (65, p. 4), that little in the nature of a direct attack on the problem had been undertaken.

It seemed reasonable to suppose that those who are the leaders of home economics, namely, the administrators of college departments and the state supervisors of home economics education, would be in a position to

know of cooperative efforts toward improved articulation at the local, state, regional, and/or national level. For this reason, the members of these two groups were asked to cite specific instances of cooperative action which had come to their attention.

Although there were a number of instances cited, the consensus seemed to be that there were not then, nor had there been in the past, any worthwhile efforts directed toward the accomplishment of the goal of good articulation between the secondary schools and the colleges for students of home economics. Such phrases as "some talk--mainly that there is a problem, little actual doing," "discussed at meetings," and "have heard references made to this problem in national meetings," seemed to express the feeling of the majority of the group. Several of the respondents took the opportunity afforded them to give evidence of the lack of good articulation, and of the desire of high school teachers to see the problem attacked: "High school teachers inquire about beginning college courses and of what college teachers think should be given in high school." Similarly, "High school teachers are asking what emphasis and how many units in high school home economics are advised. They seem willing and anxious to work on this problem."

The respondents tended to cite college faculty conferences at the state level; regional and national meetings of college teachers of such subject matter areas as foods and nutrition, and clothing; and the high school state teachers conference each year as examples of attempts to solve the problem. Such predominantly college or high school conferences are ordinarily attended by some few home economics leaders from the other



instructional level who serve in the capacity of sponsors, co-directors, or consultants. Other examples were: (a) conferences of state supervisors, home economics high school supervisors, and heads of college home economics departments in which a better understanding of what is taught in high school and in college is reached, (b) area in-service conferences composed of high school teachers, teacher educators, student teachers, and some teachers of technical courses in college, and (c) workshops held for college staff and state supervisory staff for the purpose of getting a better understanding of problems. Not a single instance in which high school and college teachers had met for the serious business of looking at course content at the different high school and college levels, and of planning for the continuous progress of students from one educational level to another (2, p. 684) was reported. This fact would lead one to agree with Mills (46) that little in the nature of a direct attack on the problem of curricular articulation had been undertaken. The evidence tends to substantiate the hypothesis that insufficient steps have been taken toward the establishment of policies and practices for eliminating the duplication occurring between the college and the high school home economics programs.

Perhaps the practice in which there had been the greatest amount of active cooperation between high school and college personnel was in the development and the revision of state curriculum guides for high school teachers. Several respondents mentioned that high school and college teachers worked together in this endeavor, while others reported that college teachers studied the high school guides in order to learn

what the high schools were doing and to make constructive suggestions. In addition to this exchange of ideas, one administrator reported that the state supervisory staff of the department of education had examined the home economics curriculum offerings at the university, and had recommended changes and adaptations needed for the better training of homemaking teachers.

The singular position of the college teacher educator to act as coordinator of the high school and college teacher education programs was mentioned. In two of the states surveyed, it appeared that teacher educators in the various colleges were being charged with the responsibility of interpreting the offerings and practices at the high school level to college department heads and teachers of technical home economics courses. The information thus conveyed was used by the college staffs in the determination of what would be repetition and of what should be repeated with emphasis. By this means college courses were designed to supplement rather than to duplicate the high school courses.

It was reported that some college staffs within their own universities or colleges had begun studies dealing with the problem of articulation. One state was reported to have worked on this problem in the area of textiles and clothing for several years, through a committee made up of high school teachers, college instructors, extension service personnel, and others. This committee had prepared statements of beliefs concerning what would be expected of students in this area at various levels and under various conditions. A state-wide cooperative study was reported to have been conducted in another of the states. Further

information regarding this state-wide study was not accessible to the investigator.

It was encouraging to note that some definite plans were being made for future consideration of articulation problems in home economics. It was reported that a seminar dealing with this subject was to be held on a national level in July, 1961, sponsored by the Home Economics Section of the American Association of Land Grant Colleges and State Universities. One of the respondents revealed that her state planned to follow the AALGCSU Seminar with one on a state level. Three other states were reported to have plans whereby college and high school teachers would work together on some of the problems surrounding the transition of home economics students from high school to college. These reports, even though they represented a comparatively small percentage of the participants in the study, tended to provide some evidence that home economics educators were more disposed to do something about the problems of articulation than had been true in the past.

#### D. CHAPTER SUMMARY

This chapter has presented some opinions, suggestions, and observations of two selected groups of home economists concerning the status of curricular articulation in home economics between the secondary schools and the colleges. The three specific topics discussed were the need for better articulation, suggested ways of improving articulation, and efforts made toward improved articulation.

The forty-six college administrators of home economics and the

thirteen state supervisors of home economics education were in almost complete agreement that articulation practices in home economics need to be improved. Only six of the total group reported that they were uncertain concerning this need.

More than two-thirds of the administrators and approximately three-fourths of the supervisors believed that some wasteful duplication of course content occurs between the college and high school programs in home economics. Both groups tended to be of the opinion that clothing construction and food preparation were the areas in which duplication is more likely to occur. A greater number of the respondents believed that duplication occurs in clothing construction than was believed to be true in the case of food preparation. Whereas two-thirds of the group indicated this opinion in regard to clothing, approximately four in ten expressed this belief in regard to food preparation courses.

The respondents tended to believe that closer cooperation between the home economics leaders and teachers at the high school and college levels was a necessary first step in the improvement of articulation between the two instructional levels. Other methods which were suggested for effecting a smoother transition from high school to college in home economics were: (a) improvement in the counseling services at the high school level, (b) the development and use of valid pretests at the college level to determine the most advantageous placement of all home economics students, and (c) the establishment of standards of performance and basic knowledge to be expected of students at the different levels. It was believed by some of the respondents that the establishment of minimum

standards for the various levels in the secondary schools would facilitate the development and use of a standardized test for the placement of students at the college level.

The majority of the administrators and supervisors tended to feel that some effort was being made toward improved curricular articulation in the field of home economics. Approximately one-fourth of the respondents reported that they knew of very little that was being done to bring about such improvement. Although a number of instances of cooperative effort were cited, the consensus among the participants in this study seemed to be that there were not then, nor had there been in the past, any worthwhile efforts directed toward the accomplishment of the goal of good articulation between the secondary schools and the colleges for students of home economics. The respondents indicated that there was some talk--mainly that there is a problem--but little actual doing.

The tendency toward the formulation of some definite plans for dealing with the problem of inarticulation in home economics was encouraging. In addition to the planned seminar of the American Association of Land Grant Colleges and State Universities, several states were reported to have made plans whereby college and high school teachers would work together on some of the problems surrounding the transition of home economics students from high school to college.

## CHAPTER VI

### SUMMARY AND CONCLUSIONS

#### A. SUMMARY

The purpose of this study was to compile information and opinions relative to the present status of articulation between the high school and college programs in home economics. It was believed that an analysis of existing conditions might furnish useful data for those individuals or groups concerned with the improvement of articulation practices, to the end that smoother and more effective transition from high school to college for home economics students might result.

