A COMPARATIVE STUDY OF THE EFFECTIVENESS OF TWO TEACHING METHODS: TELEVISION ALONE AND TELEVISION REINFORCED BY A GROUP LESSON

> Thesis for the Degree of M. S. MICHIGAN STATE UNIVERSITY Olive K. Sain 1964

THESIS





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Ву

Olive K. Sain

# AN ABSTRACT OF A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

#### MASTER OF SCIENCE

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#### ABSTRACT

# A COMPARATIVE STUDY OF THE EFFECTIVENESS OF TWO TEACHING METHODS: TELEVISION ALONE AND TELEVISION REINFORCED BY A GROUP LESSON

# by Olive K. Sain

The purpose of this field study was to compare, within two defined audiences (extension and non-extension homemakers), the change in knowledge due to viewing 1-3 television programs as compared with viewing 1-3 television programs reinforced by a lesson on the same subject at the next club meeting.

The samples used were: 369 extension women, presently enrolled in an extension club, and 427 non-extension women, listed in the Marquette telephone exchange directory, in Marquette County.

The study was conducted under field conditions. The samples were each divided into two groups: the odd numbers into pretest (control) and the even numbers into post test (experimental) groups. The control groups were interviewed by telephone the week prior to the three television programs on dairy products presented over WLUC-TV, by the agent, the second Monday, Wednesday and Friday of January, 1962, from 3:00 - 3:30 P.M. During the week following the program, the non-extension (experimental group) women were interviewed. Within a few days following each club meeting the extension (experimental group) women were interviewed.

Since the subject matter was divided between the three TV programs, all three programs needed to be viewed to have had the complete lesson.

The group project leaders received a study guide and reference materials prior to the TV programs and had attended a training meeting on teaching techniques. Each project leader developed her own lesson plan.

The questionnaire had three parts: (1) information on the income, education and age characteristics; (2) number of TV programs viewed and having a group lesson; and (3) eleven questions on subject matter information to measure change in knowledge.

The control groups were used to establish a "benchmark" level of knowledge. The experimental groups were exposed to one or both types of teaching methods: TV alone or TV reinforced by a group lesson.

The difference between the groups, based on varying numbers of programs viewed, measured any gain in knowledge due to viewing more of the programs. Knowledge was increased in non-extension groups viewing 1, 2 or 3 TV programs when compared with the control group. Comparisons among non-extension groups viewing different numbers of programs indicated that viewing more programs tended to be better than viewing fewer programs. Comparisons among extension (no-lesson) groups viewing different numbers of programs indicated that viewing all of the programs was somewhat better than viewing fewer programs.

The differences between groups based on having a group lesson and viewing varying numbers (0, 1, 2 or 3) of TV programs, measured any gain in knowledge due to the lesson and viewing more of the programs. Some gain in knowledge was noted in half of the cases due to viewing more compared with fewer programs. A significant gain was noted in two out of three tests when three programs were viewed.

The differences between groups based upon a group lesson or not having a group lesson and viewing varying numbers of the three programs measured any gain in knowledge due to the group lesson and viewing more of the programs. In the comparisons between the two treatments (three TV programs and a group lesson) as compared with one or part of one treatment, the findings indicated a very significant gain in the group having had the two complete teaching exposures. In those groups having a lesson and viewing less than three programs, the findings in over half of the tests indicated that having had the lesson added significantly to a gain in knowledge.

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ii

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# TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	ii
LIST OF TABLES	vi
Chapter	
I. INTRODUCTION	1
Situation	3 4 5 8
II. REVIEW OF LITERATURE	11
Literature on Educational Television Literature on Extension Television	11 15 15 17 19 21 24
III. METHODOLOGY	27
Definition of Terms	28 31 35 37 39 43 44 45 45

IV.	PRESENTATION AND ANALYSIS OF DATA	48
	Characteristics of the Sample	48
	Criterion Data	52
	Analysis of Data	53
	Hypothesis I	54
	Hypothesis II	55
	Hypothesis III	57
	Hypothesis IV	59
	Hypothesis V	61
	Study Weaknesses	63
v.	CONCLUSIONS	65
	Summary	65
	Conclusions	68
	Implications	70
	Suggestions for Future Research	71
APPEN	DIX A	73
	Tables	
	Frequency Tables for Hypotheses	74
	Tabulation of Knowledge Scores for Five Groups.	84
	Tabulation of Knowledge Scores for Each	
	Experimental Group by the Number of	
	Programs Viewed	84
APPENI	DIX B	88
	Pretest Questionnaire	89
	Post Test Questionnaire	99
BIBLI	OGRAPHY	.09

# LIST OF TABLES

Table		Pa	age
1.	Total Sample of Subjects Drawn for the Study	•	38
2.	Composite Table of Total Sample: Completed Interviews and Subjects Dropped	•	43
3.	Number of Subjects in Pretest and Post Test Groups by Exposure to Independent Variables	•	48
4.	Comparison of Non-extension and Extension Members on Education, Age and Income		49
5.	Summary of $X^2$ Tests of Significance Between the Five Groups on Education, Age and Income		50
6.	Number of Subjects in Three Knowledge Score Categories in the Five Test Groups		53
7.	Knowledge Levels Among Extension (no lesson) Groups and Non-extension Groups Viewing Different Numbers of Programs	-	54
8.	Knowledge Levels Among Extension (no lesson) Groups and Non-extension Groups Viewing Different Numbers of Programs	- •	56
9.	Knowledge Levels Among Extension (lesson) and (no lesson) Groups Viewing Different Numbers of Programs		57
10.	Knowledge Levels Among Extension (lesson) Groups Viewing Different Numbers of Programs	•	59
11.	Knowledge Levels Among Extension (lesson) and (no lesson) Groups Viewing Different Numbers of Programs	•	61
12.	Comparison of $x^2$ Tests Between Groups According to the Number of Teaching Methods Used		70

#### CHAPTER I

## INTRODUCTION

The home economics extension agent, in effectively disseminating information, is faced with several problems and choices. Who are her clientele: the organized home economics extension clubs or the larger community or both? Will the program emphasis be directed at influencing a large number of people slightly or influencing a small number to make maximum progress? What communication media are available from which to choose? What method or combination of methods will be most effective in reaching the desired goal with the available resources? More and more these questions are being answered in terms of expanding the agent's influence to an audience broader than just extension groups. Relatively new media like television make this expansion more of a possibility than ever before.

Television has developed into a very important medium of communication for educational purposes, as noted by its wide use in army training centers during World War II for giving concentrated instruction to large numbers of soldiers with a minimum of instructors. Educational institutions have

found both open and closed circuit television effective for teaching purposes. Students often seem to learn as well or better through this medium than through the usual classroom teaching situation. Also, the skill of highly specialized instructors can be filmed and made available to larger and more classes at one time. The taping of programs means that instruction can be given without the specialized instructor being present at a particular class time. The video tapes also can be used in future classes, loaned to other institutions or made available to the general public, for credit or non-credit courses.

Many of these characteristics make television use appealing to the home agent. After reading about the increasing use of television for educational purposes, and since there was television time available for extension programs on the local station, the author discussed with her district director the possibility of combining television teaching of the subject matter for extension lessons which would disseminate the information to larger audiences and at the same time to continue the organized group structure with its project leader system. Such an arrangement would potentially allow the agent to reach more women with about the same teaching effort. The district director was interested in the idea, considered that it had merit and should be investigated.

As a result, a series of television lessons were prepared and this study proposed as a way of evaluating some of the outcomes of the teaching.

Specifically, this study was set up to test the effect of two teaching methods: teaching via television alone, and teaching via television reinforced by a lesson on the same subject being given by a project leader at the following club meeting.

# Situation

The charge or task of the extension agent is to disseminate useful and practical information, and to encourage the practical application of this information to specific situations applicable to many different clientele. Or phrased another way, the agent attempts to influence the behavior of her clientele in their own particular situations through education processes. According to Wilson and Gallup (28) the agent must "select the appropriate method or combination of methods best suited to do a specific teaching job with certain clientele under the special circumstances existing at the time."

The teaching methods used by extension agents can be grouped into three broad categories: individual contact methods, group contact methods, and mass media. The primary

method used historically in working with home economics extension clubs has been the group method utilizing project leaders.

## Project Leader System

The project leader system gradually developed in the Cooperative Extension Service from the agent working with individual homemakers, to the use of project leaders. This was brought about by the expansion of the clientele from rural homemakers to include all homemakers in the county. The agents found it necessary to find practical ways of reaching large numbers of homemakers with the same amount of effort on her part. This resulted in the development from working with one homemaker in her home situation on a specific problem, to working with a group of women in a home situation on a common problem, to working with and training project leaders who in turn would teach a group of women.

Training centers were set up in key areas of a county to teach project leaders both subject matter and teaching techniques. Generally, they were taught how to do a specific job: a method-demonstration lesson approach. The project leader performed the role of an assistant extension teacher by presenting this same educational lesson to the members of her club, thereby increasing the volume of teaching done by the agent.

Each extension club selected two of its members to be project leaders for a particular subject. These leaders would attend the training meetings, receive information and instruction on the lessons selected for that program year, and present the lessons at the club's monthly meetings. In fulfilling their assignments or obligations to their clubs, these women may have learned to think, plan and speak better, discover new abilities, develop skills as a leader and also gain a great deal of satisfaction in helping others.

# Community Changes

It was mentioned that all women, rural and urban, were the potential clientele of home economics extension. But still the major emphasis in the usual extension program of work is placed on working with and through the organized home economics extension clubs.

How many of the potential clientele have been part of the extension club organization, participating as regular members of extension clubs? The number of extension club members varies from county to county. According to the Michigan Census (25) there were 12,620 women who were between the ages of 20-59 years in Marquette County. Of this number, 400 were members of home economics extension clubs. In the State of Michigan there were 1,711,435 women between 20-59

years of age and of this number, 35,000 were members of home economics extension clubs. Proportionately, about the same number of women belonged to clubs in Marguette County as belonged to clubs in the state of Michigan. These figures point out that extension's educational effort has been directed mainly toward a very small proportion of the total women in this age grouping, not only in Marquette County, but throughout the state. If the majority of women were not reached through extension clubs, other ways needed to be found and utilized. These figures become important in programming the educational efforts of an extension agent. This was especially true in Marguette County which is one of the largest counties east of the Mississippi River. The 400 women mentioned earlier belong to extension clubs in widely separated areas of the county, necessitating much time being used for travel, both on the part of the project leaders and the agent, if traditional extension teaching methods are used.

The county situation has been affected by factors other than distance, too. Community and family life have been changing due to the many technological advances which have been taking place. Farms have been decreasing in number, and cities have been extending out into rural areas. The automobile, along with the increasing number of organizations, has involved the families, rural and urban, in more societal

obligations. The rising cost of living, coupled with the depressed labor area, has forced many of the homemakers into the labor market. The pattern of family living has changed: young people marry younger, have families at an earlier age, are more mobile and have weaker community and family kinship ties. The differences between city families, rural non-farm families and farm families have been fast disappearing.

What the modern homemaker wants and needs to know to cope with the problems of today's economic and social conditions is continually changing. These changing conditions have also affected the extension agent's pattern of reaching people with research findings from the specialists about new products, methods and practices which can be applied to problems in local situations.

The extension club meeting or project leader training meeting now competes with a large number of organizational activities, many of which the homemaker feels committed to without any choice. Certain segments of the population have been unable to attend either local or county-wide group meetings of extension. These segments include the young homemaker with pre-school children, the physically handicapped and the senior citizens.

Since technological changes have affected the nonextension as well as the extension clientele, then the

research findings about new products, methods and practices should be of help to all homemakers in making changes that would result in the improved health of family members, more comfortable homes, better use of resources, and in the achievement of a satisfying family life.

#### Impact of Television

In addition to the complexities of societal demands upon the family, the advent of television forced still another choice. Television viewing became the recreational pastime of millions and continued to attract viewers even after the novelty had worn thin. The middle and lower middle class families were so entranced with watching television that they became even more reluctant to attend educational meetings or to meet together in extension groups. Coffin (3) reported that the lower income groups spend more time in viewing, hold more favorable opinions of television, and show greater effects of television in their lives.

The Federal Communications Commission (7) realized the educational impact that television could have on the entire population when they required that commercial stations devote a certain amount of time to educational programs.

The Extension Service record reflects how its personnel have been steadily increasing their use of the

television medium as a teaching method or tool. From a total of 3,950 extension television broadcasts in 1953, the number has increased to 19,584 such broadcasts by extension personnel in the United States in 1958 (8). The number continues to rise. Thus, the agent must continually weigh the advantages and disadvantages of the traditional forms of extension teaching methods against the newer teaching methods and newer tools made available through technology.

It is necessary to understand the possibilities and the limitations of this new method of reaching a greater number of people to see how and to what extent it can be incorporated with other methods in order to find various combinations which will maximize the educational effort of the agent.

In summary, not only extension members but all homemakers need the latest research information to apply to the social and economic problems created by technological changes. Educational institutions have been making increasing and effective use of both open and closed circuit television. Television time was available for extension programs, which offered the chance to deal with certain problems: too much time was used in agent travel, which was non-productive; the project leader system was effective, but reached only a small proportion of the homemakers; and not all homemakers

are joiners and some homemakers find it difficult to attend meetings.

Therefore, in this field study, it was hoped to reach extension and non-extension homemakers through television with educational information that would help them as consumers.

#### CHAPTER II

## REVIEW OF LITERATURE

In order to gain an overall perspective of the impact of television on the family, a review was made of research and other literature that related to different educational interests. This included the extent to which commercial channels were utilized for various educational purposes, with emphasis on use of television by extension personnel, and the effectiveness of the educational programs.

It was considered necessary to refer to studies which were done by other educational institutions that had used either or both open and closed circuit television. Altogether these studies would give a composite picture which might substantiate television's effectiveness and verify its practical application to educational endeavors.

