AN EVALUATION OF THE EFFECTIVENESS OF AN ADULT EDUCATION MEETING

by 1264

JOYCE T. DIERKING

B. S., Kansas State University, 1966

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1970

Approved by:

Curtis Trent

Major Professor

ACKNOWLEDGMENTS

The researcher expresses appreciation to Professor Curtis Trent, Chairman of her graduate study committee, for his helpful assistance, wise counsel and sincere interest during her graduate study.

Appreciation is expressed to other members of the committee---Professors Dorothy Harrison, Glenn Busset and Wilber Ringler for their interest and helpful suggestions.

The researcher is grateful to Sedgwick County Extension personnel---County Director Donald W. Ingle for his consent to conduct the research in Sedgwick County; Mrs. Ruby Truax, County Extension Home Economist, for her time and effort in making arrangements for the meeting to collect the data; and to the women who participated in the study.

Appreciation is expressed to the College of Education and to the Department of Family and Child Development, Kansas State University, for the loan of the video tape equipment. The researcher especially wishes to recognize Mr. Phil Goodnow for his technical assistance in producing the video tape used in the study.

Gratitude is expressed to her husband, Gary, for his encouragement during the writing of this paper.

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AUTOBIOGRAPHY

The researcher was born in Ft. Smith, Arkansas August 22, 1943. She attended elementary schools in New York, Illinois, Ohio, Michigan, Tennessee, and Kansas and in 1961 graduated from Clearwater High School, Clearwater, Kansas. She was active in 4-H Club work for 10 years and was named one of six national winners in the 4-H foods and nutrition program in 1961.

She graduated from Kansas State University in 1966 with a B. S. in Home Economics with emphasis in foods and nutrition. During the period 1966-68 she was a specialist in foods and nutrition for the Kansas Extension Service coordinating a special state-wide project on teenage nutrition.

Other professional experience includes a part-time position (while enrolled as a graduate student) as Administrative Assistant for the Manhattan Adult Basic Education program and a position coordinating a short-term research project for the Adult Education Division of the Kansas State Department of Education.

The researcher is now Food Service Manager of The Saint Mary Hospital, Manhattan, Kansas.

She married Gary R. Dierking in August, 1969.

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CHAPTER I

INTRODUCTION

Purpose

The purpose of the study was to evaluate the effectiveness of an adult education meeting in terms of cognitive learning acquired by the participants. The level of knowledge was measured prior to the meeting, immediately following, and thirty days after the meeting.

Background and Need

For the past fifty years the need for an effective system of systematic evaluation has been recognized by the Cooperative Extension Service. This realization has been given adequate lip service but little has been done to fulfill the need.

A number of graduate studies have been undertaken on evaluation but still there has been no widespread use of evaluation techniques by Extension workers. Most evaluation by county staff members has been that of casual, everyday observation, self-checking evaluation or do-it-yourself evaluation. A check sheet may have been used, yet the fact remains that little, if any, of the evaluation has been systematic.

Meetings represent one of the major methods of teaching in Extension. Little has been done in the past to measure the effectiveness of the meeting as an educational method.

Extension workers have little training in evaluation. For the most part, undergraduate training has been in subject matter areas, usually Home Economics or Agriculture. Graduate training, for the most part, has been in subject matter or Education with little emphasis on evaluation. At Kansas

State University, the catalog lists no courses offered in evaluation at either the graduate or undergraduate level.

The following diagram explains some of the reasons why extension evaluation is difficult---programs often are informal, short-term and the individual may establish his own objectives.

Factors related to evaluation (1 and 2) vary with characteristics of programs (3, 4, 5, and 6).[1]

Greater	←	(1.) Acceptability of External Evaluation	→	Lesser
Greater	←	(2.) Feasibility of Measurement	→	Lesser
Formal	←	(3.) Formality	→	Informal
Long-term	←	(4.) Duration	→	Short-term
Simple	←	(5.) Nature of Objectives	→	Complex
Societal	←	(6.) Source of Objectives	→	Individual

Today there is a greater need for evaluation than ever before. Evaluation contributes to educational efforts by giving necessary information about situations for planning sound programs.

Evaluation is needed to determine progress toward goals and to aid in the development of future plans. The process of evaluation affords several benefits. These include: (1) helps improve future programs, (2) illuminates weak points in teaching, (3) forms a basis for reporting, (4) aids in pruning

[1] Wilson Thiede, "Evaluation and Adult Education," Adult Education, eds. Gale Jensen, A. A. Liveright, and Wilbur Hallenbeck (Adult Education Association of the U.S.A., 1964), p. 304.

the program and (5) increases professional expertise.[2]

Statement of Objectives

The objectives established for the study were as follows:

1. To determine the amount of learning that takes place during an adult education meeting when nutrition information is presented to mothers of teenagers.

2. To determine how much of the learning that takes place during an adult education meeting is retained after a period of 30 days.

3. To determine if there are relationships between the amount of learning that takes place during an adult education meeting and such personal and situational factors as age, place of residence, education, attitude and method of presentation.

Statement of Hypotheses

The following hypotheses were established for the study:

1. There is no significant difference in the level of knowledge of teenage nutrition possessed by a group of mothers of teenagers before and immediately after a presentation on teenage nutrition.

2. There is no significant difference in the level of knowledge of teenage nutrition possessed by a group of mothers of teenagers before and thirty days after a presentation on teenage nutrition.

3. There is no association between the amount of educational information that can be recalled immediately following a presentation on teenage nutrition to a group of mothers of teenagers and such personal and situational

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[2]Presented in Methods of Extension Teaching class, Kansas State University, May 9, 1969 by Dr. Warren Prawl.

factors as age, education, attitude and place of residence.

4. There is no association between the amount of educational information that can be recalled thirty days following a presentation on teenage nutrition to a group of mothers of teenagers and such personal and situational factors as age, education, attitude and place of residence.

5. There is no significant difference in the amount of educational information that can be recalled by mothers of teenagers immediately following a presentation on teenage nutrition when the information is presented live and via video tape.

6. There is no significant difference in the amount of educational information that can be recalled by mothers of teenagers thirty days following a presentation on teenage nutrition when the information is presented live and via video tape.

Definition of Terms

Several terms have been defined to clarify their meaning as used in this study.

Amount of learning. The amount of learning refers to the difference between the pre-test score and the post-test score.

Amount of retention. The amount of retention refers to the difference between the pre-test score and the follow-up score.

Attitude. Attitude is a measure of how the people feel about the value of the meeting as measured by a Verner-Kropp attitude scale.

Audience. Audience refers to those persons hearing the presentation or the assembly of hearers.

Evaluation. Evaluation is the process of determining how well one is doing what he set out to do.

Follow-up test. The follow-up test is the test given thirty days after the presentation on teenage nutrition was made at the meeting held in connection with the study to determine what the learners retained from the presentation after this period of time.

Learner. The learner is the person participating in the study.

Post-test. The post-test was the test given immediately after the presentation on teenage nutrition was made at the meeting held in connection with the study to determine what the learners could recall from the presentation.

Pre-test. The pre-test was given at the beginning of the meeting held in connection with the study to determine the learners' level of knowledge about teenage nutrition when they arrived at the meeting.

Recall. Recall refers to the difference between the post-test score and the follow-up test score.

Teenager. A teenager is a person 13-17 years of age.

Video Tape. Video tape is a recording of both video and audio portions together on one tape which may be used at a later date to see the original presentation repeated.

Theoretical Orientation

Evaluation must take place at all stages of the Adult Education process. It includes not only a measurement of the results of the work, but also an analysis of the activities leading toward the results.[3] It must be constant and must be a vital part of the total activity. Evaluation should include analysis at each of the following levels: planning of the activity, execution

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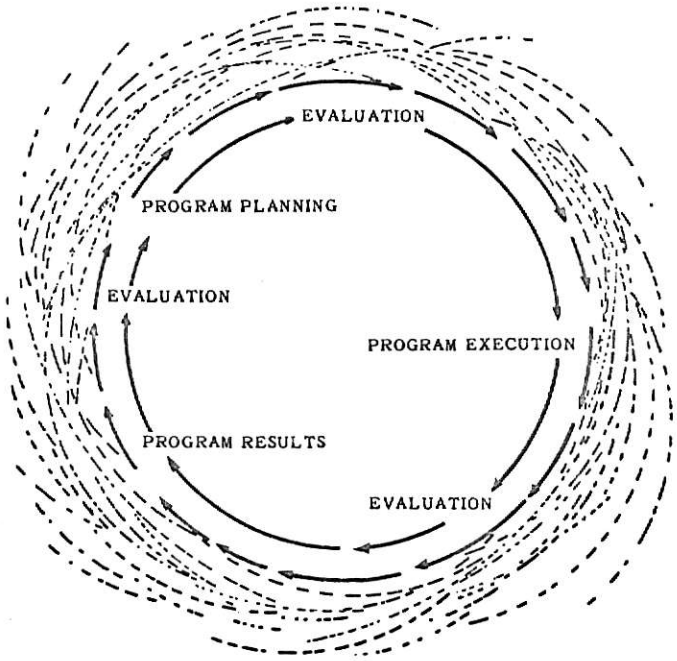
[3]Patrick G. Boyle and Emory J. Brown, Evaluation of Cooperative Extension Work, Extension Service, College of Agriculture and National Agricultural Extension Center for Advanced Study (Madison: University of Wisconsin, 1960) p. 2.

of the activity and determination of the results of the activity. Boyle and Brown[4] diagram the evaluation process with circular movement:



Sound evaluation always must be in terms of what one sets out to do---the objectives one has in mind.[5] One must always keep in mind the people who are involved in the activity when evaluating. When evaluating, one must constantly be aware of biases that may be present within himself and others and he must be aware of the variations of interpretation of the results.

In addition to being considered as a measurement of the results of one's work, evaluation has also been expressed as a way of learning, a state of mind, an attitude, a process of investigation and a search for the truth. Through

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[4] Ibid.

[5] Joseph L. Matthews, "The Place of Evaluation in Extension," Evaluation in Extension, ed. Darcie Byrn (Topeka, Kansas: H. M. Ives & Sons, Inc., 1962), p. 10.

evaluation, one can determine where he is in relation to where he wants to go.[6]

Evaluation may be described as having two main stages.[7] The evaluation which takes place while making arrangements and during the procedures of the activity may be described as the "means evaluation." The changes which take place at the conclusion of the activity may be studied by the use of "ends evaluation."[8] The end evaluation of results must always be evaluated in relation to the teaching objectives.[9] The teaching objectives must always be related to the needs of the people and should be specifically developed to include the people to be taught, the subject matter to be taught and the behavioral change expected.[10]

The five basic steps in any type of evaluation are:

1. Define precisely the purpose of the evaluation.

2. Clarify the kinds of information you will need to answer the questions you have in mind.

3. Collect the information.

4. Analyze the information.

5. Interpret and apply the findings.[11]

Evaluation of Adult Education activities may vary greatly. There is a

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[6] Boyle and Brown, op. cit., p. 3.

[7] Matthews, op. cit., p. 11.

[8] Ibid.

[9] Boyle and Brown, op. cit., p. 8.

[10] Ibid.

