

NUTRITION EDUCATION IN TULSA, OKLAHOMA,
ELEMENTARY SCHOOLS

By

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Bachelor of Arts

Oklahoma State University

Stillwater, Oklahoma

1963

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
July, 1977

Thesis
1977
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ACKNOWLEDGMENTS

Appreciation is extended to all those who have contributed to the completion of this study. The writer expresses grateful appreciation to her thesis adviser, Dr. Esther Winterfeldt, for all her assistance and guidance over the last few years.

Appreciation is also extended to Dr. Bernice Kopel and Dr. Nick Stinnett for their participation and assistance on the thesis committee.

Grateful acknowledgement is given to Dr. William Warde for his patience and assistance in the statistical analysis.

Miss Mary Leidigh will be remembered for her interest and guidance given years ago.

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CHAPTER I

INTRODUCTION

Description of the Problem

"If you wouldn't put all that junk in the Jello, the kids would eat it." This statement was made by an elementary school principal concerning a Type A school lunch. Similar attitudes held by many personnel in the elementary schools are encountered frequently. Many do not understand either the nutritional needs of the children, or the purposes of the meal pattern used for the Child Nutrition Programs.

Recommendations were made at the White House Conference on Food, Nutrition, and Health in 1969 to include a comprehensive and sequential program of nutrition education in all schools, and to enlist the support and involvement of key school administrators and educators (1). In the Annual Report (1972) of the National Advisory Council on Child Nutrition, the unmet educational goals of using the school lunchroom as a "laboratory for learning," and of making school administrators and policy makers aware of the importance of nutrition education were discussed (2). Their responsibility for seeing that such education is an integral part of the school experience was pointed out. It was noted in the report that many school administrators and teachers have not made effective use of personnel qualified in nutrition as a resource for nutrition education and recommended fuller use of these personnel by State Departments of

Education.

The support and involvement of the teacher who has the direct contact with the children is important. However, there was little published research in the literature to indicate the degree of support given by teachers. There were few articles reporting nutrition education programs of the scope called for in the White House Conference recommendations.

In a nationwide study of school food service and nutrition education supported by the USDA, it was concluded in 1970 that as of that time there was not an operational, well organized, comprehensive and sequential plan for teaching nutrition education in any state (3). No agreement between or within states as to grade level at which nutrition should be taught, method of teaching, or amount of students' time devoted to nutrition education was found.

In a workshop co-sponsored by the Society for Nutrition Education and the National Nutrition Exchange, a need for a data base on who is teaching nutrition, what is being taught, to whom, in which areas, and how many are being reached was reported (4).

Some headway has been made. In 1974, a survey of the 50 states to assess follow-up actions on the recommendations of the White House Conference was conducted. Findings showed nutrition education is being carried out through a wide range of disciplines and means. Ten states have legislated policy concerning nutrition education. In six of these, nutrition was included as a part of the health core. In three others, nutrition was a separate core under the direction of the school food service, and one state indicated the responsibility was divided between school food service, health and vocational home economics. Other states were in the process of formulating policy. It was recommended that

guidelines be established for states for the development of comprehensive and sequential nutrition education programs (5).

Statement of the Problem

The Tulsa school district has captured national attention for an innovative approach to racial integration. It has introduced volunteer enrollment schools with open classrooms and modular scheduling. Nutrition education has been incorporated into the Tulsa Public School curriculum guide in "Human Adjustment to Growth and Development" (6). Nutrition education resources and activities are listed for grades one through six for science, homeroom, physical education, and art teachers. It would be of interest both to Tulsa administrators and other school districts to learn how well these efforts are working, how the available nutrition education materials and resources are being used and how much support is given to nutrition education at the teacher level. By knowing what materials are used and their effectiveness and by knowing teachers' attitudes, an evaluation of the present program may be made on which to base further nutrition education in the schools.

Objectives of the Study

In this study the frequency of use of the available nutrition education materials, and the amount of support given to nutrition education at the elementary teacher level in Tulsa, Oklahoma schools was determined.

The specific objectives were to:

- (1) Identify in a questionnaire the nutrition education materials available to the elementary teachers in Tulsa, Oklahoma, and determine the frequency of their use during the last two years.

- (2) Determine teachers' attitudes toward: (a) nutrition education in the schools--should it be taught and when, who should and can teach it; (b) appropriateness and adequacy of nutrition education teaching materials and resources; (c) the school lunch program as a feeding facility, as a learning opportunity for students, and as a teaching resource for teachers.
- (3) Determine the relationship of these attitudes of the teachers to subject taught and to academic background in nutrition.
- (4) Make recommendations regarding nutrition education in the schools.