# Literature on Educational Television

Educational television has been mainly a channel for school broadcasts (closed circuit) rather than for community broadcasts (open circuit). Educational television supplies part of the teaching of nearly three million school children,

and attracts 10 to 24 percent of the adults in communities having a VHF channel. From one televised credit course in 1941, credit courses have increased to 500 in 1960 (20).

Research studies on educational television have been of an applied nature or comparison studies, generally of television versus face-to-face instruction. The measurement of effectiveness was the gain in knowledge. The research has been done mainly in a classroom situation with regularly enrolled students. That is, researchers have concentrated on the "captive audience" aspect of educational television.

Of the 200 studies on educational television reviewed by Kumata (14), 90 percent were of a comparative nature using knowledge as the dependent variable. Most of the studies showed no significant difference in learning when comparing television with face-to-face groups of students. Different kinds of subject matter did not affect the results. Other studies examined various characteristics in the students, especially intelligence levels, with varied results. Some studies indicated that students with lower intellectual ability gained more from a television lesson than from a face-to-face lesson. Other studies found the reverse. The medium, itself, did not seem to be better for one intelligence level than for another. Kumata (14) said of television, "One of the benefits in education was the opportunity for

interaction rather than just listening to lectures, but in (TV) studies where there was an opportunity for interaction and discussion by means of two-way communication systems, no difference was found in student learning."

The research on the use of television for instruction at Pennsylvania State University (1) over a five-year period repeatedly found that there was no measurable difference in students' learning when they were taught by means of television or face-to-face by the same teacher.

Kumata's findings were substantiated by Schramm's (19) review of about 400 comparisons of television and classroom teaching. Fourteen of the studies were cases of military instruction, 32 cases involved home instruction by television versus face-to-face, and the remainder were in classrooms. When the results of student's final examinations were compared, the two methods were equally effective except for the home television students, who consistently did better. Schramm attributed this to high motivation on the part of the home students. A conflicting finding from the studies concerned the retention of subject matter over a period of time. In one case there was no difference, and in the second study the television students remembered more subject matter a month later.

The results of research have indicated that good teaching is much the same on television, in films or on a lecture platform. In a comparison by Williams (19) of television, radio, classroom teaching, and reading in a library, all students learned but the television students were a little better. Another study by Stuit (19) compared TV lecture, TV discussion, small and large group discussion, and lecture with very little difference in learning resulting from one method to another. Brandon (19) compared learning from a lecture, an interview, and a panel discussion and found no significant difference. Carpenter and Greenhill (19) found in their study that if too many visual aids or teaching tools were used in a lesson, the learning was less than when two unspecified methods were used. However, a ' second study found no significant difference in learning.

These studies have suggested that there was no significant difference in the amount of subject matter learned in a classroom situation with an instructor or viewing a television presentation. Also, no significant difference was found when various methods or media were compared for effect on learning. However, no research could be found on the effects of combining media where a teacher uses a televised program as a part of a total learning experience in a class.

## Literature on Extension Television

#### Audience Research

Estimates in 1950 indicated that more than fifty million (over 87 percent) of the homes in the United States, excluding Alaska and Hawaii, had television sets (7). Approximately 92 percent of the homes in Michigan had television sets according to the A. C. Nielson Company in a report made in 1960 (15).

Five hours per day was the average viewing time per family in the United States. The major network conducting the survey also noted that 79 percent of the family members over twelve years of age spent five times as many hours viewing television as they spent reading newspapers; ten times as many hours as for attending movies; and eleven times as many hours for viewing television as for reading magazines (12).

These studies have indicated the potential influence that television could have on the lives of the families in the United States, due to its availability in most homes and the amount of time spent in viewing programs.

Extension personnel have been using television channels increasingly since the effectiveness of the medium has been determined. The number of television broadcasts by county extension agents throughout the United States has increased

from 4,653 in 1953 to 18,584 in 1958. Of the number of programs televised in 1958, 6,490 were produced by home demonstration agents (8).

The studies made relating to extension programs were mostly descriptive. They were designed to determine the audience, their program preferences, the most suitable time for certain types of programs for certain segments of population, the average length of a program and the value rating of programs. The results of such studies have provided guides for the extension agents when selecting the most appropriate medium for each teaching situation.

A pioneer program in conducting an extension course was studied by Wilson and Moe (29). They interviewed 250 women in the metropolitan area around Washington, D.C., who had enrolled in the series "Let's Make A Dress." Of the 250 women, 40 percent viewed the entire series of eleven lessons. A significant fact brought out in the study was the number of young mothers who had participated. This segment of the potential audience had been the most difficult to reach through meetings. More than half of the women interviewed were under 35 years of age, and eight out of ten of them had children of school age at home.

A report on another series "Tailoring A Coat" in Milwaukee (17) found that one-third of the enrolled members

were under 35 years of age and had school age children at home. Another study done in El Paso (24) found that 69 percent of the enrollees were not members of an extension club and that a large percentage were young homemakers.

These studies seemed to indicate that television was an effective way to reach: young homemakers with children at home, non-extension homemakers, and extension women.

#### Comparison Between Methods

Three media were compared in Coolican's experimental study (4). She pretested four groups of extension women, exposing them to the message (each group was in a separate room and a different medium used) by way of television, a bulletin, a mimeographed version of the bulletin, and an unrelated bulletin. Immediately following the exposure, she tested them again. Twelve days later they returned for a second post test. In the first post test there was no significant difference in the scores of the four groups. However, in the second post test the scores of those viewing the television program and those reading the bulletin were significantly greater than for the control group and those reading the mimeographed version. No explanation was given for the difference between the findings in the two post tests. It was noted that the subjects were perhaps motivated to some

extent to do their best because of the controlled conditions and being aware that it was a test situation.

Kreitlow (13) compared four media in various combinations to determine the effectiveness of each method in presenting research findings to the public on a controversial community issue. The difference between the (means) correct scores designated which was the best method to use for influencing the people. He found that the lecture was better than the bulletin or the film in three out of five cases and that the bulletin was better than television. In the comparisons between the bulletin and film, there were conflicting results. In a formal setting with a researcher in charge of the meeting, there was no difference between the bulletin and In an informal setting with a local leader presiding, film. the bulletin was better than the film. He found that the lecture was most effective for controversial public issues when information was immediately useful in determining action to be taken.

The two studies indicated that although there were conflicting results, all methods were useful in presenting information. The latter study noted the vested interest of the parents and taxpayers in the issue at hand (a school redistricting proposal) which may have acted as motivation.

#### Effect of a Combination of Methods

Thompson (20) tried a new approach to reach nonextension women. She organized 39 groups of women into small neighborhood groups to (a) meet, view and discuss or to (b) view, meet and discuss a particular lesson "Food for Fitness" which was to be televised. A special meeting was held with group leaders to explain how to lead a group discussion and to give them a list of suggested questions to use during their group meeting. No criterion had been planned to measure a change in knowledge for assessing the effect of viewing the program and having a discussion. The only information gained from the study was that non-extension women could be organized into discussion groups to view and discuss a program.

The lack of a measuring device was noted in a similar study conducted in Iowa (5). In this study 800 women were organized into "coffee groups" to view a series of four 30-minute television programs. Project leaders were trained to lead a discussion in their groups following each program. The only relevant point noted was the involvement of nonextension women (organized for the series of programs).

The "Make a Dress--TV" series conducted by the Iowa State College Extension Service (10) compared four teaching methods: televised instruction only; printed literature

plus viewing the programs; television and help from a home economist; and receiving a bulletin, viewing the television programs and having help from a home economist. The study reported that one method was as good as another. However, in comparing the methods on amount of knowledge gained, the investigators used a questionnaire which could easily have led to an excess of "high gain" responses for all four methods. They based the results on interviews with a random sampling of the enrolled women after the series was over. The women were asked to check a list of techniques they might have acquired as a result of viewing the series.

Three channels of communication were compared using change in knowledge as a criterion, by Schaeffer (18), with four groups of extension members who were interested in participating in the study. The three channels were: lesson by a project leader, television, and television supplemented by a discussion. The three groups (one for each medium) and a control group were pretested just prior to exposure to the lesson presentation and tested immediately following the exposure. They were given a second test two weeks later. All three experimental groups learned a significant amount, but the control did not, as noted from the first post test. However, the amount of knowledge retained decreased significantly for the three experimental groups on the second

post test. The results of the study indicated that the women learned as much when anyone of the three media was used and that they retained as much. It was noted that this study was conducted in a controlled "classroom" situation, with selected (interested) subjects who might have been motivated to do well because of the nature of the experiment (testing knowledge). Would the same results have been found in a field situation in which extension clubs normally meet?

The literature on using television as a method of instruction compared with other methods or complementary methods has indicated that, in the main, one method is as good as another and one method is as effective as a combination of methods. This is in conflict with several statements made by Wilson and Gallup (29), "As the number of different types of contacts or exposures to extension information increases from 1 to 9, the percentage reporting change increased from 38 to 98 percent . . . Repetition in a variety of ways is important to learning . . . and, the combined effectiveness of teaching methods used to complement each other may be greater than the same methods used independently."

# Related Literature

People learn through seeing, hearing about, and trying out an idea. Before they can learn, the idea must be

brought to their attention in some way. They must become interested in the idea, the idea must be related to a desire or want, and they must have an opportunity to act. These steps by which an idea gets from its source to being ultimately used, have been called the diffusion process (11). It was noted in the circular "Adopters of New Farm Ideas" (22) that mass media are most important in making people aware of or interested in a new idea or practice. But, the most significant finding was the extent to which people rely on their friends and neighbors at all stages in the diffusion of knowledge.

Becker (1) noted: "Reinforcement serves an important function in learning but that very little is known today about the kinds of events which will be reinforcing to various classes of individuals." He further states: "There are times when the important function of reinforcement is simply to give information." Another aspect of learning which he discusses is the social nature of learning. ". . . what one learns is dependent upon what one believes is important to learn."

Since the extension group-project leader system has been the usual method of teaching, the following statements about its value or effectiveness have been noted by several
authors. Kelsey and Hearne (11) mention that small groups such as the extension clubs are valuable for teaching purposes because participation and discussion on a subject are easily handled, and that members stimulate each other's thinking. Ideas are exchanged and challenged and because of this "give and take" are remembered. Wilson and Gallup (28) state: "The use of the volunteer local leader enlarges extension coverage, increases the volume of extension teaching and is another medium for transmitting and/or reinforcing knowledge . . . Through discussion knowledge is shared and learning strengthened."

Utterback and Fotheringham (26) found that groups having a designated leader were superior in problem solving to groups not having such a leader. Pelz (16) found that group discussion was better than the lecture method in inducing action. Hare (9) mentioned that groups tend to be more productive when they have a skilled leader and when there is maximum opportunity for feedback. However, he added that research in the small group field seemed to be at a stage where conclusions were difficult to obtain on a practical field studies basis.

These reports point out that many factors affect the learning process.

#### Summary

The literature and research reviewed indicate that:

- People learn equally well when any one of the methods of communication or instruction is used or when one method is followed by a second method.
- Television is effective in reaching larger audiences and new audiences not reached by the extension club system.
- 3. The interaction between members in a group situation and with a designated leader aids in the exchange, clarification and reinforcing of ideas.
- 4. The adoption or learning of a new idea takes place in various stages: awareness, interest, evaluation, trial, and adoption with mass media being important in the first two stages but friends and neighbors being important throughout all of the stages.
- Reinforcement or repetition is an aid to learning and may simply mean that necessary information is provided.
- 6. People learn what they believe is important for them to learn.

The research which has been reviewed was done largely with "captive" audiences in carefully controlled (classroom) situations. The question remains, would the results be the same in field experiments? The research results and several statements made by Wilson and Gallup (28) were not in complete agreement. The statements were: "Mass media complement and reinforce individual and group contacts," "Teaching methods used to complement each other may be better than when used independently," and "Repetition in a variety of ways is important to learning."

Since the study done by Schaeffer (18) had, as one of the experimental groups, a group that was exposed to a television program reinforced by a discussion and found it no more effective than one method alone (but also noting that a "captive" audience under "classroom" conditions was used) and due to the conflict between these results and the principles of learning, it seemed that this part of her study should be followed up.

However, this author was interested in discovering what happens in a situation which did not lend itself to such rigid control in order to learn what would happen in an ordinary everyday situation. Therefore, it was decided to make this study on a field basis.

It seemed that if learning took place equally well from one method, more learning due to repetition should take place when the number of exposures were increased (principles of learning). Therefore, it was hypothesized that:

- Respondents viewing the three television programs on dairy products would learn more than those not viewing any of the programs.
- Respondents viewing more of the programs would learn more than those viewing fewer of the programs.

- 3. Respondents having a lesson in addition to viewing the three programs would learn more than those not having a lesson and viewing 0-3 programs.
- Of the respondents having a lesson, those viewing more of the programs would learn more than those viewing fewer of the programs.
- 5. Respondents viewing less than three of the television programs and having a lesson would learn more than those viewing 1, 2 or 3 of the programs and not having a lesson.

### CHAPTER III

### METHODOLOGY

As mentioned in Chapter I, two methods of teaching were studied. The effectiveness of each method would be the change in knowledge between the experimental groups and the control groups. The comparative effectiveness of each method would be determined by comparing the change in knowledge of the experimental groups exposed to one teaching method on a particular subject compared with the change in knowledge of the experimental group exposed to the two teaching methods on the same topic. The two methods were:

- 1. Teaching via television, alone.
- Teaching via television reinforced by a lesson on the same topic led by a project leader at the next club meeting.

The local television station, WLUC-TV, had been providing the Cooperative Extension Service with public service time for educational programs three times a week from October through April since 1959. During the year in which this particular study was done, the half-hour programs were on Monday, Wednesday and Friday from 3:00 to 3:30 P.M. The actual amount of time for the extension programs was a half

hour minus a commercial at the beginning and end of the half hour and a station break and commercial at 3:15 P.M. This television station covered the greater portion of the Upper Peninsula, and because cable televised programs had just begun to come into the Peninsula, there was relatively little competition from other television sources.