Five questions served as guides in making this study: (1) What are the opinions of college seniors of home economics regarding (a) the extent to which there is duplication in college home economics courses of experiences and understandings acquired before college, and (b) the value attached to duplication when it occurs? (2) What are the policies, practices, and procedures of state departments of vocational home economics education regarding provisions in high school for the college-bound student in home economics? (3) What are the policies, practices, and procedures of college departments of home economics regarding placement of home economics freshmen? (4) What are the opinions of college staffs of home economics and of state supervisory staffs of home economics education regarding (a) the need for better articulation between the two instructional levels, and (b) ways of meeting this need? (5) Is there sufficient cooperation between the high school vocational home

economics programs and the programs of college departments of home economics in working toward meeting the challenge of effective progression from one educational level to another?

Four hypotheses were tested in this study: (1) The college student who majors in home economics comes to college with a strong pre-college background in home economics. (2) There is a tremendous amount of duplication between the high school and the college courses in home economics. (3) Insufficient steps have been taken toward the establishment of policies and practices for eliminating the duplication occurring between the college and the high school home economics programs. (4) Students enrolled in the college home economics curriculum are not provided for adequately in terms of their previous experiences in home economics.

Great impetus was given to this study by (a) the general concern over excessive duplication between high school and college programs of study, (b) the criticism that much repetition takes place at these two levels in the field of home economics, (c) the challenge by home economics educators to work toward more efficient educational progress of students, and (d) the apparent lack of organized activity among home economics personnel in attacking this problem.

This study was confined to twelve states in the Southern Region of the United States--Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia--and to Puerto Rico.

The data were collected in the winter of 1961 by means of three

different questionnaires submitted by thirteen state supervisors of home economics education, forty-six home economics administrators of predominantly white colleges and universities approved to train teachers for vocational home economics, and 113 college seniors from selected colleges in Virginia and in Tennessee who had a minimum of two years of high school home economics.

The mean number of years which the student participants spent in high school homemaking was 2.3 years, with more than one-half of the group having taken three or four years of home economics in high school. Membership in the Future Homemakers of America and in the 4-H Club for two or more years was reported by approximately six out of ten and four out of ten students, respectively.

Much duplication in college of selected food and nutrition experiences and understandings was reported by the students. Most of the pre-college experience in this area was obtained in the home and in the high school class. Of the forty-two selected experiences, mean numbers of 24.2 and 15.8 were reported as home and school experiences, respectively. Very few food and nutrition experiences were reported as having been performed in connection with the F H A and the 4-H Club. The students evaluated the instances of duplication in college of pre-college experiences as follows: one-fourth of "no" value; one-half of "some" value; and one-fourth of "much" value. Continued emphasis in college on selected food and nutrition principles was reported to be of some or much value in four out of five instances of repetition.

More than one-half of the students indicated that some or much



unnecessary duplication of course material took place in the introductory college course in food preparation, while almost one-third of the group believed that such was the case in the first nutrition course. In contrast, fewer than one out of ten students felt that the repetition in the meal management course was unnecessary.

Neither the size of the home economics department nor an increase in the number of years of high school homemaking beyond two full years appeared to have had any significant effect upon the amount of duplication reported by the students, or upon the value attached to that duplication.

The administrators and supervisors, as a group, tended to believe that some wasteful duplication existed between the college and the high school programs in home economics. Approximately two-thirds of this group felt that such duplication occurred in the beginning college course in clothing construction, while more than four out of ten respondents believed that unnecessary duplication took place in the introductory food preparation course.

Whereas more than three-fourths of the supervisors reported that they did not believe the high school program in home economics should be any different for the college-bound student, the administrators tended to indicate that it could be.

Both the administrators and the supervisors tended to believe that it is advantageous to the student majoring in college home economics to have had two years of high school homemaking. The supervisors tended to favor the inclusion of more than two years of high school home economics in the program of the college-bound home economics student. The

administrators, on the other hand, tended to place less emphasis upon high school homemaking, and to favor a strong academic program including two to three years of science and a minimum of two years of mathematics.

The majority of the state supervisors knew of no particular plans in the high schools to provide for the college-bound student in home economics. The college seniors tended to believe that they received more encouragement in high school to take homemaking in preparation for the college home economics program than was true in the case of other electives, such as mathematics or science.

Only two of the thirteen supervisors knew of provisions for talented students to accelerate their high school program in home economics toward advanced placement in college home economics. One supervisor reported knowledge of arrangements between the high schools and the colleges involved to provide for those students by advanced placement in college home economics courses.

Most of the administrators reported that college freshmen were placed in beginning home economics courses without regard to home economics background. Less than one out of five respondents reported that students were placed in different sections on the basis of background experience in home economics. The administrators tended to express dissatisfaction with placement procedures for home economics freshmen in their respective institutions, and to cite the lack of effective testing instruments as being responsible for the current situation.

Approximately one out of five administrators reported that their institutions permitted qualified students to test out of beginning courses

in foods and clothing. The administrators tended to express dissatisfaction with the results experienced in attempts at advanced placement to date, and to emphasize again and again the need for valid placement tests.

The administrators and supervisors were in almost complete agreement that articulation between the high school and college home economics programs should be improved. The suggestions made by this group for bringing about this improvement tended to fall into four categories: (a) closer cooperation of high school and college personnel in planning the home economics programs, (b) improvement in the counseling services at the high school level, (c) development of valid pretests for use at the college level, and (d) the establishment of standards of performance, facts, and principles which are expected at the different levels.

The majority of the supervisors and administrators believed that some or very little cooperative effort was being exerted to facilitate the transition of students from the high school homemaking program to the home economics program in college. Although a number of instances of such cooperation were cited, the consensus seemed to be that there were not then, nor had there been in the past, any worthwhile efforts directed toward the accomplishment of effective articulation between the high school and college home economics programs.

## B. CONCLUSIONS

Within the limits of this study the following conclusions relative to the hypotheses seem to emerge:

Hypothesis 1, that the college student who majors in home economics

comes to college with a strong pre-college background in home economics, cannot be accepted as stated because of insufficient evidence. Although the data tended to support the hypothesis in terms of years spent in home economics activities and in the number of pre-college experiences performed in one area of home economics, no information regarding the quality of the training received before college was available.

Hypothesis 2, likewise, must be rejected due to insufficient evidence. While the findings tended to indicate some or much duplication in the food preparation, clothing construction, and elementary nutrition courses, the evidence is not considered sufficient for the acceptance of this hypothesis as stated--that there is a tremendous amount of duplication between the high school and the college courses in home economics.

Hypothesis 3 can be accepted. The findings indicate strong support of the theory that insufficient steps have been taken toward the establishment of policies and practices for eliminating the duplication occurring between the college and the high school home economics programs.

Hypothesis 4, that students enrolled in the college home economics curriculum are not provided for adequately in terms of their previous experiences in home economics, has apparently been substantiated. The data provided little evidence to show that college freshmen were sectioned into homogeneous groups in beginning college courses on the basis of home economics background, or that qualified students were placed in advanced courses in those areas in which proficiency had been shown.

The following general conclusions relative to the articulation of high school and college programs of home economics, as affecting a group

of Southern institutions at both these levels, are based on the results of this study:

1. The articulation between the secondary school and the college or university is slight.

2. Home economics personnel at both the high school and the college levels are aware of the problem of inarticulation.

3. Little in the nature of a direct attack on the problem has been undertaken.

4. There appears to be little communication between the two groups most concerned with the problem, the high school and the college teachers.

5. Some unnecessary and wasteful repetition of course material occurs in home economics courses at the high school and college levels, particularly in clothing construction, food preparation, and elementary nutrition.