Hypothesis

The following hypothesis will be examined. There is no significant difference in:

- (1) frequency of nutrition film or filmstrip use per year,
- (2) frequency of units of nutrition education taught per year,
- (3) teachers' attitudes toward nutrition education and the school lunch program, according to: (a) previous academic background in nutrition as a separate college course, (b) previous background in nutrition combined in another college course, (c) in-service training or workshop, (d) no previous training in nutrition, and (4) subject taught.

CHAPTER II

REVIEW OF LITERATURE

Effect and Prevalence of Malnutrition and Undernutrition

According to the "Vulnerable Period Hypothesis," severe nutritional deprivation during the period of most rapid brain growth or active cell division produces physiological and biochemical alterations in the brain and central nervous system in humans (7). This damage may be permanent, may lead to behavioral abnormalities and learning disability and may affect successive generations. This "growth spurt" of the human brain occurs during approximately the last trimester of fetal life until 18 months postnatally.

Less severe but chronic undernutrition produces a child who is apathetic, lethargic, disinterested, irritable, and overconcerned with food. He tends to live in a world of his own, relatively independent of the environment, responding inadequately to those stimuli which are available. Thus, the developmental sequence is interrupted, and the child lacks the experiential foundation to build on. This leads to further changes in personality, emotionality, and inadequate interpersonal relationships (8) (9).

Kallen (10) further describes the hungry child as having a lower self-esteem, which in turn produces lower teacher expectations of

performance, reinforcing the probability of inadequate performance. This primary biological reason leads to secondary social and psychological reasons for impaired learning.

Despite the generally rising level of affluence and the great abundance of foods in this country, evidence of undernutrition and hunger continues to be found. In a 1968 HEW study, evidences of undernutrition were discovered. Specifically, 15 per cent of the children studied showed evidence of growth retardation, four per cent showed evidence of rickets (up to six years of age), four to five per cent showed definite protein-calorie malnutrition, 33 per cent suffered from vitamin A deficiency, and 33 per cent were anemic (short of red blood cells and hemoglobin). The evidence of malnutrition was found most commonly among blacks, less commonly among Spanish-Americans and least among white persons. Adolescents between the ages of 10 and 16 years had the highest prevalence of unsatisfactory nutritional status; males more than females. Elderly persons were another age group which rated low nutritionally. A relatively large proportion of pregnant and lactating women showed low serum albumin levels, indicating low to marginal protein intakes among this group (11) (12).

Children who are not necessarily hungry may still consume inadequate diets. In a nutrition survey of school age children in 1949, it was found that the mean daily protein intake for fourth graders was 74 gm, while for tenth graders it was 93 gm, which is adequate to high. However, about half the children consumed less than one serving per day of fruits or vegetables high in ascorbic acid or high in carotene (13).

Other studies have pointed to the general shifts in household food consumption. In the spring of 1965, a nationwide survey rated the diets

of 50 per cent of the households studied in the United States as "good", that is, they met the RDA for seven indicator nutrients: protein, calcium, vitamin A, iron, thiamine, riboflavin, and ascorbic acid. About 20 per cent of the households' diets were rated poor. Diets were rated "poor" that provided less than two-thirds of the allowance for one or more nutrients studied. About 30 per cent of the diets ranged between "good" and "poor" and were labeled "fair". When consumption was compared with results of a similar study in 1955, it was found that although the meat group consumption increased, intakes of the other food groups decreased (14).

A nationwide study by the Committee on School Lunch Participation in the fall of 1967 revealed low participation in the school lunch program by children from poor families, a group the program was designed to help. It was estimated that somewhere between four and eight million poor children were not eating a school lunch because they could not afford to pay for it and a free lunch was not then available (5).

Need for Nutrition Education

Reasons for the reports of poor nutritional status are varied. It is an economic problem for some who simply do not have the money. Others have plenty of money or receive food stamps, but do not know how to make wise use of food dollars. This may be primarily an educational problem and more nutritious food choices would be made if consumer information was available to the family food buyer and cook. Some people have the money, know what to buy, but just do not care and therefore make poor food choices. This, then, is a motivational problem as well as an educational problem.

Meal patterns in the U. S. have also shifted due to the national snacking habit of substituting for regular meals. Many of the snack foods are so called "junk foods", that is, they provide limited nutrients. It is much easier to select a bad diet today than it was a generation or two ago, according to Hegsted (16).

Much of nutrition education for the public has previously been based on classification of food into the Basic Four food groups and basing meal patterns on these groups. However, many of the newer foods may be hard to define as to classification in a food group. Although many people are vaguely aware of the "Basic Four" food groups, it is often more difficult to classify the manufactured foods. There is a need for more nutrition education in terms of nutrients and food composition rather than the Basic Four. Using only the Basic Four to assess nutritional intake of diets may produce biased information and the public can not always rely on this pattern to give a balanced diet with the Basic Four pattern as their only source of information. In a dietary survey of low-income, rural families in Iowa and North Carolina studying the percentage contribution of each food group in a day's diet was found to be unreliable (17).