## Definition of Terms

Before continuing with an explanation of how the study was conducted, it seemed that certain words and terms should be clarified so that anyone reading the study would know how the agent defined them and wanted them understood. The agent's working definitions are:

Extension Club: This term is synonymous with home economics extension club, home demonstration club or group. It refers to a group of 6-30 women organized as a unit and having membership in the County Home Economics Extension Organization. The women take part in local group activities sponsored by the Extension Service for the development of individual, family and community life.

Member: Those homemakers who are members of extension clubs.

<u>Non-member</u>: Those homemakers who are not members of extension clubs.

Project Leader or Discussion Leader: The two terms may be used interchangeably. Project leaders are local, volunteer women from each extension club who teach their club members subject matter information and skills. They may use any of the teaching techniques from discussion to method demonstrations.

Project Leader Training: In the usual method, the agent or specialist presented a lesson on a particular topic to the project leaders. Both subject matter and teaching techniques relating to the leader giving the lesson in the local club were presented at the training meetings. Subjects were narrowed down to fit the 2 - 2 1/2 hour meeting time. The purposes of the meetings were: to teach principles which would apply to the subject matter of the lesson, to give practice, and to provide lesson guides and reference material.

This is in contrast to the project leader training for the year of this study which consisted of one meeting only, which was devoted to considering teaching techniques. The subject matter was handled in the following manner: a study guide, list of references (including the USDA yearbook on food) and suggestions for teaching were sent to the project leaders previous to each month's lesson on television. The project leader would read the material, view the programs,

do further study, plan and teach a lesson based on the same material to her club members.

Lesson: That which a project leader teaches and in so doing can choose among the various teaching methods, such as, lecturing, demonstrating, leading a discussion, etc. That lesson, as used here, is not restricted to any one method of teaching.

<u>Teaching Methods</u>: This term will be used interchangeably with teaching media or channels, in this study. The broad "methods use" classification is meant and will include all sub-classifications.

<u>Group Codes</u>: In order to identify the experimental and control groups, the following symbols will be used throughout the study:

### Extension

- A....Control group (used in the pretest).
- And ... Experimental group (used in the post test), no discussion or lesson.
- A...Experimental group (used in the post test), having a discussion or lesson with a project leader.

#### Non-extension

- B....Control group (used in the pretest).
- B<sub>i</sub>...Experimental group (used in the post test).

The Subject and the Lessons as Planned

This study dealt with the first in a series of four "Food for Fitness" lessons which the extension clubs had selected to study during the year. The series was divided into the "basic four" food groups, one of which would be studied in each lesson. Traditionally, the agent would have conducted subject matter training meetings in four areas in the county for the club project leaders. This would have meant that all of the teaching effort would have been directed to only those women in organized extension clubs. Extending the same information to non-members would have meant additional time and effort if the same techniques were used. Television would make it possible for the agent to present the educational information to both extension and non-extension homemakers at the same time.

The agent approached the County Home Economics Council regarding the possibility of teaching the lessons via television rather than at the training centers in the county. The Council agreed to cooperate in testing the plan for the series of four lessons which would cover four of their monthly club meetings. The plan was:

The project leaders would attend one training meeting for the year where only instruction on teaching techniques

would be given to help them in presenting a lesson or in leading a discussion.

A kit of materials made up of literature or reference sources, a study guide based on the lesson to be presented on television that month, and suggestions for them to use in planning how to present the lesson to their club members would be mailed to the project leaders the week preceding a television lesson. This would give them an opportunity to read the materials before viewing the three programs which together would be the lesson for the month. After viewing the programs, they would study the material and make their own preparations for conducting a lesson on the same topic at their next club meeting.

The members of the clubs were aware that the four lessons would be televised during the second week of each month on the regular extension television time schedule. This trial method in which the agent would do her teaching via television had been discussed in the clubs and at two Council meetings over a four-month period before the decision was made to go ahead with the plan. It seemed important that everyone hear about the plan, think about it and discuss it and have a voice in making the decision in order to gain their cooperation. A newsletter which is sent

to members each month included a calendar of events, one of which was the lesson that would be given that month on television, and the exact time of programs. The members were asked to make an effort to view the programs so that when they met as a group they would have a common base from which to participate in a discussion or whatever the project leader had planned that they do in re-emphasizing some of the principles discussed or illustrated on the television programs. This provided the members with an opportunity to hear and see the professional present the lesson and then to raise questions, express opinions and discuss problems relative to the lesson in a group situation.

The agent, when preparing the lesson for television, could with little extra effort prepare study guides for the project leaders. She would be eliminating the time and effort in travel and in conducting the four area project leader training meetings each month.

The half-hour extension television programs on Monday, Wednesday and Friday of the second week of each month would be devoted to one lesson in the series. The televised lessons would begin in January and would end with the April program. However, this study would be based on the January lesson only.

Dairy products, one of the "basic four" food groups, was selected as the topic for the first lesson to be presented because of this particular study being undertaken, and due to the time of year. First, a topic was desired that a wide group of women would be familiar with, so knowledge gain for both extension and non-extension women could be measured. It was the consensus of the committee, who helped to formulate this study, that members and non-members would have more common knowledge about dairy products because of the emphasis in advertising and other sources on the importance of milk in the diet. Second, the pretesting, presenting of the lesson on dairy products, and the post testing were to be done during the month of January. This was a less likely time for the subjects to be exposed to other "contaminating" sources of information about dairy products.

The first half of each of the three presentations dealt with subject matter information as follows:

- Dairy products, considered from a nutritional standpoint, on Monday.
- Consumer information on dairy products on Wednesday.
- Care in handling and using dairy products on Friday.

The second half of each presentation was used to demonstrate the use of dairy products by preparing various dishes

containing a large percentage of milk or cheese. Actual foods, along with charts, were used in the presentations. Nutrition information...cost comparisons of various dairy products were also given.

Since each of the three programs on dairy products contained different information, the homemakers needed to see the three presentations in order to have had the entire lesson. The television presentations emphasized the subject matter points that were posed as questions in the questionnaires used in both the pretest and post test. These were live presentations by the agent on each of the three days.

### Measuring Instrument

A standardized questionnaire for interviewing by telephone was formulated by a committee of four: the district extension director, Dr. Uel Blank; a research specialist from the Federal Extension Service, Ward Porter; a district home economics agent, Ruth Gould; and the author.

The questionnaires, pre and post, were in four parts. One part contained screening questions to enable assignment of subjects to various control and experimental groups. A second contained a four-foil multiple choice information test of knowledge about nutritional facts presented in the lesson. A third had questions concerning the usual demographic

variables, including age, education, and income used to test comparability of groups. The fourth part was made up of questions about specific TV viewing habits, dairy products consumer behavior, and other topics not directly relevant to this study.

In the pretest administration of the questionnaire, the instrument included the second, third, and fourth parts discussed above. The screening questions were omitted because they were relevant only after the programs and lessons (by leaders) had been presented.

In the post test administration, all four parts were included, with two modifications. The first administration of the information test proved two of the thirteen questions to be unusable. One question failed to discriminate since all subjects answered it correctly; in the other, two of four multiple choice answers were found to be correct. A change was also made in the portion of questions not directly related to this study; a reading media habit question was substituted for the TV viewing habit question.

The pretest schedule contained a total of 26 questions which called for 54 different responses. The post test had 24 questions with 45 answers requested. Samples of both preand-post schedules are presented in the Appendix.

The questionnaire was tested on ten members of a church group in Marquette who were not members of an extension club nor among the list of non-members who were in the control or experimental groups. This was to determine whether the subjects would have any trouble understanding the questions and answers and also to check the ease of reading the questions. A few minor changes were made in the wording of several questions to clarify their meaning. After the revisions were made, the questionnaire was tested a second time on five other similar members of the same church group.

#### Sample

As stated in the purpose, this study was an attempt to measure the change in the level of knowledge of subjects viewing the television presentations and those subjects viewing the television presentations and then having a lesson or discussion on the topic led by a project leader at their next club meeting. The design was a before-after study to measure the change in knowledge as a result of one or both types of exposures to information on dairy products.

Since two different audiences were being studied, the extension member and the non-extension member, it was necessary to draw samples from each audience. The member population was comprised of all homemakers belonging to

extension clubs in Marquette County at that time. A numbered list was made of the 400 extension members, alphabetically, by clubs. The 200 odd numbered names on the list were called the pretest or control group A, and the 200 even numbered names formed the post test or experimental groups ( $A_d$ --TV plus a lesson) and ( $A_{nd}$ --TV and no lesson). Questions 5 and 6 on the post test schedule identified those members belonging to one or the other group.

The non-member sample was drawn from the Marquette telephone exchange directory. A numbered list comprising every twentieth residence was formed. If the twentieth residence was that of an extension member, the following residence listing was taken. The 220 odd numbered residences on the list were assigned to the pretest or control group B, and the 220 even numbered residences were assigned to experimental group B<sub>i</sub>.

#### TABLE 1

TOTAL SAMPLE OF SUBJECTS DRAWN FOR THE STUDY

Group	Number in Control	Number in Experimental	Total Number
Non-extension	220	220	440
Extension	200	200	400

### Procedure

An announcement was placed in the local daily newspaper two days prior to the pretest telephone interviews with the subjects in groups A and B. The announcement stated that Michigan State University was sponsoring a survey in Marquette County to obtain information which would help in planning extension educational programs. A similar announcement was included in the December newsletter to all extension members. This announcement also asked for the cooperation of the homemakers who would be called. The purpose of the announcements was to give credibility to the telephone calls made by the interviewers.

Ten women were recruited to do the interviewing. This seemed to be the minimum number needed to complete the telephone interviews within the designated five-day period for the pretesting of groups A and B. The ten women were trained in the techniques of interviewing by the district extension director and a research specialist from the Federal Extension Service.

The pretest schedules were identified by using a pink cover for group A (extension) and a white cover for group B (non-extension). The post test schedules were identified by

using a yellow cover for groups  $A_d$  and  $A_nd$  (extension) and a blue cover for group  $B_i$  (non-extension).

Numbers were assigned to each subject in each of the groups for coding purposes. They were Group A - 0-199, Group B - 200-499, Groups  $A_d$  and  $A_{nd}$  - 500-699, and Group  $B_i$  - 700-999.

The name, address, telephone number and code number of each subject was typed on a master list and then typed on  $3 \times 5$  cards, five subjects per card (this was done for each group). One or two of the  $3 \times 5$  cards, along with the appropriate colored schedules, were checked out to an interviewer and recorded on the master copy. This identified the interviewer with her subjects. The editing committee could check the master copy to see who had made a particular interview if they found an error in a schedule that had been turned in as completed.

The interviewers filled in the cover page of each schedule from the names on the cards before making the telephone calls. If they made repeat calls they recorded the date, time and what happened in each instance. They were instructed to make at least five attempts to reach a subject before eliminating the name. Repeat calls to try to reach a subject were made at different times of the day or evening. When the interviewer could not reach a non-member after five

calls, the committee gave the interviewer the name of the next residence listed in the telephone directory as a substitute. The correction was then made on the master list.

When the interviewer had completed the first five interviews, one of the study committee checked over the completed schedules with her to determine how well she had followed instructions and to find out if she had had any problems. After it was ascertained that an interviewer was following instructions, she was given more names to call and proceeded on her own.

The study committee edited the schedules as they were turned in by the interviewers. When an omission was noted, the interviewer who had made the initial interview was asked to call the subject back for the necessary information. The district home economist and the agent coded the answers; that is, one coded the answers and the other checked to make certain there were no errors in the coding. The research specialist checked the first twenty-five schedules that had been coded to see if the agent and home economist had followed through on his instructions for coding and for making corrections.

At the conclusion of the pretest interviews, 408 completed questionnaires were edited and coded: 189 completed interviews with extension members and 219 completed

interviews with non-extension members. Five of the ten women who did the interviewing said they would be unable to give the necessary time to the post test interviews and asked to be replaced. This meant that five recruits had to be found and trained. The post test telephone interviews were conducted by five veteran and five new interviewers. A careful check was again made with the new interviewers after their first five interviews.

Experimental group B<sub>i</sub> (non-extension) members were called within the week immediately following the television presentations on dairy products. Two-hundred and eight interviews were completed.

Experimental groups  $A_d$  and  $A_{nd}$  (extension) members were called within one or two days after their regular extension club meeting. A club meeting may have taken place shortly after the television presentations or up to three or four weeks later (the clubs maintained their regular time for holding their monthly meetings). Questions 5 and 6 in the schedule classified the subjects in group  $A_d$  (having a lesson or discussion) and group  $A_{nd}$  (not having a lesson or discussion).

The regular meeting date for each club was ascertained by checking the club secretary's report that was sent to the extension office each month. The 3 x 5 cards with the names

of the extension members in the post test (A and A nd) group were marked with the date of the club meeting so that the interviewer knew when to call for an interview.

#### TABLE 2

## COMPOSITE TABLE OF TOTAL SAMPLE: COMPLETED INTERVIEWS AND SUBJECTS DROPPED

	(	CONTROL		EXPERIMENTAL			
	Total	Com-		Total	Com-		
	Sample	pleted	Dropped	Sample	pleted	Dropped	
Non-extension	220	219	1*	220	208	12*	
Extension	200	189	11*	220	180	20**	

\*Dropped for one of the following reasons: language difficulty, extremely hard of hearing, or out of town.

\*\*Dropped for one of these reasons: moved away, hospitalized or too ill to come to the telephone, left extension or out of town.