6. The size of the college home economics unit makes no appreciable difference in the amount of duplication that takes place at the two educational levels.

7. There is no general agreement regarding the high school course pattern which best equips a student for the study of home economics in college.

8. College-bound students in home economics receive little guidance in high school concerning the choice of electives which will best prepare them for the college home economics program.

9. Too little attention has been given to informing guidance

counselors of the true nature of the home economics curriculums.

10. The high school home economics program does not differentiate between those who are going to college and those who are not.

11. College freshmen are usually placed in beginning home economics courses without regard to home economics background.

12. There is little evidence that talented students are permitted to accelerate their high school program toward advanced placement in college home economics, or that provision is made for advanced placement of such students in college.

13. Attempts in college at placement of students on the basis of experiences and/or ability have proved unsatisfactory in most instances.

14. There is a pressing need for appropriate tests to certify the college freshman's knowledge and ability in the various areas of home economics.

15. An urgent need exists for the establishment of better standards, setting forth the basic minimum of facts, principles, and experiences which are expected of home economics students at the different high school levels.

The foregoing conclusions would seem to merit further investigation.

The data from this study suggest that much broad-scale, cooperative effort needs to be directed to many facets of the problem before definite improvement in the articulation of home economics programs of the secondary school and the college can be expected.

## **BIBLIOGRAPHY**

## BIBLIOGRAPHY

1. Allen, Sara G. and J. W. Harris. "Analysis of Student Records of Home Economics Graduates, University of Tennessee, 1930-34." Unpublished Master's thesis, The University of Tennessee, Knoxville, 1935.
2. American Home Economics Association, Committee on Philosophy and Objectives of Home Economics, "Home Economics, New Directions," Journal of Home Economics, 51:679-85, October, 1959.
3. Arbolino, Jack N. "Establishing and Maintaining Better Curricular Articulation Between Secondary and Higher Education," National Conference on Higher Education, Current Issues in Higher Education, 1961. pp. 148-50.
4. Arny, Clara Brown. Evaluation in Home Economics. New York: Appleton-Century-Crofts, Inc., 1953.
5. Association for Supervision and Curriculum Development. A Look at Continuity in the School Program, 1958 Yearbook. Washington: Association for Supervision and Curriculum Development, 1958.
6. Austin, Charles O., Jr. "Advanced Programs for Able Students," Bulletin of the National Association of Secondary-School Principals, 42:54-57, December, 1958.
7. Bakkie, M. B. "Reconsidering College Teaching of Foods and Nutrition," Journal of Home Economics, 50:759-61, December, 1958.
8. Bernstein, Jacob L. "Midwood High School's Advanced Placement Program," Bulletin of the National Association of Secondary-School Principals, 42:22-23, December, 1958.
9. Bradfield, James M. and H. Stewart Moredock. Measurement and Evaluation in Education. New York: The MacMillan Company, 1957.
10. Bray, Edith. "The Development and Use of a Pencil and Paper Test for Determining Placement of College Students in Clothing Courses and for Measuring Achievement after Instruction." Unpublished Master's thesis, University of Minnesota, Minneapolis, 1949.
11. Budd, Nathan B. "A Study of High School-College Cooperation in Kansas." Unpublished Ed. D. thesis, University of Colorado, Boulder, 1956.



12. Burnside, Lenoir H. "Honor Program of Studies Including Advanced Placement Study," Bulletin of the National Association of Secondary-School Principals, 42:27-31, December, 1958.
13. Butler, Broadus N. "High-School Students and College Credit," School and Society, 87:499, December 5, 1959.
14. Cannon, Helen. "The Influence of High School Homemaking on Achievement in the Beginning Clothing Course at the University of Colorado," Journal of Educational Research, 50:521, March, 1957.
15. Christopherson, Victor A. "Problems in Home Economics," Journal of Higher Education, 28:207-11<sup>†</sup>, April, 1957.
16. Clifford, Paul I. "The Role of Evaluation in the Improvement of Placement and Follow-up in Institutions of Higher Learning," Journal of Experimental Education, 25:37-39, September, 1956.
17. Colburn, Zora Ruth. "Development of Devices Which Might Be Used in the Classification of Freshman Students in Foods Classes." Unpublished Master's thesis, South Dakota State College, Brookings, 1954.
18. Committee on Philosophy and Objectives of Home Economics. "The Home Economics Profession Today," Journal of Home Economics, 51:681, October, 1959.
19. Conant, James B. Education in the Junior High School Years. Princeton, New Jersey: Educational Testing Service, 1960.
20. Cook, Denton L. "High School and College: Some Problems in Articulation," Clearing House, 32:167-68, November, 1957.
21. Cooke, Helen P. "Smooth Bridge between Two Levels," Overview, 1:48-49, July, 1960.
22. Davis, Mildred Jean. "Clothing Placement Tests for Entering Freshmen in the Division of Home Economics at West Virginia University 1948-51, Inclusive." Unpublished Master's thesis, Morgantown, West Virginia, 1952.
23. Dearing, G. B. and others. "How Can the Continuity in the Study of the Language Arts, the Social Sciences, and the Humanities in High School and the First Two Years of College Be Improved?" National Conference on Higher Education, Current Issues in Higher Education, 1960. pp. 77-90.
24. Dudley, David A. "The Advanced Placement Program," Bulletin of the National Association of Secondary-School Principals, 42:1-5, December, 1958.

25. Elicker, Paul E. "Report of Discussion in Section I at the Council's Fortieth Annual Meeting," Educational Record, 39:113, April, 1958.
26. Englestein, Sadie S. and Henrietta H. Miller. "Advanced Work for Gifted Students at Senn High School," Bulletin of the National Association of Secondary-School Principals, 42:32-38, December, 1958.
27. Fels, William C. "Articulation Between School and College," Educational Record, 39:110-12, April, 1958.
28. Finlay, G. C. and others. "How Can the Continuity in the Study of the Natural Sciences and Mathematics in High School and the First Two Years of College Be Improved?" National Conference on Higher Education, Current Issues in Higher Education, 1960. pp. 91-102.
29. Fischer, Louis. "Necessary and Desirable Overlap," Journal of Teacher Education, 11:349-52, September, 1960.
30. Fisher, Lowell B. "An Analysis of Problems of Articulation and Suggestions for Action," North Central Association Quarterly, 35:11-16, July, 1960.
31. Fleck, Henrietta. "An Action Program for Home Economics," Forecast, 76:6-7+, October, 1960.
32. Garrett, Lula D. "Factors Influencing the Election or Non-election of Home Economics by Girls in the Senior High Schools of Washington, D. C." Unpublished Master's thesis, the University of Maryland, College Park, 1957.
33. Good, Carter V. (ed.) Dictionary of Education. New York: McGraw-Hill Book Company, Inc., 1959.
34. Hall, Olive. "Achievement of Superior Majors," Journal of Home Economics, 52:249-52, April, 1960.
35. \_\_\_\_\_. "Factors Related to Achievement of Home Economics Majors in Chemistry," Journal of Home Economics, 50:767-68, December, 1958.
36. Hochman, W. R. "Double Exposure in Education," National Education Association Journal, 48:61-62, November, 1959.
37. Hussemann, D. L. "Food and Nutrition Teaching in Ferment," Journal of Home Economics, 49:93-95, February, 1957.