[11] Ibid.

great difference between casual evaluation and scientific research.[12] The difference usually is a matter of degree rather than kind.[13] It lies in the difference in the degree to which the scientific method is necessary in the solution of problems.

Casual Everyday Evaluations	Self-Checking Evaluations	Do-it-Yourself Evaluations	Extension Studies	Scientific Research

[14]

Casual everyday evaluations need no further explanation. Self-checking evaluations represent a conscious attempt to apply the principles of evaluation.[15] Do-it-yourself evaluations involve more planning and application of the principles of evaluation. They are more systematically done, more carefully planned and usually require some technical help.

Extension studies are more involved and complicated to plan and carry out than any of the previously mentioned categories on the scale.

Scientific research is just what the name implies. These studies usually cover a long period of time and involve highly technical, on-going problems.

Research in the social sciences, such as the type involved in Adult Education, is difficult. People are complex things to study. Reactions are not static and any evidence that determines changes in people is difficult to

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[12]Fred P. Frutchey, "Evaluation---What It Is," Evaluation in Extension, ed. Darcie Byrn (Topeka, Kansas: H. M. Ives & Sons, Inc., 1962), p. 2.

[13]Ibid.

[14]Ibid.

[15]Ibid.

obtain. While it is much more desirable to determine changes in people, it is sometimes necessary and desirable to measure accomplishments in terms of the learning situation provided. Research may also be hindered due to the fact that some people dislike research and do not want to participate in it.

Scope and Procedure

The research design. A letter was sent to all members of Extension Homemaker Units and to all 4-H foods leaders in Sedgwick County, Kansas. A total of 2193 letters was sent. The letter asked if the woman had a teenager 13-17 years of age and if so, would she be willing, as the mother of a teenager, to participate in a research study? A card was enclosed for her to return indicating her willingness to participate in the study.

One hundred and thirty-two women returned the cards saying that they wished to participate and that there were teenagers in their family in the specified age group. Six women returned the card wishing to participate but had no teenagers. These six cards were not used. Copies of the letter and the card are in the appendix.

A random selection of 100 women to participate in the study was made. Fifteen women were selected randomly as alternates for the study. The random selection was made by placing all 132 cards in a basket, shaking them up and drawing them out. As each card was drawn, it was marked with an indicating mark and was replaced in the basket.

Each of the 100 women selected was sent a second letter notifying her of her selection to participate in the study. A card was enclosed for the women to return indicating a confirmation of their plans. Fewer than 75% of the cards were returned during a period of two weeks therefore a letter of notification to participate in the study was sent to the 15 alternate women.

A total of 87 cards indicating an intent to participate in the study were returned from both the original and alternate groups of women. Copies of the letter and the card are in the appendix.

Three days before the meeting, a reminder of the date, time and place was sent to each of the 87 women. This card is shown in the appendix.

As the women entered the meeting room, each was given a pre-numbered slip of paper that was color-coded. Pink and yellow slips were distributed alternately as the women arrived and each color was numbered consecutively. Those with pink slips were members of the group to view the "live" presentation and those with yellow slips were members of the group to view the "video" presentation. The number indicated the "participant number" of each person.

A general introduction to the meeting was given the entire group. Mrs. Ruby Truax, Sedgwick County Extension Home Economist, welcomed the group and thanked them for their interest and participation. She introduced Dr. Curtis Trent who gave brief instructions to the group including how the study would be conducted, the importance of their participation, and what to expect. He requested that the women take no notes and that they not ask questions until the post-test was concluded. He asked each person to write her name and address in the blanks indicated on the slip she was given on arrival at the meeting. He requested that they retain the half of the slip with the number only and return the half that contained the number as well as their name and address that they had just filled in. He assured each person that she would never be referred to by name in the study and that her name and address were needed for referral purposes only by those conducting the study.

He then divided the group into live and video groups. Each group assembled in its respective place in each end of the meeting room in the County Extension Office and the room was divided by drawing a curtain.

The following teaching objectives were established for the meeting:

1. For mothers of teenagers attending the meeting on teenage nutrition to be able to recall immediately following the presentation, 50 percent more information on teenage nutrition than they possessed prior to the presentation as evidenced by the difference in pre-test and post-test scores.

2. For mothers of teenagers attending the meeting to be able to recall thirty days following the presentation, 20 percent more information on teenage nutrition than they possessed prior to the presentation as evidenced by the difference in pre-test and follow-up test scores.

According to Mager[16], the most important characteristic of a useful objective is that it identifies the kind of performance that will be accepted as evidence that the learner has achieved the objective. The teaching objectives for this study were written in this way.

Dr. Trent gave the pre-test to the 31 members of the video group and showed the 30-minute video tape of the researcher presenting, "Don't Gonk Out." This tape was made prior to the meeting date. Mrs. Truax gave the pre-test to the 31 members of the live group and introduced the researcher who gave the same presentation as on video tape.

It was decided that the researcher would not appear in person before the video group until the conclusion of the meeting since her appearance in person might influence members of the group watching the video tape. In a usual situation utilizing video tape, the viewers would not actually see the person making the video tape presentation.

Upon conclusion of the presentation in both groups, the post-test, which

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[16]Robert F. Mager, Preparing Instructional Objectives (Palo Alto, California: Fearon Publishers, 1962), p. 13.

included an attitude scale, was given. Copies of both the pre-test and post-test are in the appendix. Tests were color coded to correspond to the group to which the person was assigned as well as to indicate the difference between pre-test and post-test.

After each person had completed the post-test, the groups were again drawn together by opening the curtain. Each person was given the opportunity to ask questions or make comments.

A follow-up test to determine retention of information was mailed to each study participant one month after the meeting date. A letter was sent with each test giving brief instructions and informing each participant that upon receiving her completed test, she would be mailed a complete printed copy of the presentation, "Don't Gonk Out" as well as other materials on teenage nutrition. Sixty-one of the 62 tests were returned. However, only 60 were returned in time to be included in the study. The follow-up test was identical to that of the post-test.

Development of the data collecting instrument. The test was developed by the researcher to determine the basic knowledge mothers possessed about teenage nutrition and to measure the amount of information that was gained during the meeting and retained after a period of 30 days. A value of ten points was given for each of the 15 questions answered correctly making a possible score of 150.

An attitude scale of the Thurston-Chave type was used to determine the attitude toward the method of presentation. The scale was developed by Russell Kropp and Coolie Verner[17] to measure the over-all reaction to the total

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[17]Russell P. Kropp and Coolie Verner, "An Attitude Scale Technique For Evaluating Meetings," Adult Education, 3:212-215, Summer, 1957.

activity. A copy of this scale is in the appendix.

Both the attitude scales and the tests were scored by the researcher.

The data collecting instrument and attitude scale were pre-tested in Manhattan, Kansas, with a group of eight mothers of teenagers who volunteered for the purpose. Only the video tape method of presentation was used. The group was asked for constructive criticism and suggestions were incorporated into the final instrument.

Analysis of the data. The data were punched on IBM cards and programmed for computer analysis. The data were analyzed in terms of the null hypotheses. The significance of difference between the means (pre-test, post-test and follow-up test scores) was analyzed statistically by use of the t test. The coefficient of correlation was used to measure relationships between the amount of learning and the independent variables; age, educational level, place of residence and attitude. Significance of difference between learning and method of presentation was measured by the t test.

Limitations of the study. No attempt has been made to generalize the results of the study beyond the population designated---mothers of teenagers who were members of Extension Homemaker Units or who served as 4-H foods leader of a local 4-H club in Sedgwick County, Kansas in 1969.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The basic purpose of evaluation is to stimulate growth and improvement.[18] Adults strive to improve themselves to reach desired goals. Verner expresses the importance of evaluation to every human endeavor as a means of measuring progress or achievement.[19] It is particularly important as a way of determining the worth of Adult Education to society and appraising the efficiency and effectiveness of the ways it performs the tasks society has set for it.[20]

Adult education programs are designed to produce changes in people. These changes may be in knowledge, ways of thinking, attitudes or conduct.[21] In an increasingly complex world, the evaluative process assumes growing importance and significance. Horizons of Adult Education are greater than ever before. Because of the technological revolution in communications and transportation, more people may now be contacted by the various types of mass media. More people are influenced by agencies and organizations through some of these same channels. It is no longer adequate to know that adults practice a certain technique or method of doing something; determination must also be made as to why they use the practice they do, if they use it correctly and their attitude toward the practice.

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[18]Homer Kempfer, Adult Education (New York: McGraw-Hill, 1955), p. 399.

[19]Coolie Verner, Adult Education (Washington, D.C.: The Center for Applied Research in Education, Inc., 1964), p. 91.

[20]Ibid.

[21]"Hurdles for Evaluators," Adult Leadership, 1:11, April, 1953.

The Evaluation Process

There is a definite need for more research in the evaluation process. Little research is found in the literature on evaluation, especially in the area of Adult Education. Evaluation has been broadly defined as "how well you are accomplishing what you are trying to do." Thiede defines evaluation as "the process of determining the extent to which objectives have been attained."[22]

The major purpose of evaluation is the over-all improvement of the individual. Thiede[23] further explains the major purpose by listing other purposes of evaluation as:

1. guiding individual growth and development
2. improving programs
3. defending programs
4. facilitating and encouraging staff growth and psychological security

Evaluation is a difficult and complex process according to Thiede.[24] There are abundant reasons why people find evaluation difficult. Some of these reasons are:

1. goals are frequently unstated; when stated, they are sometimes vague and almost always broad and encompassing.
2. individual changes take place; they do not wait for measurement to be made.
3. it is difficult to devise ways to measure educational changes taking place.

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[22]Thiede, op. cit., p. 291.

[23]Ibid., p. 292.

[24]Ibid.

4. interpretation of results is uncertain and difficult.

Evaluation must always be in terms of goals and objectives.[25] Adult learning experiences are often difficult to evaluate because goals or objectives may not be stated for the experience itself. In order for evaluation to be effective, objectives should possess certain characteristics. Thiede lists some of these characteristics as follows:

1. should be achievable.
2. should be in harmony with other objectives to which the educator is committed.
3. should be such that in the process of achieving them, it is possible to conceive of and move toward further objectives.
4. should be agreed on and have common meaning to all concerned.
5. should be closely related to desired learner behavior.[26]

Evaluation is a complex process. It must be learned and its use must be constant to be most effective. Even though much is involved in the evaluative process, the process itself may contain as few as these five steps:

1. determining what to evaluate
2. defining the desired behavior
3. determining acceptable evidence
4. collecting evidence
5. summarizing and evaluating the evidence.[27]

In addition to the wide variety of factors mentioned which may affect

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[25] Kempfer, op. cit., p. 400.

[26] Thiede, op. cit., p. 296.

[27] Ibid.

evaluation, Thiede[28] points out that duration of the program and the source of the objectives may also be variable factors to be considered in the evaluative process.

Evaluation in Adult Education

The adult is task orientated.[29] This fact must be kept in mind when evaluating adult programs. The truest test of the merit of an Adult Education program lies in the results produced---what difference does the program make in the behavior of the participants?[30]

Learning is most efficient on the part of the adult if he establishes his own objectives from which evaluation will take place. This should be done as a part of the learning experience. He should then conduct his own evaluation. No adult is in a better position to evaluate the degree to which a goal is obtained than the student himself.[31] Only the adult student himself fully realizes his own exact goal.