### Classification of Variables

A brief review of the variables concerned in this study seemed to be in order before beginning the analysis of the data:

<u>Controlled variables</u>: The age, education and income characteristics of the subjects in the control and experimental groups were controlled to the extent that they were used to check comparability of groups in a field study situation. Independent variables: Those variables to which the groups were exposed:

- 1. Membership or non-membership in an extension club.
- Number of television programs on dairy products viewed: 0-3.
- 3. Group lesson or no group lesson.

Dependent variable: Or criterion. The difference in knowledge level.

#### Previous Knowledge

It was assumed that all homemakers would have some general knowledge about dairy products from various sources. This may have been informal or formal in nature. For example, they may have learned about such things as the nutritive value of dairy products from their mothers or in a class in school. They may have studied about dairy products in textbooks, read about them in magazines, newspapers and bulletins, heard about them on radio or watched and listened to television programs.

During January, when this survey was done, it was not likely that there would be any more than the normal amount of advertising about dairy products.

Extension members, at the close of the interview, were asked not to inform other extension members about having been interviewed. The chi square test of significance for independent samples was used to determine the difference between the groups. In arbitrarily selecting a significant level of .05, one-alternative critical values were also chosen because the hypotheses specify the direction of differences expected between experimental groups. The following formulas were used:

To compute the expected frequencies (21):

$$F = \frac{m_1 \times m_2}{N}$$

To compute the  $X^2$  (34):

 $x^2 = \left\langle \left\langle \frac{f^2}{F} - N \right\rangle \right\rangle$ 

Yates correction for continuity (6):

$$x^2 = \left\{ \frac{(0 - E - .5)^2}{E} \right\}$$

Major Theoretical Hypotheses

The following five major theoretical hypotheses were formulated for this study:

I. Respondents viewing three television programs on dairy products will have a greater gain in knowledge than those not viewing any of the programs, specifically:

(1) 
$$A_{nd}^{-3} > A_{nd}^{-0}$$
  
(2)  $A_{nd}^{-3} > A$   
(3)  $B_{i}^{-3} > B_{i}^{-0}$   
(4)  $B_{i}^{-3} > B$ 

II. Respondents viewing more of the television programs will have a greater gain in knowledge than those viewing fewer of the programs, specifically:

(1) 
$$A_{nd}^{-3} > A_{nd}^{-2}$$
  
(2)  $A_{nd}^{-3} > A_{nd}^{-1}$   
(3)  $A_{nd}^{-2} > A_{nd}^{-1}$   
(4)  $B_{i}^{-3} > B_{i}^{-2}$   
(5)  $B_{i}^{-3} > B_{i}^{-1}$   
(6)  $B_{i}^{-2} > B_{i}^{-1}$ 

III. Of respondents having a group lesson, those viewing three television programs will have a greater gain in knowledge than those not having a lesson and viewing 0-3 of the programs, specifically:

(1) 
$$A_d^{-3} > A_{nd}^{-3}$$
  
(2)  $A_d^{-3} > A_{nd}^{-2}$   
(3)  $A_d^{-3} > A_{nd}^{-1}$   
(4)  $A_d^{-3} > A_{nd}^{-0}$   
(5)  $A_d^{-3} > A$ 

IV. Of respondents given a group lesson, those viewing a greater number of television programs will have a greater gain in knowledge than those viewing fewer of the programs, specifically:

(1) 
$$A_d^{-3} > A_d^{-2}$$
  
(2)  $A_d^{-3} > A_d^{-1}$   
(3)  $A_d^{-3} > A_d^{-1}$   
(4)  $A_d^{-2} > A_d^{-1}$   
(5)  $A_d^{-2} > A_d^{-1}$   
(6)  $A_d^{-1} > A_d^{-0}$ 

V. Of respondents given a group lesson, those viewing less than three television programs will have a greater gain in knowledge than those not having a group lesson but viewing 1, 2 or 3 of the programs, specifically:

(1) 
$$A_d^{-2} > A_{nd}^{-3}$$
  
(2)  $A_d^{-2} > A_{nd}^{-2}$   
(3)  $A_d^{-2} > A_{nd}^{-1}$   
(4)  $A_d^{-1} > A_{nd}^{-3}$   
(5)  $A_d^{-1} > A_{nd}^{-3}$   
(6)  $A_d^{-1} > A_{nd}^{-2}$   
(6)  $A_d^{-1} > A_{nd}^{-2}$   
(7)  $A_d^{-0} > A_{nd}^{-3}$   
(8)  $A_d^{-0} > A_{nd}^{-2}$   
(9)  $A_d^{-0} > A_{nd}^{-1}$ 

### CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

### Characteristics of the Sample

The method for drawing the samples for the control and experimental groups used in the study was described in Chapter III. The post test extension members were subdivided into a lesson  $(A_d)$  and a no-lesson  $(A_{nd})$  group. The following table illustrates the number of subjects in each group from the tabulated data.

### TABLE 3

NUMBER OF SUBJECTS IN PRETEST AND POST TEST GROUPS BY EXPOSURE TO INDEPENDENT VARIABLES

Groups	Control	n	Post test Experi- mental	Num TV Q	per of by Progra	f Sub ms V 2	jects iewed 3	Total
Non- extension	(B)	219	(B <sub>i</sub> )	117	<b>2</b> 5	36	30	208
Extension	(A)	189	(A (And) (Ad)	25 24	12 13	14 40	16 36	67 113
<u>qaanalaanaa qoo aa aanoo soo a</u>							N =	796

Tables were constructed to tabulate the raw data for the education, age and for the income of the subjects

interviewed in each of the control and experimental groups. The table is as follows:

### TABLE 4

# COMPARISON OF NON-EXTENSION AND EXTENSION MEMBERS ON EDUCATION, AGE AND INCOME

	Non-extension	on Subjects	Extension	Subjects
Categories		% of		% of
	Total	Total	Total	Total
EDUCATION				
0-8th grade	67	15.7	45	12.2
9-11th grade	82	19.2	.60	16.3
H.S. graduate	184	43.1	182	49.3
Beyond H.S.	94	22.0	82	22.2
Total	427	100.0	369	100.0
Age				
Under 29 years	99	23.2	73	19.8
29 - 39	111	26.0	100	27.1
40 - 49	93	21.8	106	28.7
50 and over	124	29,0	90	24.4
Total	427	100.0	369	100.0
INCOME				
0 - \$2,500	61	14.3	40	10.8
\$2,500 - 5,000	184	43.1	98	26.6
<b>Over \$5,000</b>	150	35.1	207	56.1
Don't know	32	7.5	24	6.5
Total	427	100.0	369	100.0

The chi square test was used to ascertain whether the control and experimental groups of extension members and the control and experimental groups of non-extension members were significantly different or approximately the same in education, age and income. The same was done for extension groups and non-extension groups. The results of the tests are summarized in the following table:

### TABLE 5

SUMMARY OF  $x^2$  TESTS OF SIGNIFICANCE BETWEEN THE FIVE GROUPS ON EDUCATION, AGE AND INCOME

				x <sup>2</sup>	x <sup>2</sup>	$x^2$
Hyj	potheses			Education	Age	Income
					······································	
(1)	В	vs.	B <sub>i</sub>	3.94	2.17	6.93
(2)	A nd	vs.	Ad	3.78	4.37	6.43
(3)	A nd	vs.	A	3.73	5.61	14.9 *
(4)	A+A +A nd	vs.	B+B <sub>i</sub>	8.38*	10.05*	40.0 *
(5)	A	vs.	в	1.26	2.24	26.27*
(6)	A_+A d nd	vs.	<sup>B</sup> i	7.65	6.79	20.27*
*sig	gnificant		······		$df = 3 X^2$	.95 = 7.815

There was no significant difference found in the education, age and income of the subjects in the pretest (B) and the post test  $(B_i)$  non-extension members. Thus, the two groups were considered to be comparable.

There was no significant difference between post extension subjects in the lesson groups and the post extension subjects in the no-lesson groups in education, age and income. Therefore the two groups were considered comparable.

The pretest extension subjects did not differ significantly from the post test extension subjects in age and education, but they did differ significantly in income. However, the difference in income came from the "don't know" category. There were many more observed than expected "don't knows" in the pretest extension group and fewer observed than expected "don't knows" in the post test extension group. The most likely reason for the difference is that some of the pretest interviewers too readily accepted "don't know" answers. Since the difference came from the one category, it was decided to analyze the data from the pretest and post test extension groups as if they were comparable.

The several comparisons between the extension members and non-extension members were found to be significantly different in one or all three of the characteristics. Since it was established that the extension members were different from the non-extension members, no comparisons could be made between them. For these reasons, comparisons were confined to within the extension population alone and within the nonextension population alone.

## Criterion Data

The criterion or dependent variable in the study was the difference in knowledge level among experimental groups or between an experimental and a control group when groups were found comparable as previously discussed. Examples differed by exposure to one variable or a combination of variables. Eleven questions were used in the pretest and post test questionnaires to measure knowledge about dairy products.

The data were tabulated according to how many questions were answered correctly by each individual in each of the five groups in the study. The frequency data on knowledge scores were reduced to three categories: low scores (0-4 correct answers), medium scores (5-7 correct answers), and high scores (8-11 correct answers). The results are illustrated in the following table:

### TABLE 6

CATEGORIES	NC	NON-EXTENSION				EXTENSION				
Knowledge	Pretest B		Post test Bi		Pretest A		Post test And		Ad	
Scores	No.	%	No.	%	No.	%	No.	%	No.	%
Low (0-4)	58	26.5	60	28.8	34	18.0	14	20.9	4	3.5
Med.(5-7)	104	47.5	98	47.1	84	44.4	40	59.7	46	40.7
High (8-11)	57	26.0	50	24.1	71	37.6	13	19.4	63	55.8
Total	219	100.0	208	100.0	189	100.0	67	100.0	113	100.0

### NUMBER OF SUBJECTS IN THREE KNOWLEDGE SCORE CATEGORIES IN THE FIVE TEST GROUPS

Frequency tables were constructed to tabulate the knowledge scores of the experimental groups according to the number of the three television programs they had viewed. The tables were collapsed to formulate knowledge score tables by categories: low, medium and high scores. The tables were placed in the Appendix for reference (Tables 13-16b, pages 84-87).

# Analysis of Data

Five major theoretical hypotheses were formulated for the study, which seemed necessary, due to the many possible combinations of independent variables. In the discussion of each major (general) hypothesis, it was first noted which of the tests supported the theoretical hypothesis and the tests which did not support the theoretical hypothesis in the table following the hypothesis. This was followed by inferences or reasons why the theoretical hypothesis was not completely supported.

### Hypothesis I

 $H_i$ : Respondents viewing three television programs will have a greater gain in knowledge than those not viewing any of the programs, specifically (as noted in the following table):

### TABLE 7

KNOWLEDGE LEVELS AMONG EXTENSION (NO LESSON) GRCUPS AND NON-EXTENSION GROUPS VIEWING DIFFERENT NUMBERS OF PROGRAMS

	SUMMARY OF	THE X <sup>2</sup> TESTS**
Hypotheses		x <sup>2</sup>
(1) $A_{nd}^{-3}$ >	A <sub>nd</sub> -0	N.S.
(2) $A_{nd}$ -3 >	А	N.S.
(3) $B_{i}^{-3}$ >	B <sub>i</sub> -0	4.72*
(4) $B_{i}^{-3}$ >	B	N.S.

df=2 X<sup>2</sup>,95=4.6(cre-terl)

\*significant
\*\*Refer to Appendix for the
 contingency tables.

There was considerably less difference noted between the groups in tests (1) and (2) than between the groups in tests (3) and (4). The reason for the insignificant difference in the first two instances may have been due to the time lag between viewing the programs and being interviewed (the interviewing of the experimental extension members was done within a few days after the time of their group meeting, which could have been from a few days to a month after the television programs). Due to this time lag, the amount of knowledge gained would have progressively diminished until it reached a "leveling off" point. The length of time between viewing and being interviewed may have been a contributing factor to the lack of significant difference between viewing three television programs and not viewing any of them.

Why wasn't there a significant difference in test (4) when there was in (3)? Since neither B nor  $B_i$ -0 were exposed to the television programs nor to the group discussions, some other factor seemed to have been operating.

## Hypothesis II

 $H_i$ : Respondents viewing more of the television programs will have a greater gain in knowledge than respondents viewing fewer of the programs, specifically (as noted in the following table):

#### TABLE 8

KNOWLEDGE LEVELS AMONG EXTENSION (NO LESSON) GROUPS AND NON-EXTENSION GROUPS VIEWING DIFFERENT NUMBERS OF PROGRAMS

SUMMARY	OF THE X <sup>2</sup> TESTS*	
Hypotheses	x <sup>2</sup>	
(1) $A_{nd} - 3 > A_{nd} - 2$	N.S.	
(2) $A_{nd} - 3 > A_{nd} - 1$	N.S.	
(3) $A_{nd}^{-2} > A_{nd}^{-1}$	N.S.	
(4) $B_{i}^{-3} > B_{i}^{-2}$	N.S.	
(5) $B_{i} - 3 > B_{i} - 1$	N.S.	
(6) $B_{i}^{-2} > B_{i}^{-1}$	N.S.	

\*Refer to Appendix for the df=2 X<sup>2</sup>.95<sup>=4.6</sup> (one-tail) contingency tables.

From the contingency tables there appeared to be a non-significant trend for a gain in knowledge in all of the six tests. Viewing more programs appeared to be somewhat better than viewing fewer of the programs.

Consequently, it was inferred that the difference in achievement between the groups in each test to a varying number of exposures to the one teaching method (television) was not indicative of real difference. However, the trend seemed to be that viewing more of the programs resulted in some gain over viewing fewer of the programs.