38. Keller, Charles R. "The Advanced Placement Program Now Has a History," Bulletin of the National Association of Secondary-School Principals, 42:6-12, December, 1958.
39. Koos, Leonard V. Integrating High School and College. New York: Harper and Brothers, 1946.
40. \_\_\_\_\_. "Overlapping in High School and College," Journal of Educational Research, 11:322-36, May, 1925.
41. Kraushaar, Otto F. "Articulation--Our Common Concern," Baltimore Bulletin of Education, 35:1-5, March, 1958.
42. \_\_\_\_\_. "On the Need for Improved Communication between Schools and Colleges," Association of American Colleges Bulletin, 44:26-29, March, 1958.
43. Lathrop, Irvin T. "Scholastic Achievement at Iowa State College Associated with High School Size and Course Pattern." Unpublished Ph. D. thesis, Iowa State College, Ames, 1958.
44. Medsker, Leland L. "Cooperative Action among Two-Year and Four-Year Colleges: Opportunities and Obstacles," Educational Record, 39:114-21, April, 1958.
45. Michael, Lloyd S. "Articulation Problems with Lower Schools and Higher Education," Bulletin of the National Association of Secondary-School Principals, 43:51-55, February, 1959.
46. Mills, Henry C. and others. Studies in Articulation of High School and College with Special Reference to the Superior Student. Buffalo: University of Buffalo, 1934.
47. \_\_\_\_\_. Studies in Articulation of High School and College with Special Reference to the Superior Student. Buffalo: University of Buffalo, 1934, p. 217, citing Overlapping and Omissions in our Courses of Study. Bloomington, Illinois: Public School Publishing Company, 1928.
48. Morrison, D. G. "Articulation of the High School and the Public Community Junior College in the United States," Bulletin of the National Association of Secondary-School Principals, 43:102-7, September, 1959.
49. Nelson, Helen Y. "Factors Related to the Extent of Mortality among Home Economics Students in Certain Colleges of Minnesota, Wisconsin, and Iowa During 1943-50." Unpublished Ph. D. thesis, University of Minnesota, Minneapolis, 1952.

50. Nostrand, H. L. "Agenda for a New Generation," Journal of General Education, 10:190-204, October, 1957.
51. Nowlan, Clara E. "The Development of a Nutrition Pretest." Unpublished Master's thesis, Cornell University, Ithaca, New York, 1960.
52. Parker, Franklin. "Continuity between High School and College," Educational Leadership, 18:346-50, March, 1961.
53. Penney, James F. "Needed: Better Articulation between Junior and Senior Colleges," Liberal Education, 46:208-12, May, 1960.
54. Peters, Frank R. "Placement Testing in English and Mathematics at Ohio State University," Educational Research Bulletin, 37:113-19, May, 1958.
55. Poppendieck, Robert. "A School's Reach Exceeds Its Grasp; or, Perspectives in Articulation," School Life, 42:4-7, May, 1960.
56. Saddler, Jane. "Placement Test for College Home Economics Students: Elementary Clothing Construction." Unpublished Master's thesis, Iowa State College, Ames, 1945.
57. Shadi, D. C. "From High School to College in a Foreign Language," California Journal of Secondary Education, 32:455-58, December, 1957.
58. Simpson, Ray H. Improving Teaching-Learning Processes. New York: Longmans, Green and Company, Inc., 1953.
59. Snider, G. R. "School Program: Organization and Staff," Review of Educational Research, 30:67-85, February, 1960.
60. Steinberg, Erwin R. "Articulation: A Sermon," College English, 20:363-65, April, 1959.
61. Thompson, C. R. "Articulation in Freshman Studies at Lawrence College," College English, 20:179-80, January, 1959.
62. Traxler, Arthur E. and Agatha Townsend (ed.). Improving Transition from School to College. New York: Harper and Brothers, 1953.
63. United States Department of Health, Education, and Welfare, Office of Education, Education for Homemaking in the Secondary Schools of the United States. Home Economics Education Special Series No. 4. Washington: Government Printing Office, 1955.

64. \_\_\_\_\_. Southern Regional Conference, Home Economics Education, Memphis, Tennessee, February 21-24, 1956, Miscellaneous Bulletin 3511. Washington: Government Printing Office, 1956.
65. Vaughan, William E. Articulation in English between the High School and College. A Comparative Study of Freshman English in 21 State-Supported Southern Higher Educational Institutions and of Senior English in Their Accredited High Schools. New York: Bureau of Publications, Teachers College, Columbia University, 1929.
66. Wangsgard, Arla. "The Development of a Food Laboratory Examination." Unpublished Master's thesis, Cornell University, Ithaca, New York, 1958.
67. Watson, Cresap S. "What Do You Teach Them in High School?" English Journal, 47:152-53, March, 1958.
68. Wheeler, Ruth. "Home Economics for College-Bound Girls," National Education Association Journal, 49:19, March, 1960.
69. Whipple, F. Hamilton. "Memorial High School's Advanced Placement Program," Bulletin of the National Association of Secondary-School Principals, 42:24-26, December, 1958.
70. Williamson, Maude and Mary Stewart Lyle. Homemaking Education in the High School. New York: Appleton-Century-Crofts, Inc., 1961.
71. Wright, Janet Smith. "The Effect of Students' Previous Experience on Achievement in a University Course in Clothing Construction." Unpublished Master's thesis, Purdue University, Lafayette, Indiana, 1949.

## **APPENDIXES**

## **APPENDIX A**

1738 White Avenue  
Knoxville, Tennessee  
December 6, 1960

Name of Administrator  
Title  
Address

Dear (Administrator):

I plan to make a study as part of the requirements for the doctoral degree at the University of Tennessee which will necessitate the cooperation of administrators of college departments of home economics in the Southern Region. The study will relate to the problems of articulation between high school and college work in home economics.

One phase of the study will be aimed at investigating the possibility of duplication in college of course material covered in high school. This investigation will be limited to the area of foods and nutrition. Data will be obtained from college seniors in home economics from a limited number of colleges. Your college is among those from which I wish to obtain data. All of the colleges in Virginia, with the exception of the all-negro institutions, which are approved to train teachers for vocational home economics and the University of Tennessee are being asked to take part in this phase of the study.

May I ask if you would be willing to cooperate in the following ways:

1. Grant permission for your seniors to fill in a questionnaire.
2. Administer the questionnaire to the seniors at your convenience, preferably during the month of January or early February.
3. Return the completed questionnaires to me.
4. Fill in a brief questionnaire which deals with the problems of articulation, as you see them.

Enclosed is a postal card for use in indicating your willingness to participate in the study. If you can participate, please state the number of seniors for whom copies of the questionnaire will be needed. Please indicate whether or not you would like to receive a summary report of the study.

Thank you for your cooperation.

Sincerely yours,

Approved:  
Major Professor

(Mrs.) Ruth A. Hackman



1738 White Avenue  
Knoxville, Tennessee  
February 8, 1961

Name of Administrator  
Title  
Address

Dear (Administrator):

I plan to make a study as part of the requirements for the doctoral degree at the University of Tennessee which will necessitate the cooperation of administrators of college departments of home economics in the Southern Region. The study will relate to the problems of articulation between high school and college work in home economics. The purpose of the study is to compile information and opinions which might contribute to smoother and more effective transition from high school to college for students of home economics.

As a college administrator of home economics, you are in a position to make an important contribution to this study. It is to be assumed that your opinions relating to this problem would be somewhat indicative of those of your staff as a whole.