Behavior is a difficult concept to measure in adults because of constant fluctuation. An adult does not always react to an identical experience in an identical way because his past experiences, on which he bases a reaction, are never identical at any given moment. Research based on evaluation reactions of large numbers of adults is needed. Kempfer states, "Much research is needed in devising evaluative procedures which involve the maximum number of adults in growth processes."[32]

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[28] Ibid., p. 303.

[29] Ibid., p. 301.

[30] Kempfer, op. cit., p. 413.

[31] Thiede, op. cit., p. 302.

[32] Kempfer, op. cit., p. 419.

Factors Affecting Adult Learning

Many factors affect the processes of evaluation and Adult Education. Only a few of these factors have been chosen for consideration in this study. They include: age, educational level, place of residence, number of teens in the family, attitude of participants and method of presentation.

Age. Adults can and do learn. Although learning power of adults is relatively constant through the years, it will vary according to the amount of education, the experience and the social background and the circumstances of the individual.[33] It has been shown that the ability of adults to learn declines at a slow rate of about 1 percent a year from ages 45-70 years.[34]

The adult may learn slowly because he feels that he is not as capable of learning as he once was. He may belittle himself. Brunner states, "Often adults learn less than they might partly because they underestimate their power to learn and partly because of self-limitations resulting from the narrowness of their interests and from the related attitudes and values which they hold."[35]

Level of education. The level of previous education of an adult is related to the amount of learning that takes place. Brunner states that the amount of schooling received is definitely related to intelligence test performance.[36] This also has been shown in studies by Lorge and Owens and a

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[33]Edmund deS. Brunner et al., An Overview of Adult Education Research (Chicago: Adult Education Association of the U.S.A., 1959), p. 13.

[34]Ibid., p. 8.

[35]Ibid., p. 9.

[36]Ibid., p. 18.

more recent study at Columbia University.[37]

Adults who need education the most are those who are least likely to seek out activities for self-improvement. London and Wenkert found that those adults with a better education are more likely to participate in adult education activities and the audience is largely middle class.[38]

Place of residence. There is abundant evidence that participation in formal associations outside the church is relatively more widespread in urban than in rural communities.[39] However, rural participation is rapidly increasing. Brunner says one reason for this rise is the considerable increase in federal programs in rural America since 1933, all of which work through local committees or organizations.[40]

Within a metropolitan area there is evidence of sharp neighborhood differences in patterns of participation due to residential segregation.[41]

Participation patterns in suburban and fringe areas show considerable variability.[42] They reflect some survival of rural patterns, modified by rapid increases in special-interest participation according to the occupational, educational, cultural, religious, and family characteristics of the residents.[43]

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[37] Ibid.

[38] Jack London and Robert Wenkert, "American Adult Education," Adult Leadership, 13:196, December, 1964.

[39] Brunner, op. cit., p. 108.

[40] Ibid.

[41] Ibid., p. 109.

[42] Ibid.

[43] Ibid.

Social Attitudes. Attitudes are related to other attributes of individuals.[44] They almost always relate to such subgroupings as age, sex, income, education, urban or rural residence and other influential social factors. They are not "free-floating" but are always formed in relation to objects, ideas or persons.[45] Attitudes differ systematically from one educational level to another.[46] Attitudes may be linked with the occupation of a person.

In a study by Trenaman, analysis showed that attitude scores were most strongly associated with a person's occupation, experience of educational broadcasts, reading of the more serious items in the newspaper, and literary membership, in that order.[47] He also found in his study that attitude was highly significantly correlated with comprehension measure.[48]

Method of presentation. Video tape is fast becoming one of the most important new teaching methods in the field of education. It is being recognized that it has many uses including that of classroom use. The Kansas Industrial Extension Service purchased video taping equipment listing the three following uses:

1. Lectures of descriptions of new technical processes will be taped for use in on-going educational classes. It is expected that this type of tape would be used only once.
2. A permanent series of tapes on technical subjects would be available

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[44] Ibid.

[45] Ibid., p. 53.

[46] Ibid., p. 57.

[47] J. M. Trenaman, Communication and Comprehension (Plymouth, Great Britian: The Bowering Press, 1967), p. 75.

[48] Ibid.

for review or teaching new personnel. Visiting lecturers noted in their field would also be taped as a permanent addition to the video tape file.

3. Video tape would be used as a training tool for the instructor who conducts KIES sponsored courses in industry.[49]

In a study of a summary of findings on educational television, the most typical results were that there was no significant difference in the amount of learning that took place between groups taught by television and groups taught by conventional classroom instruction.[50] The study also pointed out the following summary statements:

1. Educational television performance has outstripped evaluation.
2. Learning can occur in teaching situations in which television is used.
3. Television is effective in those areas of teaching which depend heavily on cinematic techniques.
4. In general, students have favorable attitudes toward television instruction.
5. There is no reliable evidence to suggest that television can solve the teacher shortage or bring about large savings in educational expenditures.[51]

Many educational television programs may be telecast by the video tape method as opposed to a live production. Groups of people may now see TV telecasts never thought possible a few years ago by the use of video tape.

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[49]"Video Tape TV System to Aid KIES Information Dissemination," The Kansas Industrial Journal, p. 4, October, 1968.

[50]"Educational Television," Search, 4:3, October, 1958.

[51]Ibid.

Important persons can be brought into the home or into the classroom or meeting room through the use of video tape. "Instant replays" as a part of televised sports events have become commonplace through the use of video tape. It is possible to reuse video tape with success equal to that of the live presentation. Therefore, the cost per performance is lowered.[52]

Macomber lists several techniques that he feels are effective in TV teaching.[53] These include: lecture and blackboard; interview or panel discussion; film, still pictures, slides, filmstrips or photos; charts and graphs; mock-ups, models and machines; audio recordings; drama; magnet board animation; celluloid "crawl" and demonstrations.

Little difference is to be expected in the amount of learning that takes place between similar groups seeing the same presentation in person or on video tape. This fact was proven by Reid and MacLennan[54] who have compiled 333 abstracts related to instructional television and film. They found that the vast majority of studies comparing televised instruction with direct instruction revealed "no significant differences" in measured performance. In compiling the abstracts they noted that the studies were uneven in quality making comparison difficult.

In conclusion, Reid and MacLennan pointed out two characteristics of TV research:

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[52]Eva Medved, "Teaching by Television," Journal of Cooperative Extension, 4:34, Spring, 1966.

[53]F. Glenn Macomber and Laurence Siegel, Experimental Study in Instructional Procedures (Oxford, Ohio: Miami University, 1960), p. 67.

[54]J. Christopher Reid and Donald W. MacLennan, Research in Instructional Television and Film, United States Office of Education (Washington: Government Printing Office, 1967).

1. Deficiencies in experimental designs, the most common being nonrandom groups and the uncontrolled mixing of variables.

2. Large number of nonsignificant differences that have been obtained.[55]

Macomber has identified some problems of TV teaching.[56] He found the major problem was determining the extent to which professional personnel could be employed for TV production, and the extent to which non-professional personnel could be utilized. Other problems include the determination of where a program originates---TV studio or classroom; the extent and nature of rehearsals and where the decision making power must lie---with the instructor or the director.

Kansas State College of Pittsburg, in a study conducted by Black[57], stated that no difference existed in the amount of information retained between film-taught and conventionally-taught chemistry and physics students. After 7 months, the chemistry students taught by the conventional method obtained higher scores on retention than those taught by film but this difference was not statistically significant.

Much research remains to be done in the areas of educational television and video tape. Research being done will be more valuable when variables can be controlled.

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[55] Ibid., p. 16.

[56] Macomber, op. cit., p. 65.

[57] William A. Black, Retention Value Of Filmed Science Courses (Office of Education, ERIC, Microfiche), p. 22.

CHAPTER III

ANALYSIS OF DATA

Introduction

This chapter deals with the presentation and analysis of the data collected for the study.

The purpose of the study was to evaluate the effectiveness of an adult education meeting in terms of cognitive learning acquired by the participants. The level of knowledge was measured prior to the meeting, immediately following, and thirty days after the meeting.

The participants were mothers of teenagers, selected at random, who were either members of Extension Homemaker Units or were currently serving as a 4-H foods leader of a local 4-H club in Sedgwick County, Kansas.

The topic of the meeting was "Teenage Nutrition." The *t* test and Pearson Product Moment Correlation Coefficients were the measures used for statistical analysis.

The specific objectives of the study were:

1. To determine the amount of learning that takes place during an adult education meeting when nutrition information is presented to mothers of teenagers.

2. To determine how much of the learning that takes place during an adult education meeting is retained after a period of 30 days.

3. To determine if there are relationships between the amount of learning that takes place during an adult education meeting and such personal and situational factors as age, place of residence, education, attitude and method of presentation.

For purposes of analysis, six hypotheses were established based on the

objectives of the study. The data are presented and analyzed under the headings of the six hypotheses.

Hypothesis 1

> There is no significant difference in the level of knowledge of teenage nutrition possessed by a group of mothers of teenagers before and immediately after a presentation on teenage nutrition.

In an effort to determine how much learning took place, the following teaching objective was established:

> For mothers of teenagers attending the meeting on teenage nutrition to be able to recall, immediately following the presentation, 50 percent more information on teenage nutrition than they possessed prior to the presentation as evidenced by the difference in pre-test and post-test scores.

An effort was made to determine if the stated teaching objective was met. The left side of Figure 1 shows the mean level of knowledge of teenage nutrition possessed by participants before and immediately following the meeting. The mean score on the pre-test was 90.7 and the score on the post-test was 140.1 which resulted in a mean difference of 49.5 points. The level of knowledge increased by 54 percent which exceeded the level established in the stated teaching objective by four percentage points.

The mean difference in the level of knowledge possessed by the participants before and immediately following the meeting was significant at the .05 percent level as indicated by the *t* test. Therefore, hypothesis 1 was rejected.

Hypothesis 2

> There is no significant difference in the level of knowledge of teenage nutrition possessed by a group of mothers of teenagers before and thirty days after a presentation on teenage nutrition.