### Hypothesis III

 $H_i$ : Of respondents given a group lesson, those viewing three television programs will have a greater gain in knowledge than those not having a lesson and viewing 0-3 programs, specifically (as noted in Table 9):

#### TABLE 9

KNOWLEDGE LEVELS AMONG EXTENSION (LESSON) AND (NO LESSCN) GROUPS VIEWING DIFFERENT NUMBERS OF PROGRAMS

SUMMARY OF X <sup>2</sup> TESTS**						
Hypotheses	x <sup>2</sup>					
(1) $A_{d} - 3 > A_{nd} - 3$	13.79*					
(2) $A_{d}^{-3} > A_{nd}^{-2}$	19.75*					
(3) $A_{d}^{-3} > A_{nd}^{-1}$	23.67*					
(4) $A_{d}^{-3} > A_{nd}^{-0}$	14.16*					
(5) $A_{d}^{-3} > A$	23.74*					

\*significant (Yates Correction df=2 X<sup>2</sup>.95<sup>=4.6(one-tail)</sup>
used)(6).
\*\*Refer to Appendix for the contingency tables.

It was assumed that the time factor contributed to the highly significant difference between the "lesson plus three viewings" group and the "no lesson but 0-3 viewings" groups. The  $A_d$ -3 group members were interviewed within two days after their club met as compared with the  $A_{nd}$ -0, 1, 2 and 3 viewing groups being interviewed anywhere from two days to a month after the television programs, depending upon when their club met. Therefore, in the  $A_{nd}$ -1, 2 and 3 viewing groups part of the difference could be probably attributed to "forgetting" during the period of time between viewing and being interviewed. This same reasoning could not be applied to groups A (control group) and  $A_{nd}$ -0 (no programs viewed), because neither one had been exposed to the television programs. The differences between  $A_d$ -3 and the respondents of  $A_{nd}$ -0 and A groups seemed to reflect a true gain which could be attributed to exposure to the two teaching methods.

It was inferred from the tests, that viewing the three television programs reinforced by a group lesson resulted in a greater gain in knowledge than viewing 1, 2 or 3 of the programs and not having a group lesson. The difference between the groups was progressively greater as the number of viewings of the "no lesson" groups decreased from 3 to 2 to 1 as noted in Table 9, tests (1), (2) and (3).

Consequently, it was inferred that the difference in achievement between the group exposed to two methods of teaching or learning experiences and the groups exposed to one or no teaching method or learning experience was indicative of real difference. That is, viewing the three television programs reinforced by a group lesson added significantly to a gain in knowledge.
### Hypothesis IV

H<sub>i</sub>: Of respondents given a group lesson, those viewing a greater number of television programs will have a greater gain in knowledge than those viewing fewer programs, specifically (as noted in Table 10):

### TABLE 10

### KNOWLEDGE LEVELS AMONG EXTENSION (LESSON) GROUPS VIEWING DIFFERENT NUMBERS OF PROGRAMS

	SUMMARY OF X <sup>2</sup> TESTS**
Hypotheses	x <sup>2</sup>
(1) $A_{d} - 3 > A_{d}$	-2 9.39*
(2) $A_{d}^{-3} < A_{d}^{-3}$	-1 N.S.
(3) $A_d - 3 > A_d$	-0 13.90*
(4) $A_{d}^{-2} < A_{d}^{-2}$	-1 N.S.
(5) $A_{d} - 2 > A_{d}$	-0 N.S.
(6) $A_{d} - 1 > A_{d}$	-0 N.S.

\*significant (Yates Correction df=2 X<sup>2</sup>\_.95<sup>=4.6</sup> (one-tail)
used).
\*\*Refer to Appendix for the contingency
tables.

It was noted in the contingency tables for Table 10 (see Appendix) that in tests (1), (2) and (3) the difference between the groups seemed to be due to the "high score" category where the  $A_d$ -3 group had the increase in scorers over what was expected by change in (1) and (3) but not in (2).  $A_d$ -1 had more high scorers than  $A_d$ -3, a reversal of what was expected.

In test (4), group  $A_d^{-2}$  had more low and middle scorers and fewer high scorers than expected when compared with group  $A_d^{-1}$  which had a larger number of high scorers and fewer low and middle scorers than expected. This, too, was a reversal of expectations.

In test (5) very little difference was noted in groups  $A_d^{-2}$  and  $A_d^{-0}$ . However, group  $A_d^{-2}$  members did gain a little from viewing two of the television programs over not viewing any of them.

In test (6), the difference between the groups came from group  $A_d$ -l having more high and fewer middle scorers than expected whereas group  $A_d$ -0 had fewer high and more middle scorers than chance could predict. The data suggest that viewing one program was somewhat better than viewing none.

Consequently, from these tests, it was inferred that the difference between the groups exposed to the two methods of teaching did not suggest real difference in most cases. However, when the three television programs were viewed, was there generally a significant gain in knowledge noted.

#### Hypothesis V

 $H_i$ : Of respondents given a group lesson, those viewing less than three television programs will have a greater gain in knowledge than those not having a group lesson and viewing 1, 2 or 3 of the programs, specifically (as noted in Table 11):

### TABLE 11

KNOWLEDGE LEVELS AMONG EXTENSION (LESSON) AND (NO LESSON) GROUPS VIEWING DIFFERENT NUMBERS OF PROGRAMS

	SUM	MARY OF X <sup>2</sup> TESTS**	
Hypotheses		x <sup>2</sup>	
(1) $A_{d}^{-2}$ >	A <sub>nd</sub> -3	N.S.	
(2) $A_{d}^{-2}$ >	A <sub>nd</sub> -2	4.99*	
(3) $A_{d}^{-2}$ >	A <sub>nd</sub> -1	11.02*	
(4) $A_{d} - 1 >$	A <sub>nd</sub> -3	N.S.	
(5) $A_{d}$ -1 >	A <sub>nd</sub> -2	6.28*	
(6) $A_{d}^{-1}$ >	A <sub>nd</sub> -1	9.16*	
(7) $A_{d}^{-0}$ >	A <sub>nd</sub> -3	N.S.	
(8) $A_{d}^{-0}$ (8)	A <sub>nd</sub> -2	N.S.	
(9) A <sub>d</sub> -0 >	A <sub>nd</sub> -1	7.07*	

\*significant (Yates Correction df=2 X<sup>2</sup>.95<sup>=4.6</sup>(one-tail)
used).
\*\*Refer to Appendix for the contingency
tables.

In tests (1), (2) and (3) there were more high scorers and fewer low scorers in the  $A_d$ -2 group than expected by chance when compared with the  $A_{nd}$ -1, 2 and 3 groups which had fewer high scorers and more low scorers than expected. The difference came mainly from the high score category.

In tests (4), (5) and (6) the difference between the  $A_d$ -l group and the  $A_{nd}$ -l, 2 and 3 groups came mainly from the high score category with the  $A_d$ -l group having more high and fewer low and middle scorers than chance could predict.

In tests (7), (8) and (9) the difference between the  $A_d$ -0 group and the  $A_{nd}$ -1, 2 and 3 groups came mainly from the high score category with the  $A_d$ -0 group having more in this cateogry than expected. All groups had about the same expected as observed frequencies in the low and middle categories.

The data indicated that: having a lesson alone was better than viewing one of the three programs; having a lesson and viewing one of the programs was better than viewing one or two programs at the .02 and .001 level of significance; and having a lesson and viewing two of the programs was better than viewing one or two programs at the .02 and .001 level of significance.

Consequently, it was inferred that the difference between groups exposed to two types of learning experiences rather than one was in more than half of the cases indicative of real difference. That is, viewing some of the television

programs reinforced by a group lesson generally added to a gain in knowledge at a significant level.

### Study Weaknesses

Several weaknesses were recognized which to some unmeasurable degree may have affected the results of the study. For the benefit of the reader who may consider conducting a similar study, the weaknesses have been listed with the hope that the shortcomings may not be repeated.

 Length of the questionnaire. This may have caused the interviewer to hurry through an interview, especially if the subject was somewhat reluctant to answer questions.

2. Number of interviews. A total of fifteen women did the interviewing, five dropping and five being added for the post test. Although the interviewers had a period of training, the chance of human error increases with each additional interviewer. No provision was made to rate the interviewers according to how carefully they had conducted the interviews -- that is, to what degree they accepted hasty answers such as "don't know" answers.

3. Attitude of subjects. There was no way of measuring the effect of the subject's attitude toward being interviewed, toward the study, and toward the extension

program. That attitude may have affected the answers. (It should be noted that previous to and during the time of the telephone interviews there was a great deal of misuse of the telephone by a group of youths in two of the cities. Much of it was of a scare or nuisance nature. There was no way of knowing how this affected the study.)

4. Time lag. There was a time lag of a few days to a month between the television programs and when a group may have met. Certain of the telephone interviews were after the group met, which placed the subjects who did not participate in a group discussion or lesson at a disadvantage. However, this was a field experiment and it seemed important to follow through without disturbing the manner in which the groups ordinarily met.

5. Division of the television lesson. Having to divide the lesson into three separate programs meant that each program had to be able to stand alone. This meant that several minutes out of each program had to be devoted to motivational purposes and to tie it to the previous program. The questionnaire only provided for finding out how many programs were viewed, but not which programs of the three. So, there was no way of knowing which program was most effective.

### CHAPTER V

#### CONCLUSIONS

#### Summary

The purpose of this field study was to gain information about two teaching methods which when combined might possibly maximize a home economics agent's effectiveness in disseminating information and producing change in two general audiences: extension and non-extension homemakers. It was a study to compare within the defined audiences, the change in knowledge about dairy products due to viewing 1-3 television programs or the change due to viewing 1-3 television programs reinforced with a group lesson or discussion on the same subject.

Three hundred and sixty-nine extension women and 427 non-extension women in Marquette County, Michigan, were the samples used for the study conducted in January and February of 1962. The requirement for inclusion in the study was that in the first sample the homemaker was presently enrolled in an extension club and with the latter sample, the homemaker was listed in the Marquette telephone exchange directory.

The samples were each divided into two groups by placing the odd numbers in the pretest or control groups and the even numbers in the post test or experimental groups. The extension and non-extension women in the control groups were interviewed by telephone during the week prior to the three television programs presented by the agent on dairy products over WLUC-TV. During the week following the three television programs, the experimental non-extension women were interviewed. Within a few days following each club meeting, the experimental extension women were interviewed.

The subject matter on dairy products was divided between the three television programs. Therefore, it was necessary to view all three of the programs in order to have the entire lesson. During the interview, when a respondent said she had viewed one program, this meant that it could have been the first, second, or third program. If she had viewed two programs, this meant that she could have viewed the first and second, the first and third, or the second and third. In other words, her reply indicated the total number of programs viewed rather than which of the programs.

The subject matter in the group discussions was based on dairy products. The project leaders who were in charge of the lessons or discussions had received a study guide and reference materials prior to the television presentations and

had attended a training meeting on teaching techniques. The project leaders developed their own lesson plans.

The format of the questionnaire was made up of three sections: one to gather information on the income, education and age characteristics; one to find out the number of programs viewed and whether they had had a group discussion or lesson; and the final section was the criterion or subject matter information to measure change in knowledge.

Eleven questions in the questionnaire were based on the subject matter in the presentations on dairy products. The control groups were used to establish a benchmark level of knowledge about dairy products. The experimental groups were exposed to one or both types of teaching methods: television alone or television and a group lesson. However, the subjects needed to view all three television programs to have the complete effect of the one method of teaching.

The differences between the groups, based on varying numbers of programs viewed, measured any gain in knowledge due to viewing more of the programs. A significant gain was expected when the three programs had been viewed.

The differences between the groups based upon varying numbers of programs viewed and having participated in a group lesson, measured any gain in knowledge due to viewing more

of the programs. A significant gain was expected when the three programs had been viewed.

The differences between groups based upon having a group lesson or not having a group lesson and viewing varying numbers of the three programs, measured any gain in knowledge due to the group lesson and viewing more of the programs. A significant gain was expected when the three programs were viewed and reinforced by having a group lesson.

#### Conclusions

1. Teaching by television alone:

a. <u>Non-extension women</u>. The comparisons between experimental groups viewing 1, 2 or 3 television programs and the control group seemed to indicate that knowledge was increased in each instance but not at the .05 level of significance.

The comparisons between experimental groups viewing different numbers of programs indicated that viewing all of the programs tended to be better than viewing two programs, and viewing two programs tended to be better than one. However, the differences were not at a significant level.

b. Extension members. The comparisons between experimental groups viewing three television programs and the groups not viewing any of the programs seemed to indicate very little gain in knowledge from the viewing. (However, the effect of "forgetting" over the period of time from viewing and being interviewed should be considered.) The comparisons between experimental groups viewing different numbers of the three programs indicated that viewing all of the programs was somewhat better than viewing fewer programs.

Teaching by television supplemented by a group lesson:

The comparisons between experimental groups having a lesson and viewing 0-3 of the television programs showed some gain in knowledge in half of the cases. There was a significant gain when the three programs were viewed in two out of three tests. This supports the theory that two learning experiences or situations, generally, produce more change than one learning experience, all other things being equal.

 Teaching by television reinforced by a group lesson compared with teaching by television alone:

The comparisons between the two treatments, that is, the complete two treatments and one or part of the one treatment (1-3 television programs) indicated a very significant gain in knowledge in the groups having members who had the complete two teaching methods.

The comparisons between the groups having a lesson and viewing less than three television programs and groups viewing 1, 2 or 3 television programs with no lesson indicated that having a group lesson or discussion added significantly, in over half of the cases, to a gain in knowledge at a .02 to a .001 level.

Therefore, the author was led to conclude that whereas some learning about dairy products took place due to viewing the television programs, a significant gain in knowledge about dairy products occurred when the television viewings were supplemented by a group lesson. A combination of the two teaching methods was better than one method alone. This is recorded in Table 12.

#### TABLE 12

# COMPARISON OF X<sup>2</sup> TESTS BETWEEN GROUPS ACCORDING TO THE NUMBER OF TEACHING METHODS USED

Groups		x <sup>2</sup>	Number of Teaching Methods Used
A3	А	23.74*	20
A3	A <sub>nd</sub> -3	13.79*	21
A <sub>nd</sub> -3	A	N.S.	10
B <sub>1</sub> -3	В	4.72*	10

\*significant (Yates Correction df=2 X<sup>2</sup>.95<sup>=4.6</sup> (one-tail) used).