I have taken the liberty of enclosing a questionnaire with my request to you, with the hope that you can find the time to participate. Do you feel that you can assist me by completing the questionnaire and returning it at your earliest convenience? Your cooperation in performing this service will be much appreciated by the investigator and will be a helpful contribution to a study which should be of interest and value to those engaged in home economics work.

If you would like to receive a summary report of the study, you may make a notation to that effect in the upper left hand corner of the questionnaire.

Thank you for your cooperation.

Sincerely yours,

(Mrs.) Ruth A. Hackman

Approved:

Major Professor

1738 White Avenue  
Knoxville, Tennessee  
February 8, 1961

Name of Supervisor  
Title  
Address

Dear (Supervisor):

I plan to make a study as part of the requirements for the doctoral degree at the University of Tennessee which will necessitate the cooperation of state supervisors of home economics education in the Southern Region. The study will relate to the problems of articulation between high school and college work in home economics. The purpose of the study is to compile information and opinions which might contribute to smoother and more effective transition from high school to college for students of home economics.

As a state supervisor of home economics education you are in a position to make an important contribution to this study. It is to be assumed that your opinions relating to this problem would be somewhat indicative of those of your supervisory staff as a whole.

I have taken the liberty of enclosing a questionnaire with my request to you, with the hope that you can find the time to participate. Do you feel that you can assist me by completing the questionnaire and returning it at your earliest convenience? Your cooperation in performing this service will be much appreciated by the investigator and will be a helpful contribution to a study which should be of interest and value to those engaged in home economics work.

If you would like to receive a summary report of the study, you may make a notation to that effect in the upper left hand corner of the questionnaire.

Thank you for your cooperation.

Sincerely yours,

(Mrs.) Ruth A. Hackman

Approved:

Major Professor

1738 White Avenue  
Knoxville, Tennessee  
March 9, 1961

Name of Administrator  
Title  
Address

Dear (Administrator):

I know you are a busy person, but will you please give me a little of your time? Early in February, I sent you a questionnaire which I am using in a doctoral study. I am hopeful that the data from this study may be of value in helping to clarify some phases of the problem of high school-college articulation in our field.

Won't you please return your questionnaire to me? Your assistance is needed very much and will be greatly appreciated.

If you have already completed and mailed the questionnaire, please disregard this letter.

Thank you.

Sincerely yours,

(Mrs.) Ruth A. Hackman

## **APPENDIX B**

QUESTIONNAIRE FOR  
ADMINISTRATORS OF COLLEGE DEPARTMENTS OF HOME ECONOMICS

On the basis of your work with college students of home economics and your close contact with college teachers of home economics, will you please indicate your opinion in relation to the following questions:

1. Do you think that two years of high school experience in a home economics program of acceptable quality is an advantage to a student in college home economics?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

If yes, to what extent do you feel it is of value?

Much\_\_\_\_ Some\_\_\_\_ Little\_\_\_\_

2. Do you feel that it is an added advantage to the college student of home economics to have had more than two years of high school home economics in such a program?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

3. Do you think that it is a decided advantage to the college student in home economics to have had the following science courses, whether required or elective, in high school?

a) General science	Yes____	No____	Uncertain____
b) Chemistry	Yes____	No____	Uncertain____
c) Biology	Yes____	No____	Uncertain____
d) Physics	Yes____	No____	Uncertain____

Others (please list):

Comments:

4. Do you think that it is a decided advantage to the college student in home economics to have had the following mathematics courses, whether required or elective, in high school?

a) Arithmetic                      Yes\_\_\_\_              No\_\_\_\_              Uncertain\_\_\_\_

b) Algebra                          Yes\_\_\_\_              No\_\_\_\_              Uncertain\_\_\_\_

c) Plane geometry              Yes\_\_\_\_              No\_\_\_\_              Uncertain\_\_\_\_

Others (please list):

Comments:

5. In order to clarify your previous answers, please state briefly your opinion as to the kind of high school program which you believe best equips a student for college work in home economics:

6. Do you believe that your college curriculum in home economics provides adequately for those students who have a strong pre-college background in home economics?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

7. Do you believe that there is justification to the report by some college students that wasteful duplication exists between the college and the high school programs in home economics?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

If yes, to what extent do you believe such duplication exists?

Much\_\_\_\_ Some\_\_\_\_ Very little\_\_\_\_

8. In which home economics courses do you think duplication is more likely to occur? (Please list, stating reasons for your opinion):

9. Much is being said currently about the need to improve articulation between the high school and college programs in home economics. Do you agree that this need exists?

Yes \_\_\_\_\_ No \_\_\_\_\_ Uncertain \_\_\_\_\_

10. To what extent do you believe cooperative effort is being exerted toward meeting this need?

Much \_\_\_\_\_ Some \_\_\_\_\_ Very little \_\_\_\_\_

Please cite specific instances of such cooperation (local, state, regional, or national) which have come to your attention:



Will you please give the following information relating to the home economics department in your college:

11. What is the policy of your department regarding the placement of college freshmen in home economics courses? Encircle the letter which best represents your policy:
- a. All students should be enrolled in all beginning courses, leaving teaching to take care of individual needs.
  - b. All students should be enrolled in all beginning courses, but placed in class sections with others of similar pre-college experiences in home economics.
  - c. Students with strong background in home economics should be allowed to test out of beginning courses in certain areas, while those with less strong background should be sectioned in beginning courses according to pre-college experiences.
  - d. Others (please list):
12. What is the practice in current use in your department for the placement of home economics freshmen? Encircle the letter(s) which best represents your practice:
- a. Students are placed in beginning courses without regard to home economics background.
  - b. Students are placed in different sections of beginning courses on the basis of background experiences in home economics.
  - c. Students with a strong background in certain areas of home economics are given advanced placement standing in those areas.
  - d. Others (please list):

Comments:

13. If college students are placed either in beginning or more advanced courses on the basis of previous education in home economics, what criteria in particular do you use? Encircle the letter(s) which represents your criterion(a):
- a. High school record
  - b. Pretest
  - c. Conference with student
  - d. High school record and pretest
  - e. High school record and conference with student
  - f. Pretest and conference with student
  - g. Others (please list):
14. If you use pretests for placement purposes, encircle the letter(s) which indicates the area(s) in which they are used. Then place an X in the space which indicates the type of pretest used in each area.

	Type of Pretest		
	Pencil-and-paper	Performance	Oral
a. Foods	_____	_____	_____
b. Nutrition	_____	_____	_____
c. Clothing	_____	_____	_____
d. Textiles	_____	_____	_____
e. Child development	_____	_____	_____
f. Home management	_____	_____	_____
g. Related arts and crafts	_____	_____	_____
h. Others (please list):			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

15. Do you feel satisfied with the present placement procedure in your department?

Yes\_\_\_\_ No\_\_\_\_

If no, what changes do you recommend?

Please use the remaining space for any additional comments you may wish to make about any phase of this problem.

QUESTIONNAIRE FOR  
STATE SUPERVISORS OF HOME ECONOMICS EDUCATION

On the basis of your work with the high school program in home economics, will you please indicate your opinion in relation to the following questions:

1. Do you think that two years of high school experience in a home economics program of acceptable quality is an advantage to a student in college home economics?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

If yes, to what extent do you feel it is of value?