In an effort to determine how much learning was retained during the 30 day period, the following teaching objective was established:

> For mothers of teenagers attending the meeting to be able to

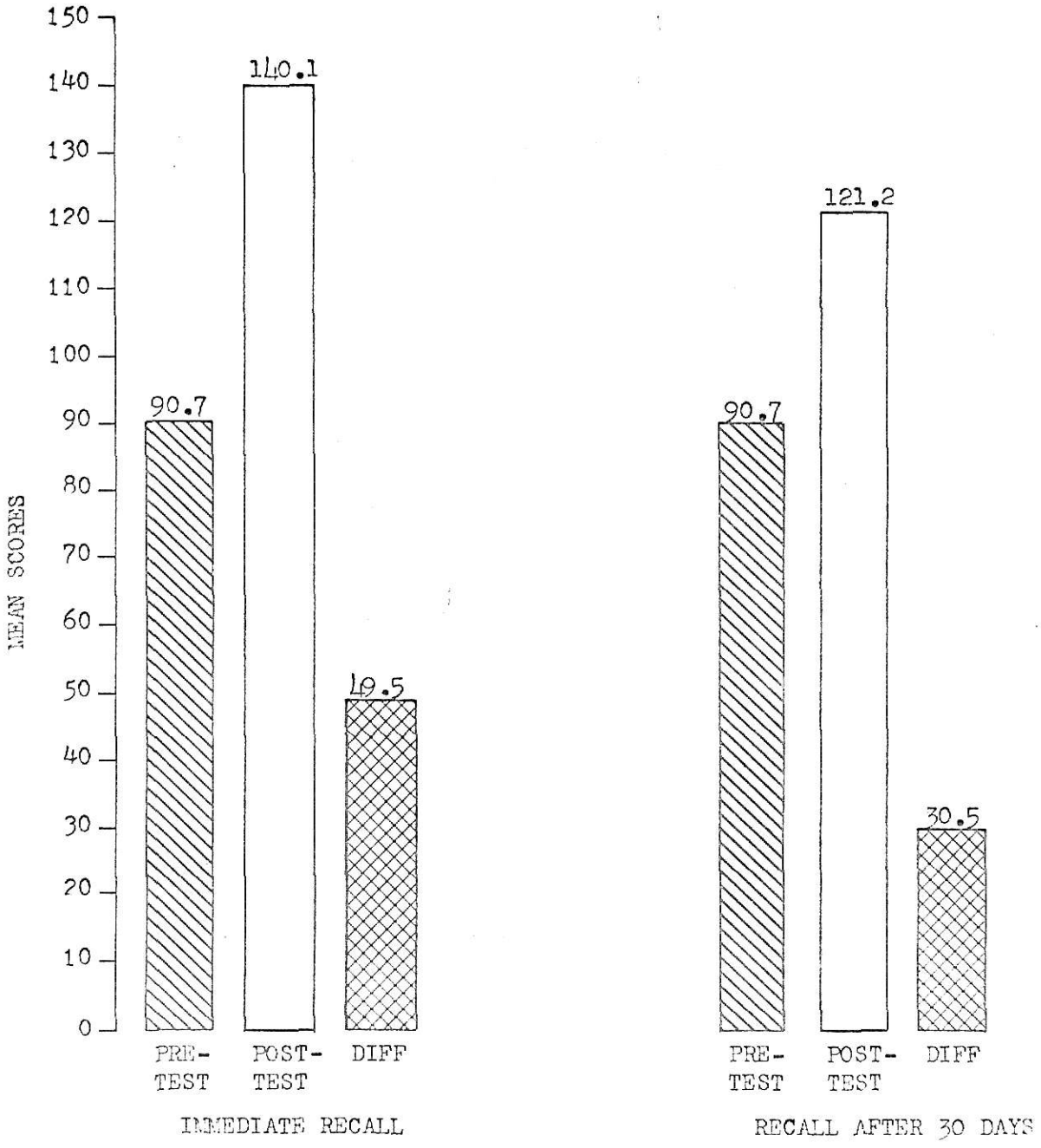

Figure 1. Immediate recall and recall after 30 days.

recall, thirty days following the presentation, 20 percent more information on teenage nutrition than they possessed prior to the presentation as evidenced by the difference in pre-test and follow-up test scores.

The right side of Figure 1 shows the mean level of knowledge of teenage nutrition possessed by participants before and thirty days after the meeting. The mean score on the pre-test was 90.7 and the score on the follow-up test was 121.2 which resulted in a mean difference of 30.5 points. The level of knowledge increased by 33.5 percent which exceeded the level established in the stated teaching objective by 13.5 percentage points.

The mean difference in the level of knowledge possessed by the participants before and thirty days following the meeting was significant at the .05 percent level as indicated by the t test. Therefore hypothesis 2 was rejected.

Hypothesis 3 and 4

3. There is no association between the amount of educational information that can be recalled immediately following a presentation on teenage nutrition to a group of mothers of teenagers and such personal and situational factors as age, education, attitude and place of residence.

4. There is no association between the amount of educational information that can be recalled thirty days following a presentation on teenage nutrition to a group of mothers of teenagers and such personal and situational factors as age, education, attitude and place of residence.

Age. Immediately following the presentation on teenage nutrition, the "under 35" age group recalled 47 percent more specific information than on the pre-test; the "36-50" age group recalled 57 percent more; and the "51 and over" group recalled 42 percent more information than on the pre-test. This is shown in Figure 2 as the knowledge level at the end of the meeting. A negative relationship of -0.07945 was found between amount of learning and age indicating that the younger participants learned slightly more. The relationship was not significant at the .05 percent level.

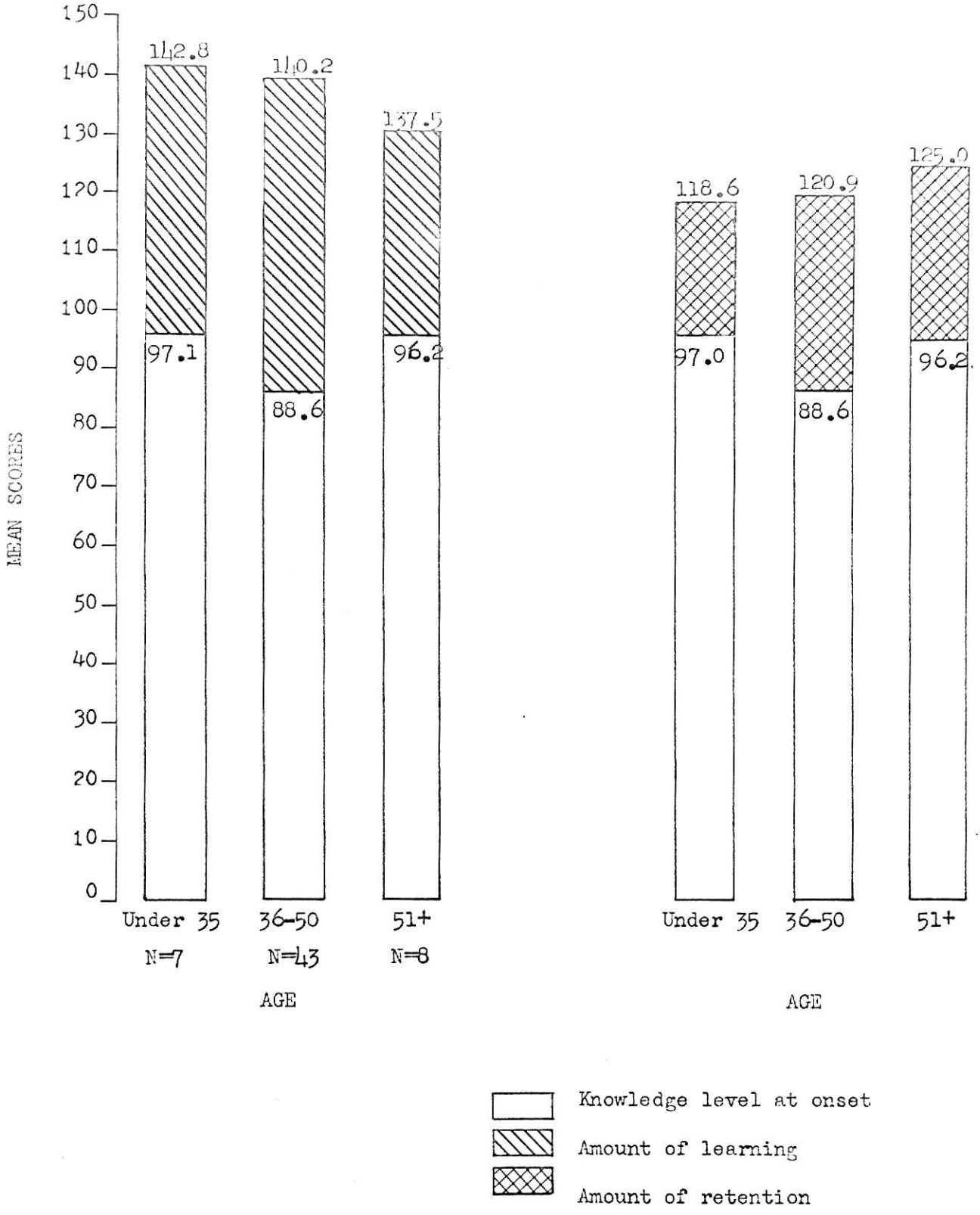

Figure 2. Amount of learning and amount of retention by age group.

Thirty days after the presentation on teenage nutrition, the mothers "under 35" remembered 22 percent more specific information than on the pre-test: the age group "36-50" remembered 36 percent more; and the mothers "51 and over" remembered 29 percent more. This is presented in Figure 2 as the amount of retention. A positive relationship of 0.07739 was found between age of participants and retention of information after 30 days. This indicates the older participants remembered slightly more. However, the relationship was not significant at the .05 percent level.

The age groups were unevenly divided as to the number of mothers in each group. It would probably have been better and more accurate to have the "36-50" age group broken into smaller groups (36-40, 41-45, and 46-50) rather than all being one group since this was where the majority of the participants fell according to age.

Education. The presentation on teenage nutrition was followed immediately by a post-test at which time the group with less than a high school education was able to recall 55 percent more specific information than on the pre-test; the mothers with a high school education were able to recall 54 percent more than on the pre-test; and the mothers with training beyond high school were able to recall 57 percent more than on the pre-test. The mothers in the college graduate group had the highest pre-test score and showed the least difference in the amount learned---a total of 30 percent. This is shown in Figure 3. A negative relationship of -0.08228 was found between amount learned and education, indicating that those with less education learned slightly more. This relationship was not significant at the .05 percent level.