### Implication for Agents

It is hoped that the results of this study suggest to home economics agents the need to consider selecting not one but a combination of appropriate teaching methods not only to "reach" the greatest number of homemakers with information but to make the audience aware of, interested in, or motivated to learn more about a new practice, idea or attitude, and finally to produce a gain in knowledge or a change in a practice. Implications derived from the study were:

1. That television is an important medium in disseminating information to a general audience. Television may be the medium selected by the agent to make the viewer aware of or interested in the new information or to motivate the viewer to seek further information.

2. That a group situation where the members have a second exposure to information about the same topic or issue is generally more effective in bringing about change than having had only one exposure. The group situation provides an opportunity for interaction of ideas among the members.

3. That a combination of teaching methods may be expected to maximize the educational impact of the agent in bringing about a change in knowledge or practices.

#### Suggestions for Future Research

It would be interesting to have more studies done similar to this one and compare their results. Perhaps the samples could be smaller and the study based on one television program and a group lesson. The data, from the groups, could be collected one week after the program, two weeks after the program, etc., until all groups would have met. This procedure would tend to equalize the no-discussion and discussion extension members (a weakness noted in this study).

Another possibility would be to publicize a particular program and have interested viewers enroll. Literature and a study guide could be sent to half of the enrollees a week prior to the televised program. The results of both groups of enrollees and a like number who did not enroll could be compared.

Experiment with using the mass media for working with and helping the senior citizens to achieve a fuller and more satisfying life. This would involve a local committee made up of representatives from several agencies and organizations and representative senior citizens to plan, organize and carry out such a program. It would mean the area would need to be surveyed to locate and interview the senior citizens beforehand and to discuss with them what their part might be in the program. An instrument could be developed to measure improvements in attitudes, as a result of participating in the program and to measure which parts of the program helped the most, and the communication media through which they gained the most help. This measuring device would be used at the end of the programs, through interviews.

APPENDIX A

### HYPOTHESIS I

### Table 7

```
Test (1) Extension (no discussion) Groups.
         Viewings: 3 vs. 0
```

Observed (0) and Expected (E) Frequencies

Score	Group	Group A -3		p A <sub>nd</sub> -0	Total
Categories	0	E	0	E	Observed
Low (0-4)	3	3.1	5	4.9	8
Med.(5-7)	9	8.2	12	12.8	21
High(8-11)	4	4.7	8	7.3	12
Total	16		25		41
				v <sup>2</sup>	- 20

$$X^{-} = .29$$

Test (2) Extension (no discussion) and Control Groups. Viewings: 3 vs. 0

Observed (0) and Expected (E) Frequencies

Score	Group A -3		Group A		Total
Categories	0	E	0	E	Observed
Low (0-4)	3	2.9	34	34.1	37
Med.(5-7)	9	7.2	84	85.8	93
High(8-11)	4	5.8	71	69.2	75
Total	16		189		205

$$x^2 = 1.01$$

~

Test (3) Non-extension Groups. Viewings: 3 vs. 0 Observed (0) and Expected (E) Frequencies

Score	Group B <sub>1</sub> -3		Group B <sub>i</sub> -0		Total
Categories	0	E	0	E	Observed
Low (0-4)	6	9.2	39	35.8	45
Med.(5-7)	14	12.9	49	50.1	63
High(8-11)	10	8.0	29	31.0	39
Total	30		117		147
• • • • • • • • • • • • • • • • • • •				$x^2 =$	= 2,23

$$X^2 = 2.2$$

Score Categories	Group B <sub>1</sub> -3		Grou	рВ	Total
	0	E	0	E	Observed
Low (0-4)	6	9.8	76	72.2	82
Med.(5-7)	14	14.1	104	103.9	118
High (8-11)	10	5.9	39	43.1	49
Total	30		219		249

Test (4) Non-extension Groups. Viewings: 3 vs. 0 Observed (0) and Expected (E) Frequencies

 $x^2 = 4.72$ 

### HYPOTHESIS II

### Table 8

Test (1) Extension (no discussion) Groups. Viewings: 3 vs.2 Observed (0) and Expected (E) Frequencies

Score	Group A -3		Group A _2		Total
Categories	0	E	0	E	Observed
Low (0-4)	3	2,1	1	1.9	4
Med.(5 <b>-7</b> )	9	11.2	12	9.8	21
High(8-11)	4	3.0	1	2.0	5
Total	16		14		30
			$x^2 = 2.51$		

Test (2) Extension (no discussion) Groups. Viewings: 3 vs. 1 Observed (0) and Expected (E) Frequencies

Score	Group A -3		Group	A <sub>nd</sub> -1	Total
Categories	0	E	0	E	Observed
Low (0-4)	3	4.6	5	3.4	8
Med.(5-7)	9	9.1	7	6 <b>.9</b>	16
High(8-11)	4	2.3	0	1.7	4
Total	16		12		28
				x <sup>2</sup> =	= 4.29

Score	Group A _2		Group A _1		Total
Categories	0	E	0	E	Observed
Low $(0-4)$	1	3.2	5	2.8	6
Med.(5-7)	12	10.2	7	8.8	19
High(8-11)	1	0.5	0	0.5	1
Total	14		12		26
				$x^2 =$	8.83

Test (3) Extension (no discussion) Groups. Viewings: 2 vs. 1 Observed (0) and Expected (E) Frequencies

Test (4) Non-extension Groups. Viewings: 3 vs. 2 Observed (0) and Expected (E) Frequencies

Score	Group B <sub>i</sub> -3		Group B <sub>i</sub> -2		Total
Categories	0	E	0	E	Observed
Low $(0-4)$	6	7.2	10	8.7	16
Med.(5-7)	14	15.8	20	18.5	34
High(8-11)	10	7.3	6	8.7	16
Total	30		36		66
				$x^2 =$	= 2.54

Test (5) Non-extension Groups. Viewings: 3 vs. 1 Observed (0) and Expected (E) Frequencies

Score Categories	Group B <sub>1</sub> -3		Group B <sub>i</sub> -1		Total
	0	E	0	E	Observed
Low (0-4)	6	6.0	5	5.0	11
Med.(5-7)	14	15.8	15	13.2	29
High (8-11)	10	8.2	5	6.8	15
Total	30		25		55
				ີ ຳ	

 $x^2 = 1.35$ 

Score	Group B <sub>1</sub> -2		Grou	p Bl	Total
Categories	0	E	0	Е	Observed
Low (0-4)	10	8.9	5	6.2	15
Med.(5-7)	20	20.7	15	14.3	35
High(8-11)	6	6.5	5	4.5	11
Total	36		25		61
				x <sup>2</sup> =	: .51

Test (6) Non-extension Groups. Viewings: 2 vs. 1 Observed (0) and Expected (E) Frequencies

#### HYPOTHESIS III

### Table 9

Test (1) Extension (discussion..no discussion) Groups. Viewings: 3 vs. 3

Observed (0) and Expected (E) Frequencies

Score	Group A <sub>d</sub> -3		Group	pA3	Total
Categories	0	E	0	E	Observed
Low (0-4)	0	2.1	3	0.9	3
Med.(5-7)	6	10.4	9	4.6	15
High(8-11)	30	23.5	4	10.5	34
Total	36		16		52

X<sup>2</sup> (Yates Corrected)=13.79

Test (2) Extension (discussion..no discussion) Groups. Viewings: 3 vs. 2

Score	Group A -3		Group	A2	Total
Categories	0	E	0	E	Observed
Low (0-4)	0	0.7	1	0.3	1
Med.(5-7)	6	13.0	12	5.0	18
High(8-11)	30	22.3	1	8.7	31
Total	36		14		50

Observed (0) and Expected (E) Frequencies

X<sup>2</sup> (Yates Corrected)=19.75

Score	Group A <sub>d</sub> -3		 Group A -1 nd		Total
Categories	0	E	 0	E	Observed
Low (0-4)	0	3.8	5	1.2	5
Med.(5 <b>-7</b> )	6	9.8	7	3.2	13
High(8-11)	30	22.5	0	7.5	30
Total	36		12		48
		······································	 2		

Test (3) Extension (discussion..no discussion) Groups. Viewings: 3 vs. 1

Observed (0) and Expected (E) Frequencies

X<sup>2</sup> (Yates Corrected)=23.67

Test (4) Extension (discussion..no discussion) Groups. Viewings: 3 vs. 0

Observed (0) and Expected (E) Frequencies

Score	Group A -3		Grou	p A <sub>nd</sub> -0	Total
Categories	0	E	0	E	Observed
Low (0-4)	0	3.0	5	2.0	5
Med.(5-7)	6	10.6	12	7.4	18
High(8-11)	30	22.4	8	15.6	38
Total	36		25		61
			2		

X<sup>2</sup> (Yates Corrected)=14.16

Test (5) Extension (discussion..control) Groups. Viewings: 3 vs. 0

Observed	(0)	and	Expected	(E)	Frequencies
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Score	Group A3		Group A		Total
Categories	0	E	0	E	Observed
Low (0-4)	0	5.4	34	28.5	34
Med.(5-7)	6	14.4	84	75.5	90
High(8-11)	30	16.1	71	84.8	101
Total	36		189		225
<del> </del>			2	/	

X<sup>2</sup> (Yates Corrected)=23.74

# HYPOTHESIS IV

# Table 10

Test (1) Extension (discussion) Groups. Viewings: 3 vs. 2 Observed (0) and Expected (E) Frequencies

Score	Group A <sub>d</sub> -3		Grou	p A2	Total
Categories	0	E	0	E	Observed
Low (0-4)	0	0.9	2	1.1	2
Med.(5-7)	6	12.3	20	13.7	26
High (8-11)	30	22.7	18	25.3	48
Total	36		40		76
<u></u>					

 $x^2$  (Yates Corrected) = 9.39

Test (2) Extension (discussion) Groups. Viewings: 3 vs. 1 Observed (0) and Expected (E) Frequencies

Score	Group A -3		Group A <sub>d</sub> -1		Total
Categories	0	E	0	E	Observed
Low (0-4)	0	0.7	0	0.3	0
Med.(5-7)	6	8.1	5	2.9	11
High(8-11)	30	27.9	8	10.1	38
Total	36		13		49
	<u></u>			$x^2 =$	2.62

Test (3) Extension (discussion) Groups. Viewings: 3 vs. 0 Observed (0) and Expected (E) Frequencies

Score	Group A <sub>d</sub> -3		Grou	p A0	Total
Categories	0	E	0	E	Observed
Low (0-4)	0	1.2	2	0.8	2
Med.(5-7)	6	12.6	15	8.4	21
High (8-11)	30	22.2	7	14.8	37
Total	36		24		60
			<u>ີ</u>		

x<sup>2</sup> (Yates Corrected)=13.90

Score	Group A <sub>d</sub> -2		Group A <sub>d</sub> -1		Total
Categories	0	E	0	E	Observed
Low (0-4)	2	1.5	0	0.5	2
Med.(5-7)	20	18.9	5	6.1	25
High(8-11)	18	19.6	8	6.4	26
Total	40		13		53
				$x^2 =$	: 1.47

Test (4) Extension (discussion) Groups. Viewings: 2 vs. 1 Observed (0) and Expected (E) Frequencies

Test (5) Extension (no discussion) Groups. Viewings: 2 vs. 0 Observed (0) and Expected (E) Frequencies

Score	Grou	Group A <sub>d</sub> -2		p A <sub>d</sub> -0	Total
Categories	0	E	0	E	Observed
Low (0-4)	2	2.5	2	1.5	4
Med.(5-7)	20	21.8	15	13.2	35
High(8-11)	18	15.6	7	9.4	25
Total	40		24		64
				$x^2 =$	· 1.78

Test (6) Extension (no discussion) Groups. Viewings: 1 vs. 0 Observed (0) and Expected (E) Frequencies

Score	Group A <sub>d</sub> -1		Grouj	p A <sub>d</sub> -0	Total
Categories	0	E	0	E	Observed
Low (0-4)	0	0.7	2	1.3	2
Med.(5-7)	5	7.0	15	12.9	20
High(8-11)	8	5.3	7	9.7	15
Total	13		24		37
				2	

 $x^2 = 4.18$ 

#### HYPOTHESIS V

### Table 11

Group A<sub>d</sub>-2 Group A \_\_\_\_\_\_ Score Total Categories 0 Ε 0 Ε Observed Low (0-4)2 3.6 3 1.4 5 Med.(5-7) 20 20.7 9 8.3 29 6.3 High (8-11) 15.7 22 18 4 Total 40 16 56

Observed (0) and Expected (E) Frequencies

 $X^2 = 3.64$ 

Test (2) Extension (discussion..no discussion) Groups. Viewings: 2 vs. 2

Observed (0) and Expected (E) Frequencies

Score	Grou	Group A2		A2	Total
<u>Categories</u>	0	E	0	E	Observed
Low (0-4)	2	2.2	1	0.8	3
Med.(5-7)	20	23.7	12	8.3	32
High(8-11)	18	14.1	1	4.9	19
Total	40		14		54
			2		

X<sup>2</sup> (Yates Corrected) = 4.99

Test (3) Extension (discussion..no discussion) Groups. Viewings: 2 vs. 1

Score	Grou	Group A <sub>d</sub> -2		Al	Total
Categories	0	E	0	E	Observed
Low (0-4)	2	5.4	5	1.6	7
Med.(5-7)	20	20.8	7	6.2	27
High(8-11)	18	13.9	0	4.2	18
Total	40		12		52