Much\_\_\_\_ Some\_\_\_\_ Little\_\_\_\_

2. Do you feel that it is an added advantage to the college student of home economics to have had more than two years of high school home economics in such a program?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

3. Do you think the high school program in home economics for the college-bound home economics student should be somewhat different from that of the noncollege-bound student?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

If yes, in what ways do you think it should differ?

4. Do you believe there is justification to the report by some college students that wasteful duplication exists between the college and the high school programs in home economics?

Yes\_\_\_\_ No\_\_\_\_ Uncertain\_\_\_\_

If yes, to what extent do you believe such duplication exists?

Much\_\_\_\_ Some\_\_\_\_ Very little\_\_\_\_

5. In which home economics courses do you think duplication is more likely to occur? (Please list, stating reasons for your opinion):

6. Much is being said about the need to improve articulation between the high school and college programs in home economics. Do you agree that this need exists?

Yes\_\_\_\_\_ No\_\_\_\_\_ Uncertain\_\_\_\_\_

7. To what extent do you believe cooperative effort is being exerted toward meeting this need?

Much\_\_\_\_\_ Some\_\_\_\_\_ Very little\_\_\_\_\_

Please cite specific instances of such cooperation (local, state, regional, or national) which have come to your attention:

Through your work you are familiar with many practices of the high schools of your State. Will you please answer the following questions relating to current practices:

8. Do you have knowledge of special provisions being made for the college-bound student in home economics in any of the high schools in your State?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, what methods of providing for those students are being used? Encircle the letter(s) which applies:

- a. Place college-bound students in special classes in home economics
  - b. Adapt home economics courses already set up to meet the needs of the college-bound student
  - c. Allow college-bound students with already heavy schedules to take home economics as a fifth subject
  - d. Introduce summer school courses in home economics as electives for the college-bound
  - e. Others (please list):
9. Do you have knowledge of provisions for talented students to accelerate their high school program in home economics toward advanced placement in college home economics?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, do you know of any arrangements between the high schools and the colleges involved to provide for such students?

Yes \_\_\_\_\_ No \_\_\_\_\_

Please explain:

10. Are you aware of any tendency in the high schools of your State to encourage students to take the following high school science courses, either required or elective, in preparation for the college home economics program?

a) General science	Yes ____	No ____
b) Chemistry	Yes ____	No ____
c) Biology	Yes ____	No ____
d) Physics	Yes ____	No ____

Others (please list):

Comments:

11. Are you aware of any tendency in the high schools of your State to encourage college-bound students in home economics to include the following mathematics courses, either required or elective, in their high school program?

a) Arithmetic	Yes ____	No ____
b) Algebra	Yes ____	No ____
c) Plane geometry	Yes ____	No ____

Others (please list):

Comments:



12. In general, what type of high school program is being recommended in your State for those students of home economics who plan to major in home economics in college? (Include such factors as curriculum, number of years of home economics, guidance in choice of electives, and others).
13. In view of the opinions and practices which you have presented in the questionnaire, can you suggest additional steps which might be taken to promote more effective transition from high school to college for students of home economics? (Please use the remaining space for such comments).

## **APPENDIX C**

## SELECTED FOOD AND NUTRITION EXPERIENCES

Prepared the following foods:

1. Egg (poached, fried or scrambled)
2. Cheese souffle
3. Soft meringue
4. Stirred and/or baked custard
5. Sponge cake
6. Tomato aspic or other gelatin salad
7. Pot roast
8. Broiled steak, chops, or ground meat patties
9. Roast fowl (with or without stuffing)
10. Biscuits
11. Oysters, croquettes, or doughnuts fried in deep fat
12. Mayonnaise
13. Escalloped potatoes
14. Variety meats (i. e., liver, kidney, heart, sweetbreads)
15. White sauce
16. Lemon pie filling
17. Fresh apple pie (or other fresh fruit)
18. Pop-overs and/or cream puffs
19. Yeast bread
20. Plain pastry
21. Cake made with butter or other fat
22. Applesauce and/or stewed (coddled) apples
23. Fresh broccoli (not canned or frozen)

24. Flour muffins
25. Fresh cauliflower
26. Fondant and/or chocolate fudge
27. Caramels
28. Boiled frosting
29. Coffee
30. Hot chocolate and/or cocoa

Engaged in the following activities:

31. Prepared and packaged a green vegetable for the freezer
32. Canned fruit by the water-bath method
33. Canned vegetables and/or meats, using pressure canner
34. Made fruit jelly
35. Had full responsibility for meals for a real or simulated family (selecting, purchasing, preparing, and serving the food)
36. Observed and/or participated in an animal-feeding experiment (white rat, guinea pig, or other experimental animal)
37. Made a detailed analysis of a one-day dietary and one-day energy requirement of an individual
38. Kept a personal diet record and evaluated it in terms of an accepted food guide (Basic Seven or Basic Four)
39. Figured the caloric value of meals
40. Engaged in an analysis of food advertising and of claims made by food faddists and promoters of reducing plans
41. Made use of the Table of Recommended Dietary Allowances in the evaluation of diets
42. Worked out food budgets at different cost levels

## SELECTED UNDERSTANDINGS IN THE AREA OF FOODS AND NUTRITION

1. Intense heat or long cooking causes excessive coagulation of high protein food resulting in toughness, shrinkage, and/or dryness of the product.
2. Excessive beating coagulates the albumin of egg white, causing loss of elasticity.
3. Cooking meat by dry heat methods can be applied successfully only to the tender cuts.
4. The fact that starch may be used as a thickening agent is due to the ability of starch granules to swell to many times their size in hot water.
5. Starch hydrolyzes (unites with water) readily when heated in the presence of an acid, and eventually forms substances which lack thickening power.
6. Lumping of starch or flour is prevented by combining it with sugar, fat, or cold liquid before heating and by stirring while cooking.
7. The amount and quality of gluten in flour determine the strength of the flour.
8. Sugar and fat interfere with the development of gluten, thus tenderizing baked products.
9. The presence of sugar interferes with the softening effect of moist heat on plant cells, thereby helping fruit to retain its shape during the cooking process.
10. In the presence of acids, chlorophyll (green pigment in vegetables) decomposes and forms compounds which vary in color from yellow to olive brown.
11. Foods cooked in fat absorb more fat at low than at high temperatures.
12. The greater the concentration of a sucrose solution, the higher is its boiling point.
13. Boiling or long contact with very hot water extracts enough tannin from coffee grounds and tea leaves to make the beverage bitter.
14. A scum on heated milk may be prevented or broken up after formation by beating the milk with a rotary beater.

15. Successful preservation of food depends upon control of the agents which are responsible for food spoilage--namely, enzymes and the micro-organisms: yeasts, molds, and bacteria.
16. Enzymes and micro-organisms and their spores remain dormant as long as freezing temperatures are maintained, but become active upon thawing.
17. Green, leafy, and yellow vegetables are good sources of vitamin A and iron.
18. The caloric value of foods increases as the amount of fat in the food increases.
19. Time and energy are saved in meal preparation if tools and equipment are placed so that they are easy to see, easy to grasp, and easy to reach.
20. The nutrition of women as potential mothers affects the health of unborn children and therefore, future generations.
21. The three functions of food in the body are (a) to build tissue, (b) to regulate body processes, and (c) to supply energy.
22. Vitamin C is the most easily destroyed of the known vitamins.
23. Heating collagen in the presence of moisture converts it to gelatin.
24. Pressure canning is the safest method of canning foods with low acid content.
25. Good nutrition demands that one be able to discriminate between fact and fallacy in the vast amount of advertising and popular beliefs about the use of foods.
26. The term "metabolism" refers to the changes which take place in the foodstuffs after they have been absorbed from the digestive tract of the body.
27. Carotene, known to be a precursor of vitamin A, occurs in the natural orange-yellow coloring matter of green and yellow vegetables.
28. In foods and nutrition there is an ever-growing body of knowledge based on experiments and the laws of science.
29. The longer the period of cooking, the greater the loss of minerals in solution.