The high school education group and training beyond high school group remembered 27 percent more and 37 percent more respectively after 30 days than on the pre-test. This is shown in Figure 3. The college graduate group

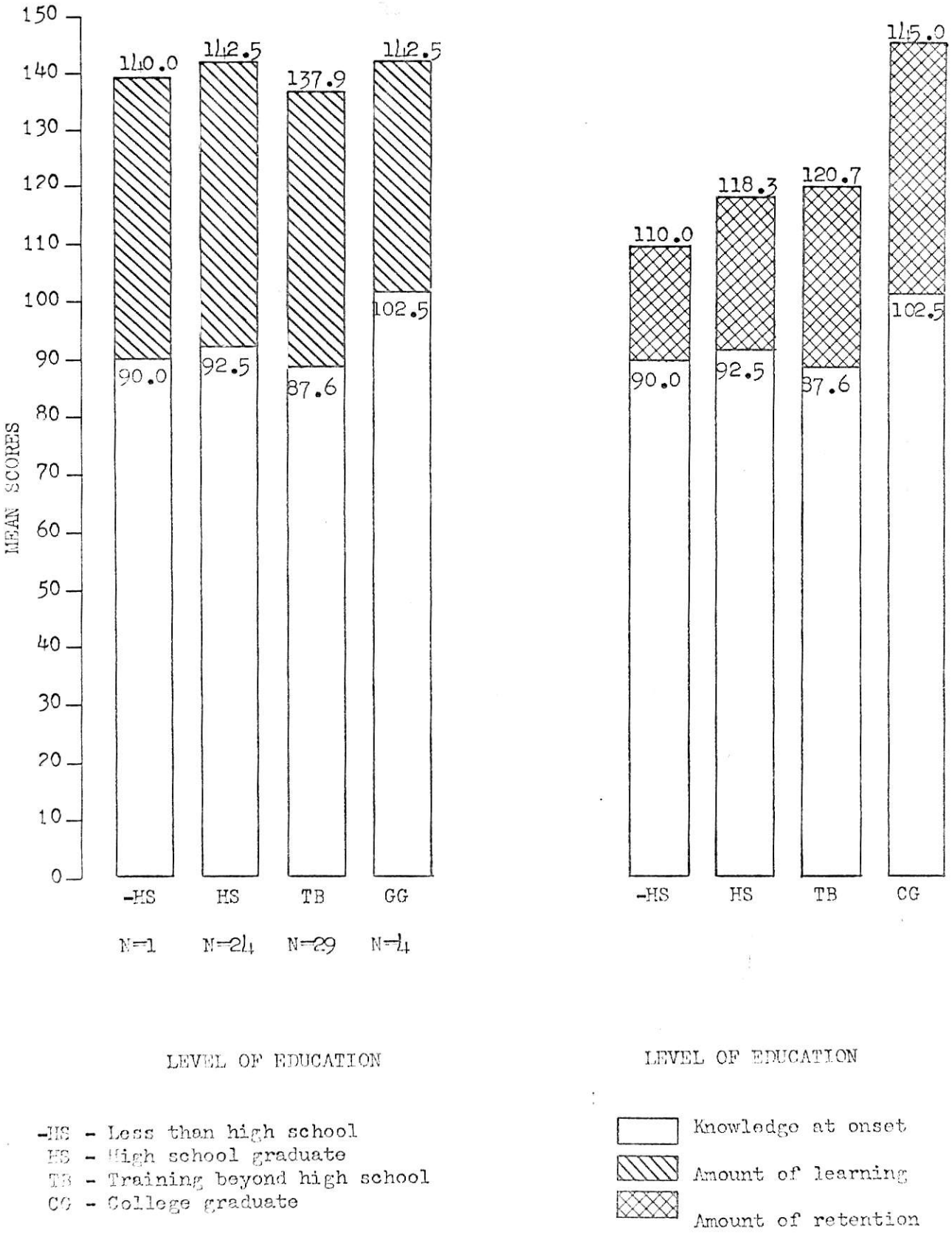

Figure 3. Amount of learning and amount of retention by level of education.

remembered 41 percent more specific information---11 percent more than they were able to recall immediately after the meeting! The researcher concludes one of three things happened---the mothers in this group felt a need to have a higher score than any other group and thus used reference material on the follow-up test or (2) one or more of the participants heard or read material similar to that presented in the meeting immediately before the follow-up test which helped them recall ideas presented in the meeting and reinforced learning or (3) they did additional reading or studying during the 30 day period.

A positive correlation of 0.22577 was found between education and amount retained. This indicated that those with a higher educational level were able to remember more after 30 days than those with a lower level of education. This was not significant at the .05 percent level.

Attitude. There was no difference in the post-test score of the three groups of mothers of teenagers as categorized by attitude. Attitude was measured at the time the post-test was given. The mothers in the group who had a high attitude (score 1-5) were able to recall 59 percent more specific information immediately following the presentation than on the pre-test. The mothers with a medium attitude (6-10) were able to recall 48 percent more and the mothers with a low attitude (11-20) were able to recall the largest amount of information, 75 percent more, as shown in Figure 4. It is interesting to note that both mothers who expressed a low attitude were in the video presentation group, lived in an urban area, had training beyond high school, had a lower retention score than the mean and had a poorer attitude after 30 days than they did immediately following the presentation. A negative correlation of -0.10892 was found between post-test attitude and amount learned during the meeting. This indicates that those with a lower attitude retained slightly more than those participants with a higher attitude. The correlation was not

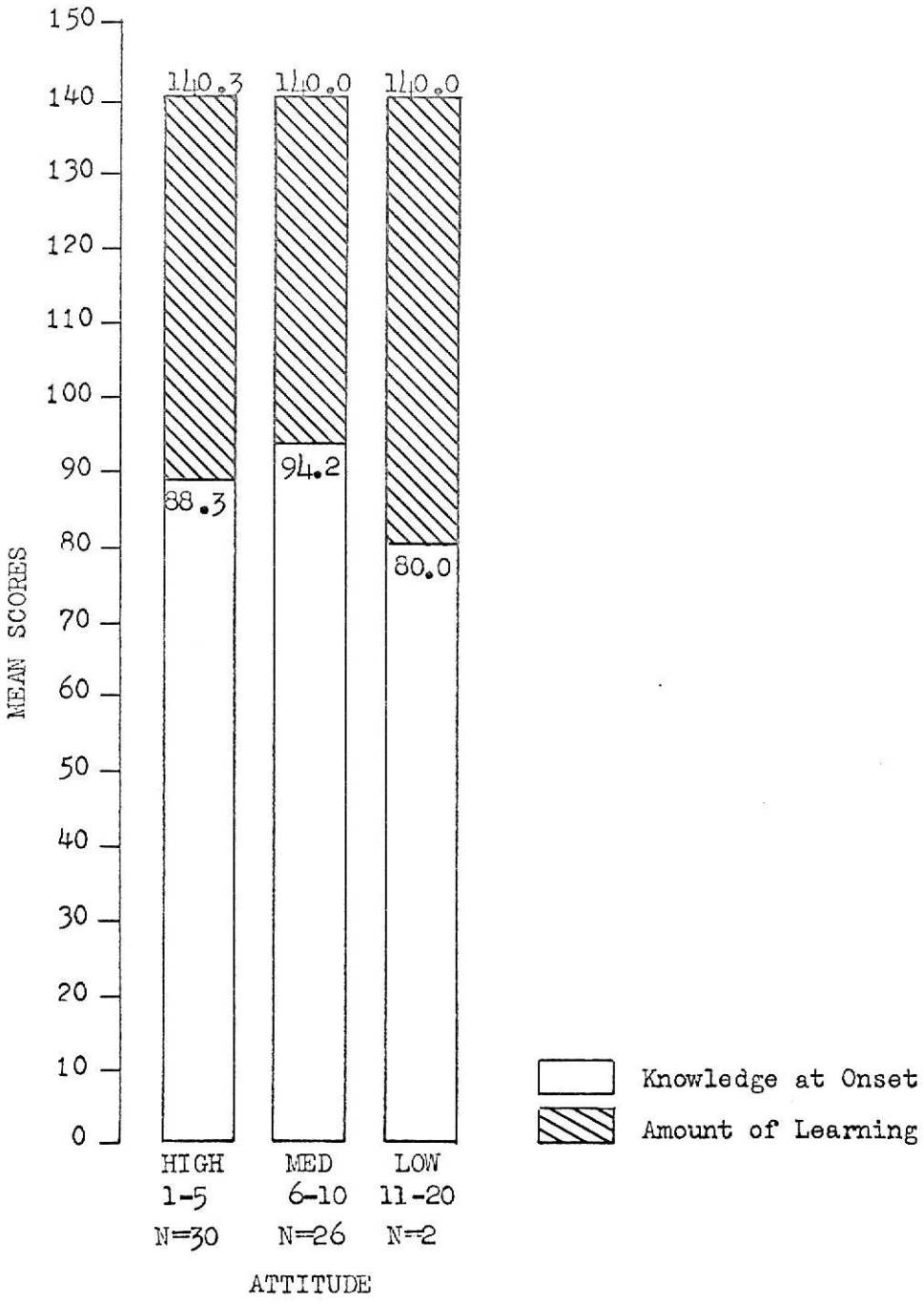

Figure 4. Amount of learning in relation to attitude as attitude was expressed immediately following meeting.

significant at the .05 percent level.

After 30 days, participant attitude was again measured in conjunction with the follow-up test. At this time, fewer mothers expressed a high attitude and they recalled only 34 percent more specific information than on the pre-test. The mothers expressing a medium attitude recalled 40 percent more information. The members of the low attitude group were able to recall only 25 percent more as shown in Figure 5. Three of the low attitude persons had participated in the video group and three in the live group. It is also interesting to note that none of those with a low attitude were in the oldest age group and none had a college education. A positive correlation of 0.10125 was found between the amount of information retained after 30 days and attitude measured at that time. This shows that those with a higher attitude were able to retain slightly more than those with a low attitude. The relationship was not significant at the .05 percent level.

Place of residence. The participants from rural areas showed a mean percentage of 54 percent more learned while the urban participants showed a mean percentage of 56 percent more specific information learned. This is shown in Figure 6. The pre-test score for rural participants was 7 percent higher than for urban participants making the final rural score the highest. When retention was calculated from the follow-up score determined 30 days later, the rural mothers could recall 37 percent more information while the urban mothers could recall only 30 percent more specific information. A negative correlation of -0.18212 indicated that the rural mothers remembered slightly more than the urban mothers. The difference was not significant at the .05 percent level.

Hypotheses 3 and 4 were accepted because no important associations were found between the stated factors.