Observed (0) and Expected (E) Frequencies

X<sup>2</sup> (Yates Corrected)=11.02

Test (1) Extension (discussion..no discussion) Groups. Viewings: 2 vs. 3

Score	Group A <sub>d</sub> -1		Group	A3	Total
Categories	0	Е	0	E	Observed
Low (0-4)	0	1.3	3	1.7	3
Med.(5 <b>-7</b> )	5	6.3	9	7.7	14
High(8-11)	8	5.4	4	6.6	12
Total	13		16		29

Test (4) Extension (discussion..no discussion) Groups. Viewings: 1 vs. 3

Observed (0) and Expected (E) Frequencies

 $x^2$  (Yates Corrected) = 2.54

Test (5) Extension (discussion..no discussion) Groups. Viewings: 1 vs. 2

Observed (0) and Expected (E) Frequencies

Score	Group	A1	Group A -2 nd		Total
Categories	0	E	0	E	Observed
Low (0-4)	0	0.5	1	0.5	1
Med.(5-7)	5	8.2	12	8.8	17
High(8-11)	8	4.3	1	4.7	9
Total	13		14		27
			2		

X<sup>2</sup> (Yates Corrected)=6.28

Test (6) Extension (discussion..no discussion) Groups. Viewings: 1 vs. 1

Score	Group	A <sub>d</sub> -1	Group A _1 _1		Total
Categories	0	E	0	E	Observed
Low (0-4)	0	2.6	5	2.4	5
Med.(5-7)	5	6.2	7	5.8	12
High(8-11)	8	4.2	0	3.8	8
Total	13		12		25
			2		

Observed (0) and Expected (E) Frequencies

X<sup>2</sup> (Yates Corrected)=9.16

Obs	served	(0) and	Expected	(E)	Freque	encies
Score	Group	pA0	Gro	oup	A <sub>nd</sub> -3	Total
Categories	0	E		)	E	Observed
Low (0-4)	2	3.0	. 3	3	2.0	5
Med.(5-7)	15	14.4	9	•	9.6	24
High(8-11)	7	6.6	4	Ļ	4.4	11
Total	24		16	5		40
					2	

 $x^2 = .96$ 

Test (8) Extension (discussion..no discussion) Groups. Viewings: 0 vs. 2

Observed (0) and Expected (E) Frequencies

Score	Grou	Group A _ Group A		p A -2 nd	Total
Categories	0	E	0	E	Observed
Low (0-4)	2	1.9	1	1.1	3
Med.(5-7)	15	17.0	12	10.0	27
High(8-11)	7	5.0	1	3.0	8
Total	24		14		38
			,	$x^2 =$	2.7

Test (9) Extension (discussion..no discussion) Groups. Viewings: 0 vs. 1

Observed	(0)	and	Expected	(E)	) Frequencies
----------	-----	-----	----------	-----	---------------

Score	Grouj	pA0	Grou	up A	l Total
Categories	0	E	0	E	- Observed
Low (0-4)	2	4.7	5	2.3	7
Med.(5-7)	15	14.7	7	7.3	22
High(8-11)	7	4.7	0	2.3	7
Total	24		12		36
			x <sup>2</sup>	(Yates	Corrected)=7.07

Test (7) Extension (discussion...no discussion) Groups.

Viewings: 0 vs. 3

# Table 13

Number of	Non-E	Extension		Extensio	n
Answers	В	B <sub>i</sub>	A	And	A d
0	0	0	4	0	0
1	5	3	4	1	0
2	12	11	3	1	0
3	14	18	13	3	2
4	27	28	10	9	2
5	44	36	17	11	10
6	34	37	34	15	16
7	26	25	33	14	20
8	27	25	36	7	27
9	24	19	25	6	17
10	5	2	8	0	10
11	1	4	2	0	9
Total	219	208	189	67	113

Tabulation of Individual Knowledge Scores in the Five Test Groups by Number of Correct Answers

# Table 14a.

Tabulation of Individual Knowledge Scores in Non-extension Group B by Number of Programs Viewed i

Number of				
Answers	0	1	2	3
0	0			
1	3			
2	9		1	1
3	12	1	4	1
4	15	4	5	4
5	16	6	11	3
6	20	8	4	5
7	13	1	5	6
8	16	3	2	4
9	11	1	3	4
10	1			1
11	1	1	1	1
Total	117	25	36 N	30 = 208

# Table 14b.

Grouped Knowledge Scores of Non-Extension Group B by Number of Programs Viewed

Score		0		1		2		3
Categories	No.	%	No.	%	No.	%	No.	%
Low (0-4)	39	33.3	5	20.0	10	27.8	6	20.0
Med.(5-7)	49	41.9	15	60.0	20	55.6	14	46.7
High (8-11)	29	24.8	_5	20.0	_6	16.6	10	33.3
Total	117	100.0	25	100.0	36	100.0	30	100.0

N = 208

# Table 15a.

Tabulation of Individual Knowledge Scores in Extension Group A (no discussion) by Number of Programs Viewed

Number of				
Answers	0	1	2	3
0				
1	1			
2	1			
3	1		1	1
4	2	5	0	2
5	6	1	2	2
6	4	1	5	5
7	2	5	5	2
8	4		1	2
9	4			2
10				
11				
Total	25	12	14	16
			N =	67

### Table 15b.

Grouped Knowledge Scores of Extension Group A (no discussion) by Number of Programs Viewed

Score		0		1		2		3
Categories	No.	%	No.	%	No.	%	No.	%
Low (0-4)	5	20.0	5	41.7	1	7.1	3	18.8
Med.(5-7)	12	48.0	7	58.3	12	85.8	9	56.2
High (8-11)	8	32.0	_0	0.0	_1	7.1	_4	25.0
Total	25	100.0	12	100.0	14	100.0	16	100.0
		- <del>F</del>				N =	67	

# Table 16a.

Tabulation of Individual Knowledge Scores in Extension Group A (discussion) by Number of Programs Viewed

Number of				
Answers	0	1	2	3
	· · · · · · · · · · · · · · · · · · ·			
0				
1				
2				
3	1		1	
4	1		1	
5	5		5	
6	5	1	7	3
7	5	4	8	3
8	6	2	12	7
9	1	2	1	13
10		1	2	7
11		3	3	3
Total	24	13	40	36
			N =	113

Table 16b.

Grouped Knowledge Scores of Extension Group A (discussion) by Number of Programs Viewed

	0		1		2		3
No.	%	No.	%	No.	%	No.	%
2	8.3	0	0.0	2	5.0	0	0.0
15	62.5	5	38.5	20	50.0	6	16.7
_7	29.2	8	61.5	18	45.0	30	83.3
24	100.0	13	100.0	40	100.0	36	100.0
	No. 2 15 <u>7</u> 24	No. % 2 8.3 15 62.5 <u>7 29.2</u> 24 100.0	No.         %         No.           2         8.3         0           15         62.5         5           7         29.2         8           24         100.0         13	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

N = 113

- النف

APPENDIX B

Upper Peninsula Extension Center PRETEST Michigan State University Household No.: Phone Number: Interviewer: Date Time What Happened Call #1 Call #2 \_\_\_\_\_ Call #3 Call #4 Call #5 Telephone Benchmark Survey of Special Marquette County Home Economics Extension Program Telephone Introduction (for Members) "Good morning (or "afternoon," "evening"). Is Mrs. (NAME OF CLUB MEMBER) at home? IF SPEAKING PROCEED WITH INTRODUCTION BELOW. IF NOT AVAILABLE INQUIRE AS TO WHEN OR WHERE MRS. COULD BE REACHED. IF NOT AT HOME, AND IT IS POSSIBLE TO REACH HER AT A DIFFERENT NUMBER, CALL HER THERE. IF NOT TO BE AVAILABLE BY NOON SATURDAY, JANUARY 27, CROSS NAME OFF LIST. "Well, this is (NAME OF INTERVIEWER). Michigan State University is sponsoring a survey here in Marquette County to obtain information for planning extension educational programs. You may have read about it in the newspaper. "I'd like very much to talk with you about T.V. programs on food." QUESTIONS USED FOR THIS PARTICULAR STUDY 11-Information questions No. 8, 10, 11, 12, 13, 14a, b, c, 16, 17, 19 3-Characteristics questions No. 23, 24, 26

Name of respondent (club member):

Address:

			FOR OFFICE Please of	USE ONLY do not
	(Record Number (for office use	e only))	Code No.	Column No. 1, 2, 3
	Television Information	1		
1.	, do you have a TV s in working order, or do you ha access to one?	set ive	( )	4
	a. Yes	(1)		
	b. No	(2)		
	(IF "NO," SKIP TO Q. #8)			
2.	Does the TV set that you usual watch receive:	ly	()	5
	a. Only WLUC-TV, Channel 6, Marquette	(1)		
	b. WLUC-TV plus the two Green Bay stations by means of the cable	(2)		
	c. Other channels	(3) 🖊		
	d. D.K.	(4) 📿		
	(IF ONLY WLUC-TV SKIP TO QUEST	ION 4.)		
3.	Which one of these three TV st or channels, if any, do you wa often on week-day afternoons? OFF 3 CHANNELS AND THEN "X" AN	ations tch <u>most</u> (READ ISWER.)	( )	6
	a. MarquetteWLUC-TV - Channel 6 (#5 on Cable)	(1)		
	b. Green BayWLUK-TV - Channel 11 (#4 on Cable)	(2)		

Time started interviewing:\_\_\_\_\_

.

		1.1	•	
		βr.	Code No.	Column No.
	c. Green BayWFRV-TV -		-	
	Channel 5 (#2 on Cable)	(3) 🗁		
	d. Watch 2 or more equally	(4)		
	e. Seldom (or never) watch	(5) 📿		
	f. D.K.	(6) 📿		
4.	About how many times a week, i do you watch WLUC-TV, Channel Marquette (Channel 5 on Cable weekdays, Monday through Frid Between the hours ofdo y it:	f at all, . 6, e) on lay? rou watch		
	4-5 $2-3$ Once Then			
	Hrs Times Times > Once	Don	·+	
	of Week Week Week a Wk	Never Know	C J	
	$V_1 = 1$ $2$ $3$ $4$	5 6	*	
	8-10 / / / /		7 ()	7
	a.m.			
		$\square$ $\square$	( )	8
	$12-1 \square \square \square$		( )	9
	p.m. 1-3 /7 /7 /7 /7		()	10
	p.m		•	
	3-5		( )	11
	<b>b</b> •m•			
5.	During the past month or so, remember seeing any of the "A with Ingrid" TV programs over Channel 6 (WLUC-TV) (Ch. #5 c from 3:00-3:30 p.m.?	do you at Home Marquette on Cable)	e's ( )	12
	a. Yes	(1) 📿		
	b. No	(2)		
	c. D.K.	(3) 🗁		
	(IF "NO," SKIP TO Q. #8)			

6	The "At Home With Ingrid" che	NT. T	Code No	Column No
0.	is on three times a weekon Monday, Wednesday and Friday. During recent weeks, would yo say that you have watched this programon the average	bu Ls	()	13
	a. Three times a week?	(1) 📿		
	b. Twice a week?	(2)		
	c. Once a week?	(3)		
	d. Or not very often?	(4)		
	e. D.K.	(5) 🗾		
7.	During the past month (Januar you remember seeing any of th With Ingrid" shows in which M Sain, the Marquette County Ho talked about meat and meat pr	ry), do ne "At Home Mrs. Olive ome Agent, reparation?	()	14
	a. Yes	(1)		
	b. No	(2)		
	c. Not sure	(3) 🗾		
	KNOWLEDGE AND USE OF DAIRY PR	RODUCTS		
	Now,(Name), we'd ] get your ideas about the use dairy products.	ike to of		
8.	What do you think is the <u>one</u> important health reason for m the diet? Would you say becau	most milk in Mse:	()	15
	a. It contains fat?	(1) 🗾		
	b. It supplies liquid for the body?	(2)		
	<pre>c. It contains lots of     calcium?</pre>	(3)		
	d. It has vitamins?	(4)		
	e.D.K.	(5) 🖊		
	Now, here's another question.			