30. Enriched bread contains added amounts of iron, thiamine, riboflavin, and niacin.

31. Eggs, milk, and meats contain complete proteins.

32. Milk is an excellent source of riboflavin.

33. Cereals contribute important amounts of protein to the diet.

34. An animal will not grow if gelatin is the only protein in its diet.

35. A well-planned, low-cost diet is often higher in nutritive value than a high-cost diet.

36. The citrus fruits are dependable sources of vitamin C.

37. Reducing diets can be adequate in all nutritive essentials.

38. The nutritional requirement of a pre-school child is higher than that of an adult in proportion to body weight.

## **APPENDIX D**



TABLE XXVI

RESPONSES OF 113 HOME ECONOMICS SENIORS FROM SELECTED COLLEGES  
WHICH SHOW WHEN ACTIVITIES RELATING TO FOODS AND  
NUTRITION WERE PERFORMED, 1961

Item number	Never performed		High school		FHA		4-H Club		Home		College class	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
1	0	0	95	84.0	4	3.5	13	11.5	113	100	100	88.5
2	20	17.7	20	17.7	1	.9	1	.9	22	19.5	81	71.7
3	5	4.4	60	53.1	1	.9	9	8.0	94	83.2	83	73.5
4	1	.9	39	34.5	2	1.8	10	8.8	67	59.3	98	86.7
5	16	14.2	31	27.4	3	2.7	10	8.8	68	60.2	82	72.6
6	2	1.8	66	58.4	2	1.8	5	4.4	92	81.4	102	90.3
7	13	11.5	16	14.2	0	0	2	1.8	80	70.8	77	68.1
8	1	.9	73	64.6	3	2.7	9	8.0	103	91.2	106	93.8
9	23	20.4	14	12.4	0	0	1	.9	68	60.2	53	46.9
10	2	1.8	99	87.6	6	5.3	32	28.3	106	93.8	95	84.1
11	7	6.2	37	32.7	1	.9	5	4.4	83	73.5	80	70.8
12	21	18.6	26	23.0	1	.9	1	.9	16	14.2	83	73.5
13	8	7.1	31	27.4	2	1.8	4	3.5	80	70.8	83	73.5
14	6	5.3	22	19.5	0	0	1	.9	78	69.0	100	88.5
15	1	.9	80	70.8	1	.9	9	8.0	84	74.3	109	96.5
16	7	6.2	35	31.0	1	.9	9	8.0	92	81.4	71	62.9

TABLE XXVI (continued)

Item number	Never performed		High school		FHA		4-H Club		Home		College class	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
17	4	3.5	57	50.4	1	.9	19	16.8	99	87.6	89	78.8
18	6	5.3	20	17.7	0	0	4	3.5	37	32.7	98	86.7
19	2	1.8	58	51.3	0	0	11	9.7	80	70.8	108	95.6
20	1	.9	87	77.0	2	1.8	18	15.9	104	92.0	108	95.6
21	1	.9	83	73.5	4	3.5	20	17.7	102	90.3	105	92.9
22	4	3.5	30	26.5	0	0	6	5.3	86	76.1	72	63.7
23	49	43.4	10	8.8	0	0	0	0	35	31.0	52	45.0
24	3	2.7	57	50.4	0	0	11	9.7	71	62.8	102	90.3
25	42	37.2	7	6.2	0	0	0	0	40	35.4	53	47.0
26	0	0	68	60.2	4	3.5	17	15.0	103	91.2	91	80.5
27	50	44.2	16	14.2	0	0	3	2.7	30	26.5	46	40.7
28	10	8.8	53	46.9	1	.9	13	11.5	94	83.2	75	66.4
29	1	.9	77	68.1	10	8.8	7	6.2	105	92.9	105	92.9
30	1	.9	88	77.9	8	7.1	13	11.5	108	95.6	96	85.0
31	18	15.9	31	27.4	2	1.8	11	9.7	78	69.0	63	55.8
32	32	28.3	17	15.0	1	.9	12	10.6	58	51.3	54	47.8
33	33	29.2	16	14.2	1	.9	9	8.0	60	53.1	48	42.5
34	33	29.2	25	22.1	1	.9	11	9.7	62	54.9	42	37.2

TABLE XXVI (continued)

Item number	Never performed		High school		FHA		4-H Club		Home		College class	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
35	1	.9	40	35.4	3	2.7	8	7.1	90	80.0	104	92.0
36	69	61.1	5	4.4	0	0	0	0	3	2.7	40	35.4
37	4	3.5	28	24.8	0	0	1	.9	1	.9	109	96.5
38	2	1.8	65	57.5	1	.9	4	3.5	9	8.0	106	93.8
39	6	5.3	49	43.4	1	.9	1	.9	20	17.7	107	94.7
40	27	23.9	11	9.7	0	0	0	0	3	2.7	84	74.3
41	6	5.3	16	14.2	0	0	0	0	8	7.1	107	94.7
42	7	6.2	29	25.7	1	.9	2	1.8	7	6.2	106	93.8

TABLE XXVII

RESPONSES OF 113 HOME ECONOMICS SENIORS FROM SELECTED COLLEGES  
WHICH SHOW WHEN UNDERSTANDINGS OF FOOD AND NUTRITION  
PRINCIPLES WERE FIRST ACQUIRED, 1961

Item number	Before high school		In high school		In college		Not acquired	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
1	12	10.6	64	56.6	31	27.7	6	5.3
2	7	6.2	33	29.2	64	56.6	9	8.0
3	5	4.4	64	56.6	42	37.2	2	1.8
4	7	6.2	47	41.6	54	47.8	5	4.4
5	0	0	9	8.0	76	67.3	28	24.8
6	20	17.7	61	54.0	32	28.3	0	0
7	2	1.8	27	23.9	82	72.6	2	1.8
8	2	1.8	25	22.1	80	70.8	6	5.3
9	3	2.7	29	25.7	68	60.2	13	11.5
10	2	1.8	36	31.9	68	60.2	7	6.2
11	9	8.0	56	49.6	46	40.7	2	1.8
12	3	2.7	18	15.9	76	67.3	16	14.2
13	23	20.4	47	41.6	43	38.1	0	0
14	24	21.2	40	35.4	40	35.4	9	8.0
15	16	14.2	46	40.7	51	45.1	0	0
16	7	6.2	45	39.8	60	53.1	1	.9
17	29	25.7	75	66.4	9	8.0	0	0
18	32	28.3	61	54.0	19	16.8	1	.9
19	37	32.7	62	54.9	14	12.4	0	0
20	18	15.9	62	54.9	33	29.2	0	0
21	31	27.4	70	61.9	12	10.6	0	0
22	6	5.3	60	53.1	47	41.6	0	0
23	1	.9	14	12.4	73	64.6	25	22.1
24	5	4.4	19	16.8	68	60.2	21	18.6