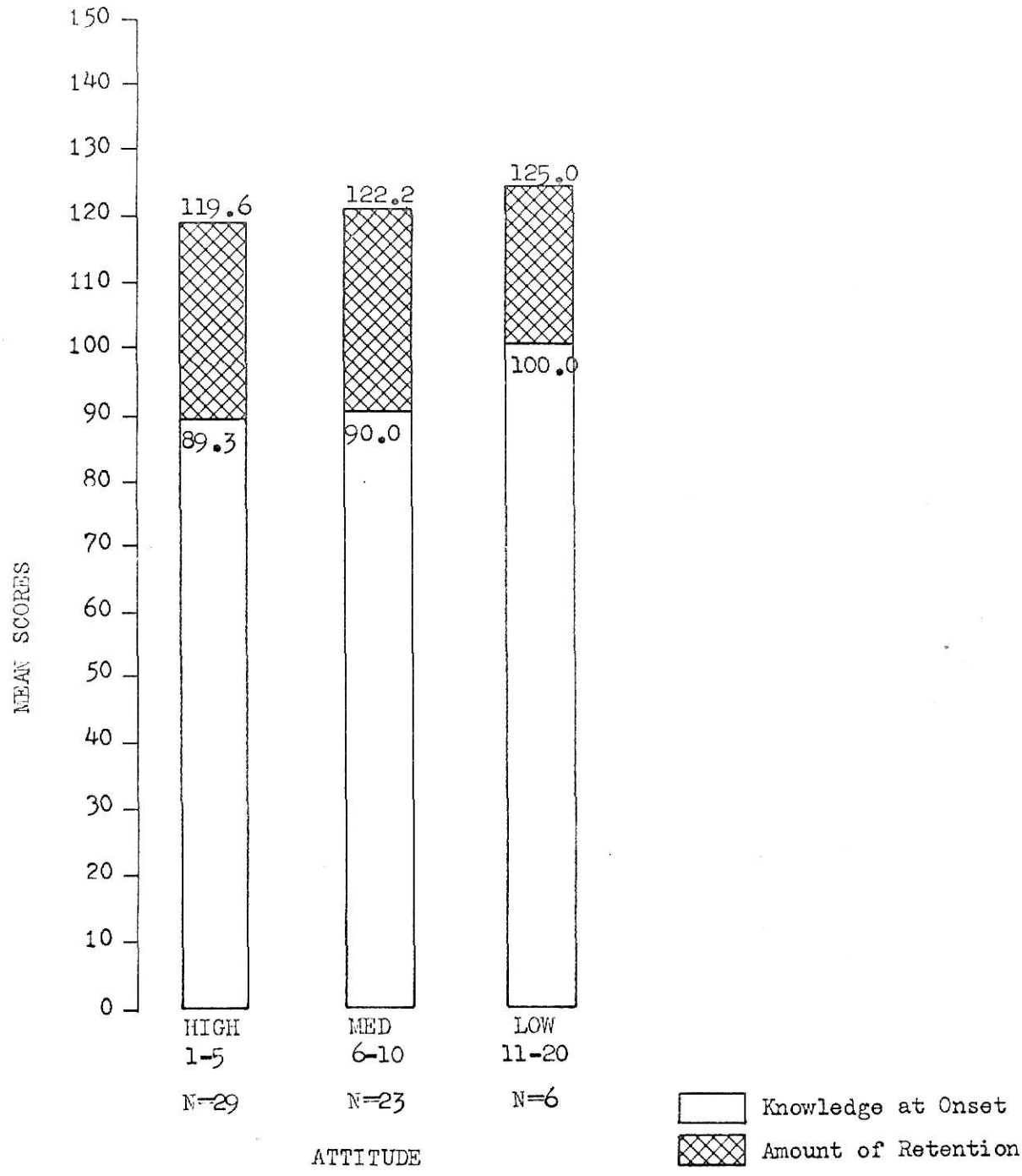

Figure 5. Amount of retention in relation to attitude as attitude was expressed 30 days following the meeting.

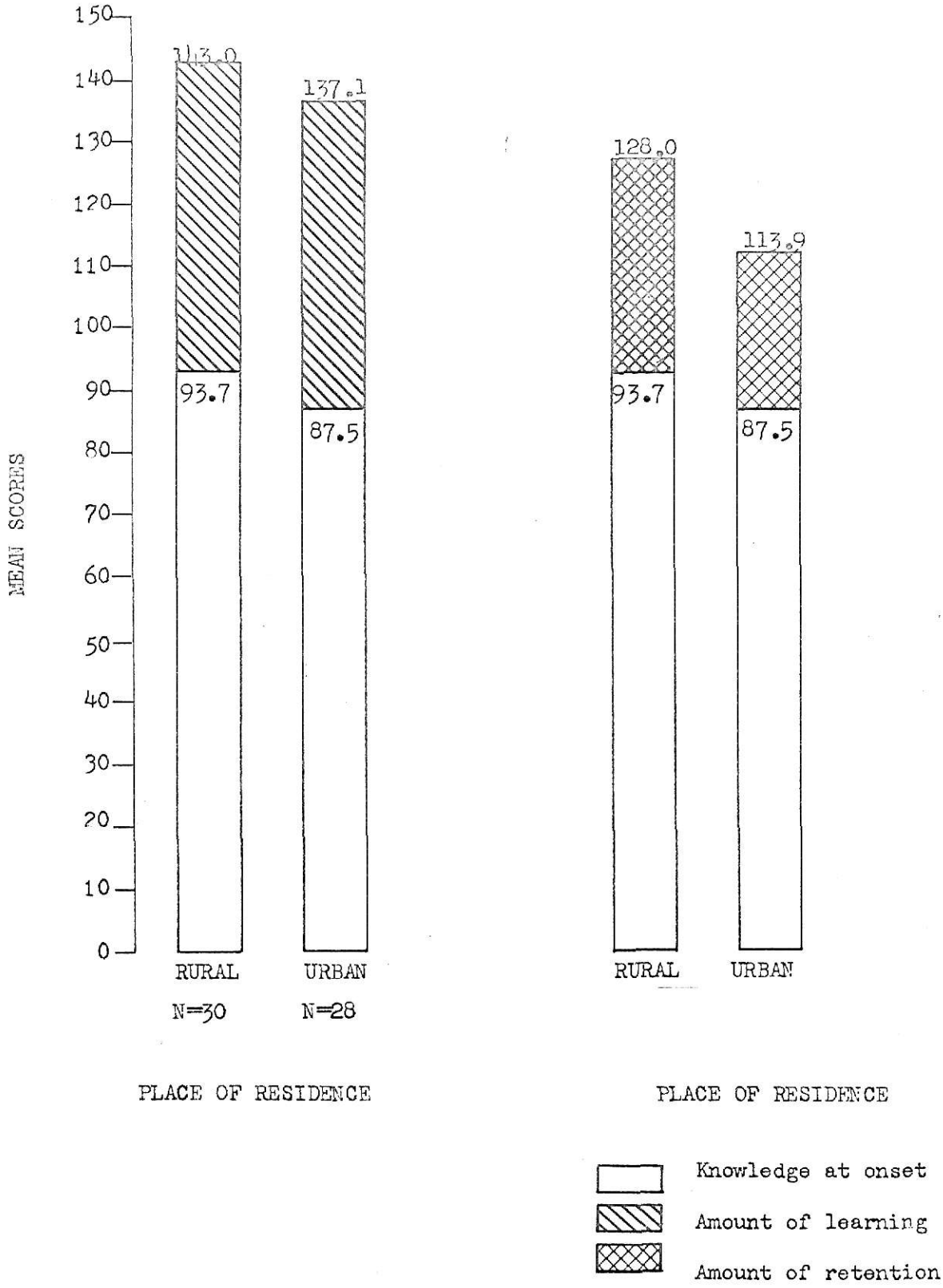

Figure 6. Amount of learning and amount of retention by place of residence.

Hypotheses 5 and 6

5. There is no significant difference in the amount of educational information that can be recalled by mothers of teenagers immediately following a presentation on teenage nutrition when the information is presented live and via video tape.

6. There is no significant difference in the amount of educational information that can be recalled by mothers of teenagers thirty days following a presentation on teenage nutrition when the information is presented live and via video tape.

The mothers in the group which saw the presentation on teenage nutrition live were able to recall 53 percent more specific information immediately following the presentation than on the pre-test. The mothers who saw the presentation on video tape were able to recall 55 percent more specific information than on the pre-test as shown in Figure 7. This difference was not significant at the .05 percent level when the t test was applied.

Thirty days after the meeting the participants in the live group remembered 37 percent more specific information than on the pre-test while those in the video group remembered 29 percent more information as shown in Figure 7. This difference was significant at the .05 percent level when the t test was applied indicating that the group seeing the presentation live remembered more after thirty days than the group that saw the presentation on video tape.

Based on the data presented, Hypothesis 5 was accepted as stated and Hypothesis 6 was rejected.

Summary

A significant difference was found between the level of knowledge of teenage nutrition possessed by study participants before and immediately after a presentation on teenage nutrition. Likewise, a significant difference was found between the level of knowledge of teenage nutrition possessed by

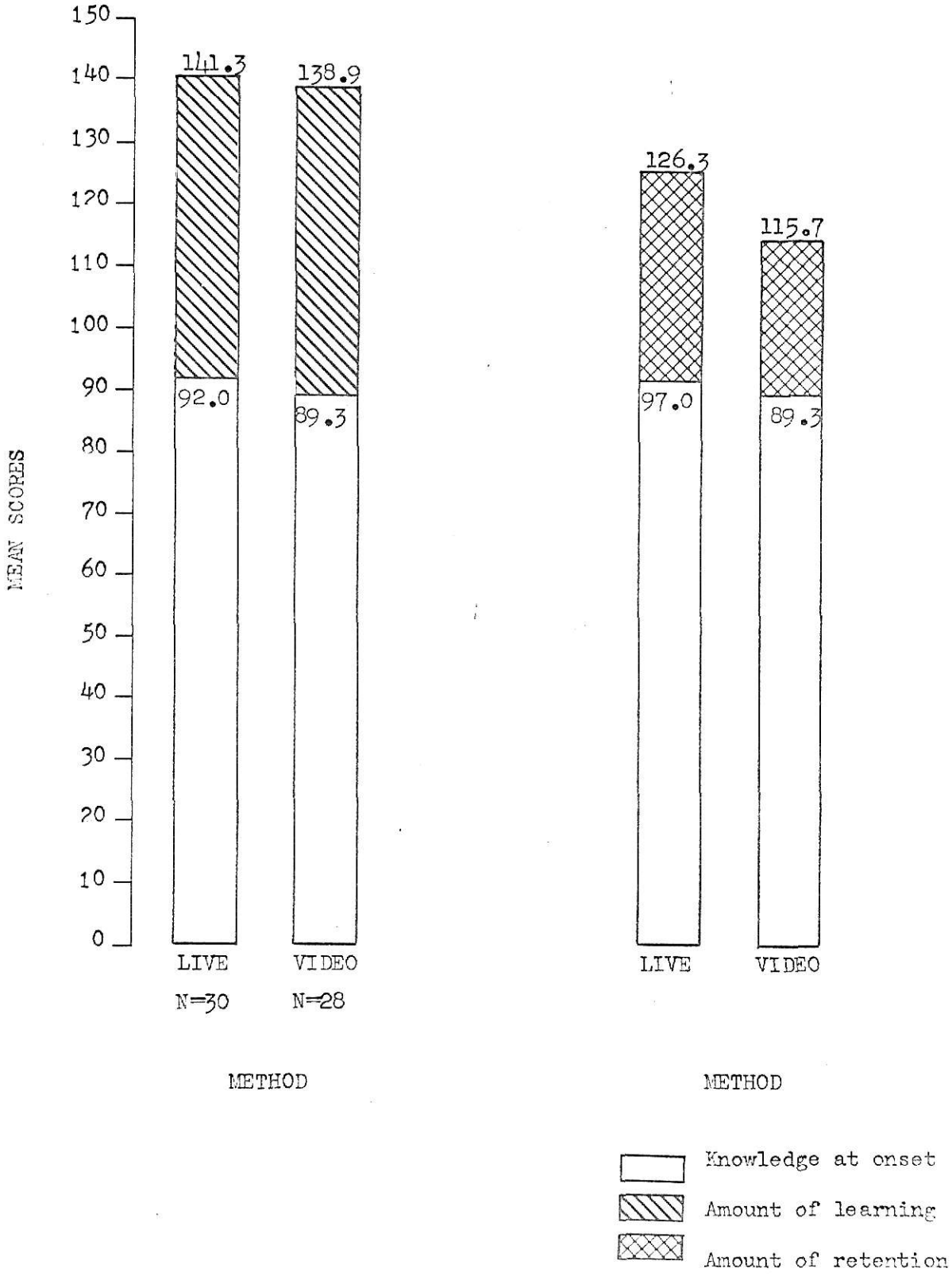

Figure 7. Amount of learning and amount of retention by method of presentation.

participants before a presentation on teenage nutrition and thirty days later.

No important associations were found between the amount of educational information that could be recalled immediately after a presentation on teenage nutrition and age, education, attitude, or place of residence. No important associations were found between the amount of educational information that could be recalled thirty days after a presentation on teenage nutrition and age, education, attitude, or place of residence.