9.	In your opinion, about how man	ny	Code No.	Column No.
	child drink each day?	01	()	16
	(DO NOT READ NUMBERS)		LIMO)	TED)
	a. One	(1)		
	b. Two	(2)		
	c. Three-Four	(3) 🖊		
	d. More than four	(4)		
	e. Other (specify)	(5) 🗾		
	f. D.K.	(6) 🗾		
10.	What do you think is the least sive form of milk to buy in or get calcium? Is it:	t expen- rder to	()	17
	a. Liquid skim milk?	(1)		
	b. Cottage cheese?	(2)		
	c. Powdered milk?	(3)		
	d. Canned evaporated milk?	(4)		
	e. Or some other	(5) 🖊		
	f. D.K.	(6) 🖊		
11.	How would you say the cost of calcium you get in cheddar cho compares with that in whole m Is it:	the eese ilk?	()	18
	a. More expensive in cheddar cheese?	(1) 📿		
	b. About the same?	(2)		
	c. Less expensive in cheese	?(3) 🖊		
	d. D.K.	(4)		

10	In making a baland quatant		Code No.	Column No.	
12.	you bake it in a pan of w	vater?	()	19	
	a. Yes	(1)			
	b. No	(2)			
	c. D.K.	(3)			
13.	At what temperature would a custard? Would it be:	l you bake	( )	20	
	a. Under 300 <sup>0</sup> F	(1)			
	b. 300 to $350^{\circ}$ F	(2)			
	c. Over 350° F	(3)			
	d. D.K.	(4)	- 		
14.	In your opinion, what wil you add 1/4 cup of dry mi standard recipe?	ll happen if llk to a			
	a. Will it change the taste?	(1) Yes // (2) No // (3) D.K.//	()	21	
	b. Will it change the texture?	(1) Yes // (2) No // (3) D.K.//	()	22	
	<pre>c. Will it change its    food value?</pre>	(1) Yes // (2) No // (3) D.K.//	()	23	
	d. Will it have little or no effect?	(1) Yes // (2) No // (3) D.K.//	() (d:0M1	24 ITTED)	
				Code. No.	Column No.
-----	-------------------------------	--	---	-----------	------------
15.	To p clear help PAUS	reserve the quality, nliness of liquid mil much to: (CHECK ONE E BETWEEN EACH.)	flavor, and lk, does it AT A TIME,	(No.15	OMITTED)
	a.	Keep it in a covered container?	(1) Yes // (2) No // (3) D.K.//	()	25
	b.	Keep it in the dark?	?(1) Yes // (2) No // (3) D.K.//	()	26
	c.	Keep it cold or refrigerated?	(1) Yes // (2) No // (3) D.K.//	()	27
	d.	Are there are points important? (Please specify)	s you think	( ) )	28
16.	Would in m sive pork	d you say the food va ilk is more expensive or about as expensive or beef?	alue contained e, less expen- ve as that in	()	29
	a.	More	(1)		
	b.	About same	(2)		
	c.	Less	(3) 🗾		
	d.	D.K.	(4)		
17.	The homog	most important reasor genizing milk is to:	n for	()	30
	a.	Make it safe to drin	nk? (1) 🖊		
	b.	Keep the cream from rising?	(2)		
	c.	Improve vitamin cont	tent? (3) 🖊		
	d.	Or some other (spec:	ify) (4) 🖊		
	e.	D. K.	(5)		

18.	Now, Mrs, would me a rough estimate of the	you give quantity bat you	Code No.	Column No.
	used in your household <u>last</u> What about:	week?		
	(READ EACH ITEM SEPARATELY)			
	a. Cheddar or processed cheese?	(lbs.)	()()	31-32
	b. Cottage cheese?	(pts.)	()()	33-34
	c. Ice cream?	(pts.)	()()	35-36
	d. Milk for cooking or drinking?	(qts.)	()()	37-38
	e. Of the liquid milk, how much, if any, was powdered milk?		()()	39-40
	f. Did you use other milk products? (1 (2 (3	) Yes // ) No // ) D.K.//	()	41
	g. D.K.	(1)		
	(FOR FINAL EDITOR'S USE ONI	Y)		
	No milk used	(2)		
19.	In your opinion are there in differences between brands dry milk in the steps necess make them suitable for dring	mportant of powdered sary to king?	()	42
	a. Yes	(1)		
	b. No	(2)		
	c. D.K.	(3)		
			l	1

			Code No.	Column No.
20.	During the past year has anyon your household used powdered of milk for drinking?	n <b>e</b> in dry	( )	43
	a. Yes	(1)		
	b. No	(2)		
	c. D.K.	(3) 🗾		
	PERSONAL DATA			
	We'd like some information abo people to whom we talk. If yo mind would you tell us:	out the ou don't		
21.	How many persons are now livin household including yourself?	ng in this	()()	44-45
	a. (Write number)	-		
22.	How many persons in your house are:	ehold		
	a. Under 13 yrs.		()	46
	b. 13 to 19 yrs.		()	47
	c. 20 to 59 yrs.		( )	48
	d. 60 years and over		( )	49
	e. D.K.		( )	50
23.	Would you mind telling me the or year of school that you cor	last grade	e ()	51
	a. 0 - 8th grade	(1) 🖊		
	b. 9 – 11th grade	(2)		
	<pre>c. l2th grade (h.s.graduate)</pre>	(3) 🗾		
	d. Beyond high school	(4) 🗾		
	e. D.K.	(5)		

			Code No.	Column No.
24.	We'd like to be able to group persons we talk to according If you don't mind, would you tell me which age group you a Are you:	the to age. please re in?	( )	52
	a. Under 30 yrs.	(1)		
	b. 30-39 yrs.	(2)		
	c. 40-49 yrs.	(3) _7		
	d. 50 and over	(4)		
	e. D.K.	(5) 🗾		
25.	During the past year or so, d work for pay as much as 100 d outside your home? (1) (2) (3)	lid you lays Yes // No // D.K.//	()	53
26.	It would help us to be able t families according to income Would you please tell us whic following groups includes you year's family income?	o group level. ch of the ar last	()	54
	a. Under \$2,500 a year	(1)		
	b. \$2,500 to \$5,000 a year	(2)		
	c. Over \$5,000 a year	(3) 🖊		
	d. D.K.	(4) 📿		

Well, \_\_\_\_\_\_(name) that's the end of the questions. Thanks very much for your cooperation and help!

Uppe:	r Per	ninsula Exter	sion Cen	ter	POST TEST
MICH	igan	State Univer	sity	Household No .:	
				Phone Number:	
				Interviewer:	
		Date	Time	What Ha	ppened
Call	#1				
Call	#2				
Call	#3				
Call	#4	·····			
Call	#5				
Telej "Ga (NZ	phone ood r AME ( IF SI AVAII COULI TO RI	Home Ec introduction f CLUB MEMBE PEAKING PROCE ABLE INQUIRE D BE REACHED. EACH HER AT A	on (for M afternoo R) at ho ED WITH AS TO W IF NOT DIFFERE	Extension Progr lembers; post T. on," "evening"). ome? INRODUCTION BEL THEN OR WHERE MR AT HOME, AND I ENT NUMBER. CALL	am V. program) Is Mrs OW. IF NOT S T IS POSSIBLE HER THERE.
"We Sta Cor ca	ell, ate U unty tiona wspag	this is Jniversity is to obtain ir al programs. per.	(N sponsor formatio You may	AME OF INTERVIE ing a survey he on for planning have read abou	WER). Michigan re in Marquette extension edu- t it in the
"I on	'd 1: food	lke very much 1."	to talk	with you about	T.V. programs
		QUESTIONS U	ISED FOR	THIS PARTICULAR	STUDY
1	3-Vie 1-Ini 3-Cha	ewing and hav formation - N aracteristics	ving a le No. 8, 9, 14, 15 S - No. 2	sson, No. 4, 5, 10, 11, 12, 13 , 17 1, 22, 24	6 a, b, c,

Name of respondent (club member):

Address:

Time started interviewing: \_\_\_\_\_

			FOR OFFIC	E USE ONLY
			Please	do not
			write in	these columns
	(Descuel Numbers (for office use	1	Code No.	Column No.
	(Record Number (for office use	e oniy))		1, 2, 3
	Television Information	<u>1</u>		
1.	, do you have a TV s in working order, or do you ha access to one?	set ave	()	4
	a. Yes	(1)		
	b. No	(2)		
2.	How many times a week, if at a do you watch WLUC-TV, Channel Marquette, on weekdays from 3: 3:30 p.m. (Mondays through Fridays)?	all, 6, :00 to	()	5
	<b>a.</b> 4 - 5 times	(1)		
	b. 2 - 3 times	(2)		
	c. Once/week	(3) 🗾		
	d. Seldom or <b>n</b> ever	(4) 🗾		
	e. D.K.	(5) 🖊	,	
3.	During the early part of Febru you remember seeing any of the Home With Ingrid" TV shows on Marquette TV station in which the Marquette County Home Agen talked about milk and dairy pr (THESE PROGRAMS WERE ON MONDAY WEDNESDAY, AND FRIDAY, FEB.5,	uary, do WAt the Mrs.Sai nt, coducts? 7, & 9t	n, h) ()	6
	a. Yes	(1)		
	b. No	(2)		
	c. D.K.	(3) 📿		

				r
	IF ANSWER IS "YES"		Code No.	Column No.
4.	About how many times did you this program by Mrs. Sain? ( WAIT FOR ANSWER)	watch PAUSE,	()	7
	a. 3 times	(1)		
	b. 2 times	(2)		
	c. Once	(3) 🗾		
	d. Don't remember	(4) 🗾		
	FOR MEMBERS ONLY			
5.	Did you attend a meeting of your Extension Club since Fe <b>b</b> ruary 10?		()	8
	a. Yes	(1)		
	b. No	(2)		
	IF "NO," SKIP TO QUESTION #7			
6.	At this Extension Club meetin there a discussion or lesson about milk and dairy products	g was period ?	()	9
	a. Yes	(1)		
	b. No	(2)		
	c. D.K.	(3) 💋		
			1	

			Code No.	Column No.
7.	How would you prefer to get home economics information? it be through: (Choose two)	new Would	()	10
	a. Newspapers	(1)		
	b. Magazines	(2)		
	c. Meetings (elaborate)	(3) 🗾		
	d. Radio	(4)		
	e. TV	(5) 🗾		
	f. Or some other? (Specify)	(6) 🖊		
	Now,(Name), we'd get your ideas about the use products.	like to of dairy		
8.	What do you think is the <u>one</u> important health reason for the diet? Would you say bec	most milk in ause:	()	11
	a. It contains fat?	(1)		
	b. It supplies liquid for the body?	(2)		
	c. It contains lots of calcium?	(3)		
	d. It has vitamins?	(4)		
	e. D.K.	(5) 🗾		
	Now, here's another question	:		

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102

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9.	What do you think is the leas	st	Code No.	Column No.
	expensive form of milk to buy order to get calcium? Is it:	y in :	()	12
	a. Liquid skim milk?	(1)		
	b. Cottage cheese?	(2)		
	c. Powdered milk?	(3) 🗾		
	d. Canned evaporated milk?	(4)		
	e. Or some other?	(5) 🖊		
	f. D.K.	(6) 🖊		
10.	How would you say the cost of calcium you get in cheddar ch compares with that in whole r Is it?	f the neese nilk?	()	13
	a. More expensive in cheddar cheese?	(1)		
	b. About the same?	(2)		
	c. Less expensive in cheese	≥?(3)		
	d. D.K.	(4)		
11.	In making a baked custard wow bake it in a pan of water?	ald you	()	14
	a. Yes	(1)		2 9 -
	b. No	(2)		
	c. D.K.	(3) 🖊		

		Code No.	Column No.
12.	At what temperature would you bake a custard? Would it be:	()	15
	a. Under 300° F. (1) 🖊		
	b. 300 to 350° F. (2) $\square$		
	c. Over $350^{\circ}$ F. (3)		
	d. D.K. (4)		
13.	In your opinion, what will happen if you add 1/4 cup of dry milk to a standard recipe? For example:		
	a. Will it change the (1) Yes taste? (2) No (3) D.K.	()	16
	b. Will it change the (1) Yes texture? (2) No (3) D.K.	()	17
	c. Will it change its (1) Yes food value? (2) No (3) D.K.	()	18
			(Skip 19)
14.	Would you say the food value contained in milk is more expensive, less expen- sive or about as expensive as that in pork or beef?	()	20
	a. More (1) 🦯		
	b. About same (2)		
	c. Less (3) 🗾		
	d. D.K. (4)		
		1	1

	Code No.	Column No.
15. What is the most important reason for homogenizing milk? Is it to:	()	21
a. Make it safe to drink? (1) $\square$		
b. Keep the cream from rising? (2)		
c. Improve vitamin content? (3)		
d. Or some other (specify)		
e.D.K. (5)		
16. Now, Mrs, would you give me a rough estimate of the amount of dairy products that you used in your household <u>last</u> week? What about:		
(READ EACH ITEM SEPARATELY)		
a. Cheese (not counting cream or cottage cheese?(lbs.)	()()	22-23
b. Cottage cheese?(pts.)	()()	24-25
c. Ice cream?(qts.)	()()	26-27
<pre>d. Milk for cooking and drinking? (Examples: bottled, canned, baby preparation, powdered, chocolate)(qts.)</pre>	()()	28-29
e. Of this milk, how much, if any, was powdered milk?	()()	30-31
<pre>f. Did you use other milk products?</pre>	()	32
g. No dairy products used. (1)		

17.	In your opinion, are there important differences between kinds or types of powdered dry milk in the steps necessary to make them suitable for drinking?	Code No.	Column No. 33
	a.Yes (1) 🦯	7	
	b. No (2)	7	
	c. D.K. (3)	7	
18.	During the past year has anyone in your household used powdered dry milk for drinking?	: (_)	34
	a.Yes (1) 🦯	7	
	b. No (2)	7	
	c. D.K. (3)	7	
	PERSONAL DATA		
	We'd like some information about the people to whom we talk. If you don't mind would you tell us:	:	
19.	How many persons are now living in your household including yourself?	(.)()	35-36
	a. (Write number)		
20.	Now, would you give us an idea of their ages? For example, how many are:		
	a. Under 13 yrs.	()	37
	b. 13 to 19 yrs.	()	38
	c. 20 to 59 yrs.	()	39
	d. 60 years and over	()	40
	e. D.K	()	41

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			Lada Na	Column No.
21.	Would you mind telling me the last grade or year of school that you completed?		( )	42
	a. 0 - 8th grade	(1)		
	b. 9 - 11th grade	(2)		
	c. 12th grade (h.s.grad			
	d. Beyond high school	(4) 🗾		
	e. D.K.	(5) 🗾		
22.	We'd like to be able to g persons (homemakers) we t according to age. If you mind, would you please te age group you are in? Ar	()	43	
	a. Under 30 yrs.	(1) 🗾		
	b. 30-39 yrs.	(2)		
	c. 40-49 yrs.	(3) 🗾		
	d. 50 and over	(4) 🗾		
	e. D.K.	(5) 🗾		
23.	During the past year or s work for pay as much as d outside your home?	so, did you LOO days (1) Yes // (2) No // (3) D.K.//	( )	44

			Code No.	Column No.
24.	It would help us to be able to group families according to income level. Would you please tell us which of the following groups includes your last year's family income?		( )	45
	a. Under \$2,500 a year	(1)		
	b. \$2,500 to \$5,000 a year	(2)		
	c. Over \$5,000 a year	(3) 📿		
	d. D.K.	(4)		

Well, \_\_\_\_\_(name), that's the end of the questions. Thanks very much for your cooperation and help!

Time interview ended\_\_\_\_\_\_ Edited immediately after interview \_\_\_\_\_(initials)

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