TABLE XXVII (continued)

Item number	Before high school		In high school		In college		Not acquired	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
25	10	8.8	44	38.9	58	51.3	1	.9
26	6	5.3	49	43.4	57	50.4	1	.9
27	2	1.8	48	42.5	63	55.8	0	0
28	7	6.2	46	40.7	58	51.3	2	1.8
29	16	14.2	80	70.8	17	15.0	0	0
30	8	7.1	66	58.4	38	33.6	1	.9
31	15	13.3	63	55.8	34	30.1	1	.9
32	9	8.0	48	42.5	52	46.0	4	3.5
33	8	7.1	57	50.4	44	38.9	4	3.5
34	0	0	18	15.9	79	69.9	16	14.2
35	5	4.4	36	31.9	70	61.9	2	1.8
36	39	34.5	71	62.8	3	2.7	0	0
37	12	10.6	53	46.9	48	42.5	0	0
38	4	3.5	24	21.2	83	73.5	2	1.8

TABLE XXVIII

DUPLICATION IN COLLEGE OF PRE-COLLEGE EXPERIENCES IN FOODS  
AND NUTRITION AND THE VALUE OF DUPLICATION AS REPORTED  
BY 113 COLLEGE SENIORS OF HOME ECONOMICS, 1961

Item number	Duplication reported		Value of duplication					
	Num- ber	Per cent	None		Some		Much	
			Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
1	101	89.4	43	42.6	50	50.0	8	7.9
2	24	21.2	5	20.8	17	70.8	2	8.3
3	75	66.4	32	42.7	37	49.3	6	8.0
4	60	53.1	13	21.7	38	63.3	9	15.0
5	60	53.1	17	28.3	31	51.7	12	20.0
6	90	79.6	34	37.7	41	45.6	15	16.7
7	58	51.3	13	22.4	35	60.3	10	17.2
8	105	92.9	22	21.0	63	60.0	20	19.0
9	33	29.2	4	12.1	19	57.6	10	30.3
10	107	94.7	30	28.0	48	44.9	29	27.1
11	64	56.6	13	20.3	36	56.3	15	23.4
12	30	26.5	8	26.7	16	53.3	6	20.0
13	68	60.2	31	45.6	33	48.5	4	5.9
14	74	65.5	5	6.8	43	58.1	26	35.1
15	93	82.3	25	26.9	42	45.2	26	28.0
16	60	53.1	24	40.0	27	45.0	9	15.0
17	83	73.5	31	37.3	43	51.8	9	10.8
18	41	36.3	3	7.3	21	51.2	17	41.5
19	87	77.0	11	12.6	39	44.8	37	42.5
20	106	93.8	22	20.8	57	53.8	27	25.5
21	100	88.5	30	30.0	55	55.0	15	15.0
22	58	51.3	26	44.8	31	53.4	1	1.7
23	27	23.9	12	44.4	12	44.4	3	11.1
24	75	66.4	14	18.7	38	50.7	23	30.7

TABLE XXVIII (continued)

Item number	Duplication reported		Value of duplication					
	Num- ber	Per cent	None		Some		Much	
			Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
25	25	22.1	7	28.0	15	60.0	3	12.0
26	88	77.9	22	25.0	41	46.6	25	28.4
27	19	16.8	5	26.3	10	52.6	4	21.1
28	74	65.5	23	31.1	38	51.4	13	17.6
29	105	92.9	58	55.2	33	31.4	14	13.3
30	95	84.1	66	69.5	23	24.2	6	6.3
31	50	44.2	19	38.0	20	40.0	11	22.0
32	36	31.9	7	19.4	20	55.6	9	25.0
33	33	29.2	8	24.2	16	48.5	9	27.3
34	30	26.5	3	10.0	19	63.3	8	26.7
35	87	77.0	2	2.3	19	21.8	66	75.9
36	3	2.7	0	0	1	33.3	2	66.7
37	29	25.7	1	3.4	10	34.5	18	62.1
38	62	54.9	0	0	24	38.7	38	61.3
39	57	50.4	5	8.8	25	43.9	27	47.4
40	11	9.7	0	0	4	36.4	7	63.6
41	19	16.8	0	0	7	36.8	12	63.2
42	33	29.2	0	0	7	21.2	26	78.8

TABLE XXIX

VALUE OF COLLEGE COURSES TO UNDERSTANDING OF PREVIOUSLY  
ACQUIRED FOOD AND NUTRITION PRINCIPLES AS REPORTED  
BY 113 COLLEGE SENIORS OF HOME ECONOMICS, 1961

Item number	Pre-college understanding reported		Value of college courses to increased understanding					
	Num- ber	Per cent	None		Some		Much	
			Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
1	76	67.3	3	3.9	45	59.2	28	36.8
2	40	35.4	11	27.5	25	62.5	4	10.0
3	69	61.1	4	5.8	50	72.5	15	21.7
4	54	47.8	16	29.6	28	51.9	10	18.5
5	9	8.0	2	22.2	4	44.4	3	33.3
6	81	71.7	24	29.6	44	54.3	13	16.0
7	29	25.7	7	24.1	11	37.9	11	37.9
8	27	23.9	5	18.5	16	59.3	6	22.2
9	32	28.3	7	21.9	19	59.4	6	18.8
10	38	33.6	4	10.5	26	68.4	8	21.1
11	65	57.5	11	16.9	49	75.4	5	7.7
12	21	18.6	3	14.3	8	38.1	10	47.6
13	70	61.9	20	28.6	38	54.3	12	17.1
14	64	56.6	29	45.3	32	50.0	3	4.7
15	62	54.9	5	8.1	34	54.8	23	37.1
16	52	46.0	5	9.6	29	55.8	18	34.6
17	104	92.0	11	10.6	52	50.0	41	39.4
18	93	82.3	18	19.4	55	59.1	20	21.5
19	99	87.6	9	9.1	45	45.5	45	45.5
20	80	70.8	3	3.8	35	43.8	42	52.5
21	101	89.4	10	9.9	55	54.5	36	35.6
22	66	58.4	10	15.2	42	63.6	14	21.2



TABLE XXIX (continued)

Item number	Pre-college understanding reported		Value of college courses to increased understanding					
			None		Some		Much	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
23	15	13.3	2	13.3	9	60.0	4	26.7
24	24	21.2	8	33.3	13	54.2	3	12.5
25	54	47.8	3	5.6	33	61.1	18	33.3
26	55	48.7	5	9.1	28	50.9	22	40.0
27	50	44.2	2	4.0	31	62.0	17	34.0
28	53	46.9	6	11.3	19	35.8	28	52.8
29	96	85.0	10	10.4	63	65.6	23	24.0
30	74	65.5	12	16.2	49	66.2	13	17.6
31	78	69.0	13	16.7	40	51.3	25	32.1
32	57	50.4	13	22.8	38	66.7	6	10.5
33	65	57.5	12	18.5	40	61.5	13	20.0
34	18	15.9	1	5.6	16	88.9	1	5.6
35	41	36.3	2	4.9	16	39.0	23	56.1
36	110	97.3	27	24.5	72	65.5	11	10.0
37	65	57.5	6	9.2	39	60.0	20	30.8
38	28	24.8	1	3.6	14	50.0	13	46.4