No significant difference was found in the amount of educational information that could be recalled immediately by study participants when the information was presented live and via video tape. However, the difference was significant between the amount of educational information retained after thirty days and the method of presentation. Those participants viewing the presentation live were able to recall significantly more information than those who viewed the video tape presentation.

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of the study was to evaluate the effectiveness of an adult education meeting in terms of cognitive learning acquired by the participants. The level of knowledge was measured at the beginning of the meeting, immediately following, and thirty days after the meeting.

The specific objectives for the study were:

1. To determine the amount of learning that takes place during an adult education meeting when nutrition information is presented to mothers of teenagers.

2. To determine how much of the learning that takes place during an adult education meeting is retained after a period of 30 days.

3. To determine if there are relationships between the amount of learning that takes place during an adult education meeting and such personal and situational factors as age, place of residence, education, attitude and method of presentation.

The data were collected at a meeting held in Sedgwick County, Kansas on May 2, 1969. Participants in the study were mothers of teenagers, selected at random, who were either members of Extension Homemaker Units or who were currently serving as a 4-H foods leader of a local 4-H club. The data were analyzed by computer analysis using the *t* test and coefficient of correlation.

Summary and Conclusions

Hypothesis 1

There is no significant difference in the level of knowledge of teenage nutrition possessed by a group of mothers of teenagers before

and immediately after a presentation on teenage nutrition.

The hypothesis was rejected. The level of knowledge increased by 54 percent. The mean score on the pre-test was 90.7 and the score on the post-test was 140.1 which resulted in a mean difference of 49.5 points.

The researcher concluded that adults can and do learn. This learning can be measured. It is possible to determine realistic teaching objectives and to meet these objectives when teaching adults.

Hypothesis 2

> There is no significant difference in the level of knowledge of teenage nutrition possessed by a group of mothers of teenagers before and thirty days after a presentation on teenage nutrition.

The hypothesis was rejected. The mean score on the pre-test was 90.7 and the score on the follow-up test was 121.2 which resulted in a mean difference of 30.5 points. The level of knowledge increased by 33.5 percent.

It is possible for adults not only to learn new information, but to retain a part of this information over a period of thirty days. Retention can be measured. It is possible to establish realistic teaching objectives regarding retention of information and to meet these objectives.

Hypothesis 3

> There is no association between the amount of educational information that can be recalled immediately following a presentation on teenage nutrition to a group of mothers of teenagers and such personal and situational factors as age, education, attitude and place of residence.

The hypothesis was accepted.

A negative relationship was found between information recalled and age of participants indicating that the younger participants learned slightly more. The relationship was not significant.

A negative relationship was found between attitude and amount learned by the participants. This indicated that those with a lower attitude learned more

during the meeting. The relationship was not significant.

A negative correlation was found between place of residence and amount learned indicating that rural mothers learned slightly more. The relationship was not significant.

The researcher concludes that personal and situational factors, such as age, education, attitude and place of residence, may not necessarily affect the amount of educational information that can be recalled immediately following a presentation. It is further concluded that not only concrete variables such as age and place of residence may be measured but abstract variables, such as attitude, also may be measured.

Hypothesis 4

> There is no association between the amount of educational information that can be recalled thirty days following a presentation on teenage nutrition to a group of mothers of teenagers and such personal and situational factors as age, education, attitude and place of residence.

The hypothesis was accepted.

A positive relationship was found between age of participants and the retention of the material learned after 30 days. This indicated that the older participants remembered slightly more. The relationship was not significant.

A positive correlation was found between educational level of participants and the amount of information retained after 30 days. This indicated that those with a higher educational level were able to remember more after 30 days than those with a lower level of education. The relationship was not significant.

A positive relationship was found between the amount of information retained after 30 days and attitude measured at that time indicating that those with a high attitude were able to retain slightly more than those with a low attitude. The relationship was not significant.

A negative correlation between amount of information retained after 30 days and place of residence indicated that the rural mothers were able to recall slightly more than the urban mothers. The difference was not significant.

The researcher concludes that personal and situational factors, such as age, education, attitude and place of residence may not necessarily affect the amount of educational information that can be retained for a period of thirty days.

Hypothesis 5

> There is no significant difference in the amount of educational information that can be recalled by mothers of teenagers immediately following a presentation on teenage nutrition when the information is presented live and via video tape.

The hypothesis was accepted.

The mothers in the group which saw the presentation live were able to recall 53 percent more specific information than on the pre-test. The mothers who saw the presentation on video tape were able to recall 55 percent more specific information than on the pre-test. The difference was not significant when the t test was applied.

The researcher concludes that video tape would probably be an effective method of teaching in Extension. It should be used in more Adult Education activities and evaluated.

Hypothesis 6

> There is no significant difference in the amount of educational information that can be recalled by mothers of teenagers thirty days following a presentation on teenage nutrition when the information is presented live and via video tape.

The hypothesis was rejected.

Thirty days after the presentation the mothers in the live group remembered 37 percent more specific information than on the pre-test while

those in the video group remembered 29 percent more information than on the pre-test. The difference was significant at .05 percent level when the *t* test was applied.

The researcher concluded that participants who see a presentation on video tape do not remember specific information presented over a period of thirty days as well as participants who see the same presentation live. She suggests that during the thirty day period following the meeting perhaps mothers who saw the presentation live thought more about facts presented while mothers seeing the presentation on video tape thought more about the method of presentation. If this was the case, then perhaps recall between the two groups would be more equal after the "newness" of a method of presentation was gone.

Recommendations

1. Adult education meetings should be evaluated objectively to determine their effectiveness. Many teachers evaluate their meetings only by a few comments made rather than by evaluating objectively. Attitudes, as well as the amount of learning, should be evaluated.

2. More research should be done in the area of video tape as a media for presenting educational information to adults. The results need confirmation by further studies.

3. Further studies need to be conducted to determine the amount of retention not only at 30 days, but also 60 days, 90 days and 6 months.

4. Studies showing the principles learned at meetings that are actually put into practice would be a valuable tool in planning future adult education meetings.

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APPENDIX

Table 1. Pearson product moment correlation coefficients matrix.

	Correlations For Total Group								
	No Teens	Age	Education	Residence	Pre Score	Post Attitude	Post Score	Follow-up Attitude	Follow-up Score
No Teens	1.00000								
Age	-0.15943	1.00000							
Education	0.01976	0.12638	1.00000						
Residence	0.20827	-0.30432	-0.12855	1.00000					
Pre Score	0.16198	-0.00166	0.00989	-0.21815	1.00000				
Post Attitude	0.16571	-0.25567	0.05087	0.06332	0.18299	1.00000			
Post Score	0.07153	-0.12148	-0.11121	-0.26092	0.12982	0.06674	1.00000		
Follow-up Attitude	-0.06285	-0.24164	-0.04092	-0.02719	0.13719	0.75779	0.20397	1.00000	
Follow-up Score	-0.06286	0.08034	0.24447	-0.34132	0.26376	0.15495	0.31245	0.20067	1.00000
Amount Learned	-0.08812	-0.07945	-0.08228	0.00917	-0.75148	-0.10892	0.55661	0.02077	-0.01510
Amount Retained	-0.16519	0.07739	0.22577	-0.18212	-0.40073	0.02800	0.21223	0.10125	0.77805

YOUR NUMBER HERE_____

1. Number of teenagers in your family who are now 13-17 years of age

   _____

   How many boys?_____ Ages?_____

   How many girls?_____ Ages?_____

2. Your age group (Please check one.)

   _____ Under 35

   _____ 36-50

   _____ 51 or over

3. Your educational level (Please check one.)

   _____ Less than high school

   _____ High school graduate

   _____ Training beyond high school but not a college graduate

   _____ College graduate (Bachelors Degree)

   _____ Masters Degree or above

4. Your residence (Please check one.)

   _____ on farm or ranch

   _____ in city of less than 1,000 population

   _____ in city of 1,000 to 5,000 population

   _____ in city of 5,000 to 10,000 population

   _____ in city of 10,000 or more

TEENAGE NUTRITION

Instructions: Read each question and check (✓) the correct answer in the blank at the left.

1. Everyday a teenager should have milk. His intake should be at least:

_____a. 2 cups
_____b. 3 cups
_____c. 4 cups
_____d. 5 cups

2. A "poor diet" for a teen consists of:

____a. all but one serving daily from each of the Basic 4 food groups
____b. 90% of the total nutrients he needs daily
____c. 85% of the total nutrients he needs daily
____d. 2/3 or less of the nutrients he needs daily

3. Generally, the number of teenage girls that have a poor diet is:

_____a. 2 out of 10
_____b. 4 out of 10
_____c. 6 out of 10
_____d. 8 out of 10

4. Generally, the number of teenage boys that have a poor diet is:

_____a. 2 out of 10
_____b. 4 out of 10
_____c. 6 out of 10
_____d. 8 out of 10

5. Often the percentage of calories a teen obtains from snacks is as high as:

_____a. 10%
_____b. 15%
_____c. 25%
_____d. 40%

6. The number of servings of meat a teen needs daily is at least:

_____a. 1
_____b. 2
_____c. 3
_____d. 4

7. As a general rule, teens should be encouraged to:

_____a. never snack
_____b. snack less
_____c. snack more
_____d. choose nutritious snacks

8. The nutrients that teenage girls most frequently lack are:

_____a. Vitamins A and C
_____b. protein and riboflavin
_____c. calcium and iron
_____d. protein and calcium

9. A teenage boy is most likely not to obtain enough:

_____a. Vitamin C
_____b. iron
_____c. calcium
_____d. Vitamin B complex

10. If your teenager needed additional iron and would not eat liver, you should prepare:

_____a. tomatoes
_____b. milk
_____c. citrus fruits
_____d. green leafy vegetables

11. When counting the number of servings of each food eaten daily from each food group, we should include:

_____a. breakfast, lunch and dinner
_____b. breakfast, dinner and snacks
_____c. lunch, dinner and snacks
_____d. all meals and all snacks

12. The most important each day is:

_____a. breakfast
_____b. lunch
_____c. dinner
_____d. snacks

13. The least important source of calcium is:

_____a. milk
_____b. grapefruit
_____c. cottage cheese
_____d. ice cream

14. The number of servings of fruits and vegetables a teen needs daily is at least:

_____a. 2 servings
_____b. 3 servings
_____c. 4 servings
_____d. 5 servings

15. The number of servings of breads and cereals a teen needs daily is at least:

_____a. 2 servings
_____b. 3 servings
_____c. 4 servings
_____d. 5 servings

YOUR NUMBER HERE_____

EVALUATION SHEET

Instructions: Please check (✓) only those statements that describe most accurately your personal reaction to the total activity. Read all the statements before checking.

1. It was a most rewarding experience.
2. Exactly what I expected.
3. I hope we can have another in the near future.
4. It provided the kind of experience that I can apply to my own situation.
5. It helped me personally.
6. It solved some problems for me.
7. I think it served its purpose.
8. It had some merits.
9. It was fair.
10. It was neither very good nor very bad.
11. I was mildly disappointed.
12. It was not exactly what I needed.
13. It was too general.
14. I did not take any new ideas away.
15. It didn't hold my interest.
16. It was much too superficial.
17. I left dissatisfied.
18. It was poorly planned.
19. I didn't learn a thing.
20. It was a complete waste of time.

TEENAGE NUTRITION

Instructions: Read each question and check (✓) the correct answer in the blank at the left.

1. Everyday a teenager should have milk. His intake should be at least:

_____a. 2 cups
_____b. 3 cups
_____c. 4 cups
_____d. 5 cups

2. A "poor diet" for a teen consists of:

____a. all but one serving daily from each of the Basic 4 food groups
____b. 90% of the total nutrients he needs daily
____c. 85% of the total nutrients he needs daily
____d. 2/3 or less of the nutrients he needs daily

3. Generally, the number of teenage girls that have a poor diet is:

_____a. 2 out of 10
_____b. 4 out of 10
_____c. 6 out of 10
_____d. 8 out of 10

4. Generally, the number of teenage boys that have a poor diet is:

_____a. 2 out of 10
_____b. 4 out of 10
_____c. 6 out of 10
_____d. 8 out of 10

5. Often the percentage of calories a teen obtains from snacks is as high as:

_____a. 10%
_____b. 15%
_____c. 25%
_____d. 40%

6. The number of servings of meat a teen needs daily is at least:

_____a. 1
_____b. 2
_____c. 3
_____d. 4

7. As a general rule, teens should be encouraged to:

_____a. never snack
_____b. snack less
_____c. snack more
_____d. choose nutritious snacks

8. The nutrients that teenage girls most frequently lack are:

_____a. Vitamins A and C
_____b. protein and riboflavin
_____c. calcium and iron
_____d. protein and calcium

9. A teenage boy is most likely not to obtain enough:

_____a. Vitamin C
_____b. iron
_____c. calcium
_____d. Vitamin B complex

10. If your teenager needed additional iron and would not eat liver, you should prepare:

_____a. tomatoes
_____b. milk
_____c. citrus fruits
_____d. green leafy vegetables

11. When counting the number of servings of each food eaten daily from each food group, we should include:

_____a. breakfast, lunch and dinner
_____b. breakfast, dinner and snacks
_____c. lunch, dinner and snacks
_____d. all meals and all snacks

12. The most important each day is:

_____a. breakfast
_____b. lunch
_____c. dinner
_____d. snacks

13. The least important source of calcium is:

_____a. milk
_____b. grapefruit
_____c. cottage cheese
_____d. ice cream

14. The number of servings of fruits and vegetables a teen needs daily is at least:

_____a. 2 servings
_____b. 3 servings
_____c. 4 servings
_____d. 5 servings

15. The number of servings of breads and cereals a teen needs daily is at least:

_____a. 2 servings
_____b. 3 servings
_____c. 4 servings
_____d. 5 servings

Cooperative
EXTENSION SERVICE
of Kansas State University

"Taking the UNIVERSITY to the PEOPLE"

SEDGWICK COUNTY EXTENSION SERVICE
9000 West Central
Wichita, Kansas 67212
Phone: 316 PA 2-2640

February 24, 1969

TO: EHU Members
4-H Foods Leaders

Dear Friends:

Teenage nutrition has become alarmingly poor in the United States today. One-half of our teenagers do not have an adequate diet.

We plan to conduct a research project in cooperation with Kansas State University to determine the best ways to get nutrition information to mothers of teenagers. I would appreciate your help.

The research project will consist of a 30 minute presentation on TEENAGE NUTRITION. It will be given by Joyce Crews, formerly an Extension Specialist in Teenage Nutrition at Kansas State University, at 1:30 p.m., Friday, May 2, 1969, at the Sedgwick County Extension Office, 9000 West Central.

Would you please complete the enclosed card, which needs no postage, and drop it in the mail? A random sample of those responding will be selected for attendance at the May 2 meeting.

Very truly yours,

Curtis Trent

Curtis Trent, Coordinator
Extension Personnel Training
Kansas State University

Ruby Truax

(Mrs.) Ruby Truax
Assistant County Extension
Home Economist

Enc. - Card

CARD TO INDICATE AN INTEREST TO
PARTICIPATE IN STUDY

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

U. S. DEPARTMENT OF AGRICULTURE AND KANSAS STATE UNIVERSITY OF
AGRICULTURE AND APPLIED SCIENCE COOPERATING

Number of TEENAGERS (13 to 17 years of age) if any in your family _____.

I would like to participate in the TEENAGE Nutrition Research Project ... Yes_____ No_____.

Signed: Name_____

Address_____

_____

Telephone_____

Cooperative
EXTENSION SERVICE
of Kansas State University

"Taking the UNIVERSITY to the PEOPLE"

SEDGWICK COUNTY EXTENSION SERVICE
9000 West Central
Wichita, Kansas 67212
Phone: 316 PA 2-2640

April 3, 1969

TO: EHU Members
4-H Foods Leaders

Dear Friend:

A few weeks ago you indicated by returning a card to us that you were interested in participating in a research project on teenage nutrition. This letter is to notify you that you have been selected as one of those to participate in the study.

As we indicated, the meeting will be held May 2, 1:30 p.m. at the Sedgwick County Extension Office. If, for any reason, you will not be able to participate, please let us know immediately so that we may select someone to attend in your place. Otherwise, we will expect to see you on May 2. We will send you another brief reminder a few days before the meeting.

Please return the enclosed card as soon as possible which indicates that you will participate in the study.

Thank you for your cooperation.

Very truly yours,

Curtis Trent

Curtis Trent, Coordinator
Extension Personnel Training
Kansas State University

Ruby Truax

(Mrs.) Ruby Truax
Assistant County Extension
Home Economist

Enc. - Card

CARD TO CONFIRM PLANS
TO PARTICIPATE

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
U. S. DEPARTMENT OF AGRICULTURE AND KANSAS STATE UNIVERSITY OF
AGRICULTURE AND APPLIED SCIENCE COOPERATING

_____ Yes, I will participate in the research study on teenage nutrition by attending the May 2 meeting at 1:30 at the Sedgwick County Extension Office.

Signed _____

Address _____

_____

REMINDER CARD

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
U. S. DEPARTMENT OF AGRICULTURE AND KANSAS STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE COOPERATING

REMINDER!

We'll be looking forward to seeing you at the meeting on "Teenage Nutrition" on Friday, May 2, 1969, 1:30 p.m. at the Sedgwick County Extension Office, 9000 W. Central.

Very truly yours,

Curtis Trent

Curtis Trent, Coordinator
Extension Personnel Training
Kansas State University

Ruby Truax

(Mrs.) Ruby Truax
Assistant County Extension
Home Economist

Cooperative
EXTENSION SERVICE
of Kansas State University

Division of Extension
Extension Programs and Training
Umberger Hall
MANHATTAN, KANSAS 66502
Phone: 913 532-6141

"Taking the UNIVERSITY to the PEOPLE"

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June 2, 1969

Dear Study Participant:

A month has passed since you attended the session on teenage nutrition at the Sedgwick County Extension Office. As we indicated at that time, a follow-up study is being conducted.

Would you please fill out the enclosed questionnaire and return it at your earliest convenience? An envelope which needs no postage is enclosed for your return.

It is not important to the study that you remember every answer. It is important that you mark the entire questionnaire quickly, as you did at the meeting, and return it. Please do not refer to any materials and please be sure you answer every question.

As soon as we receive your completed questionnaire, we will send by return mail a copy of the presentation, "Don't Gonk Out", and other materials on snacks and teenage nutrition.

When the completed study is finished in late summer, you will receive a personal copy of the findings.

Again, thank you for your cooperation.

Sincerely,

Curtis Trent

Curtis Trent, Coordinator
Extension Personnel Training
Kansas State University

Ruby Truax

(Mrs.) Ruby Truax
Assistant County Extension
Home Economist

Enc.

Cooperative
EXTENSION SERVICE
of Kansas State University

Division of Extension
Extension Programs and Training
Umberger Hall
MANHATTAN, KANSAS 66502
Phone: 913 532-6141

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June 17, 1969

Dear Study Participant:

Two weeks ago we sent out a follow-up questionnaire related to the teenage nutrition study in which you participated. Some of the questionnaires have been returned; others have not. If you have not returned yours, would you please take a few minutes, fill it out and return it right away?

Just in case you have misplaced the original questionnaire or in the event that it did not reach you, we are enclosing another copy along with a self-addressed envelope which needs no postage.

Very truly yours,

Curtis Trent
Curtis Trent, Coordinator
Extension Personnel Training
Kansas State University

Ruby Truax
(Mrs.) Ruby Truax
Assistant County Extension
Home Economist

Enc.

AN EVALUATION OF THE EFFECTIVENESS OF AN ADULT EDUCATION MEETING

by

JOYCE T. DIERKING

B. S., Kansas State University, 1966

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1970

Purpose

The purpose of the study was to evaluate the effectiveness of an adult education meeting in terms of cognitive learning acquired by the participants.

Objectives

The specific objectives of the study were:

1. To determine the amount of learning that takes place during an adult education meeting when nutrition information is presented to mothers of teenagers.

2. To determine how much of the learning that takes place during an adult education meeting is retained after a period of 30 days.

3. To determine if there are relationships between the amount of learning that takes place during an adult education meeting and such personal and situational factors as age, place of residence, education, attitude, and method of presentation.

Procedure

The sample selected for the study included mothers of teenagers who were members of Extension Homemaker Units and those who were 4-H foods leaders in Sedgwick County, Kansas who expressed a willingness to participate in the study. The random sample consisted of 58 mothers.

The topic selected for presentation was "Teenage Nutrition". One half of the participants listened to the presentation "live" and the other half observed an identical presentation on video tape.

Two educational objectives were established to guide the presentation.

A pre-test to measure knowledge level was given to all participants at

the beginning of the meeting. A post-test was given immediately following the meeting and a follow-up test was given thirty days later. An attitude scale was administered along with the post and follow up tests.

The analysis of data was based on six null hypotheses. Statistical measures used were the t test and coefficient of correlation.

Findings

A significant difference was found between the level of knowledge of teenage nutrition possessed by study participants before and immediately after a presentation on teenage nutrition. Likewise, a significant difference was found between the level of knowledge of teenage nutrition possessed by participants before a presentation on teenage nutrition and thirty days later.

No important associations were found between the amount of educational information that could be recalled immediately after a presentation on teenage nutrition and age, education, attitude, or place of residence. No important associations were found between the amount of educational information that could be recalled thirty days after a presentation on teenage nutrition and age, education, attitude, or place of residence.

No significant difference was found in the amount of educational information that could be recalled immediately by study participants when the information was presented live and via video tape. However, the difference was significant between the amount of educational information retained after thirty days and the method of presentation. Those participants viewing the presentation live were able to recall significantly more information than those who viewed the video tape presentation.

Recommendations

1. Adult education meetings should be evaluated objectively to determine their effectiveness. Many teachers evaluate their meetings only by a few comments made rather than by evaluating objectively. Attitudes, as well as the amount of learning, should be evaluated.

2. More research should be done in the area of video tape as a media for presenting educational information to adults. The findings of this study need confirmation by further studies.

3. Further studies need to be conducted to determine the amount of retention not only at 30 days, but also 60 days, 90 days and 6 months.

4. Studies showing the principles learned at meetings that are actually put into practice would be a valuable tool in planning future adult education meetings.