The traditional approach of teaching nutrients in terms of deficiency diseases or isolated function is outdated, according to Harker and Kupsinel (18). In this method, it may appear that the only contribution of a food is in terms of specific nutrients. Thus, by this criteria, orange drink would be just as good a substitute for orange juice if vitamin C is the only nutrient considered. It is important for nutrition educators to emphasize to the public that the frequently calculated nutrients are only representative and not the total contribution of a food.

Food habits are formed at an early age. In a study of the food habits and snacking patterns of 44 children examined during the preschool period and followed up during early elementary school years, it was found that the eating habits of the children remained fairly constant from preschool to school age (19). This points to the need for beginning nutrition education at an early age.

In a study of sophomore high school students' attitudes toward school lunch, one important finding was the large number of students disliking cooked vegetables, whether at school or home. It was concluded that this was additional evidence in support of acquainting children at an early age with a greater variety of foods and the need for nutrition education in the lower grades (20).

In another study of the food habits of children (1955), food intake records of 1,242 children in Connecticut were analyzed. The diets of rural children scored slightly higher than city children particularly in fruits and vegetables. Eleven year olds' diets scored slightly better than the diets of the 12 to 14 year olds. The foods most often found lacking in the diets were green and yellow vegetables and the ascorbic acid rich foods (21).

In a study of the food attitudes of 5 to 12 year old children at camp, cooked vegetables of all kinds comprised the largest group of disliked foods. Eggs were next in unpopularity, followed by raw vegetables. Of the 51 children studied, 28 learned to like one or more raw foods while at camp (22). One of the purposes of any feeding program is to acquaint children with a variety of nutritious foods in order that they may learn to like them and include them in their eating habits.

In a School Health Education study in 1954, it was found that the disparity between nutrition knowledge and eating practices widened as students grew older (23). This may be due in part to the fact that students who do receive nutrition education are often taught the same subject matter year after year. This indicates a need for improvement in course content and methodology for effective motivation of students to use nutrition knowledge in personal food habits.

At the White House Conference on Food, Nutrition, and Health in 1969 this need was recognized and a long-range program in nutrition education was outlined. Among the recommendations made were that every individual must possess sufficient knowledge to make wise food choices, and that nutrition education must begin in early childhood when food habits are forming. Other recommendations called for were: (1) expansion of school feeding programs reinforced with nutrition education programs, (2) coordinators of nutrition education services and activities in the U. S. Office of Education and at the state and local levels, (3) enlistment of support of key school administrators, professional groups, and industry in upgrading nutrition education services in grades prekindergarten through 12, (4) a comprehensive and sequential program of nutrition education included as an integral part of the curriculum in every school in the United States and its territories, and (5) that schools expand nutrition education programs to include parents of school children and other adults in the community (1).

In order to implement the recommendations of a comprehensive nutrition education program in the schools, there is a great need to acquaint teachers with nutrition education and its importance. In a 1956 survey among nutritionists regarding trends that nutrition education should be

taking, the conclusion drawn was that emphasis should be placed on training elementary education majors in nutrition. A further need was expressed for trained nutrition consultants who would work with elementary teachers (24).

The state of Massachusetts has a progressive nutrition education program in its schools (25). In this program, teacher support has not come through legislated undergraduate nutrition courses but through in-service teacher workshops conducted by the State Department of Education.

An outline for an in-service nutrition education workshop for teachers, prepared by Francis Dobbins, then Nutritionist, Oklahoma Department of Education, was presented at the 1971 Southwest Region School Food Service Seminar (26). A similar workshop was given for 40 teachers in Muskogee, Oklahoma, in 1972. It was planned and carried out by the Muskogee School Food Service Department in cooperation with the Oklahoma State School Lunch Division, Department of Education (27). This program has not been administered in the Tulsa, Oklahoma, area. However, the further use of a comparable workshop in other areas would seem to be a possible means of extending existing programs.

School Lunch Programs and Education

Since the National School Lunch Act of 1946 and the Child Nutrition Act of 1966, great strides have been made in feeding the school age child. Fifty per cent of the country's children are now served lunch at school, and two million children eat breakfast at school. Schools participating in the National School Lunch Program must agree to adhere to specified regulations and objectives, among these are the requirements

of providing children with a nutritious meal at school and that they are to be helped to understand the relationship between the food they eat and life long health. This last objective introduces the challenge of nutrition education. Implementation of the program in schools is in great part a decision of the school administration. For instance, in a study in Georgia, it was shown that the attitude of the school principal had the greatest single effect upon pupil participation in the school lunch programs (28).

In planning for nutrition education in the elementary schools, the characteristics of positive programs of nutrition education were listed by Hill (29). Among these are (1) meeting the nutritional needs of the particular children being taught, and (2) inclusion of the school lunch as a teaching resource. Ulrich and Briggs (30) stated that:

The time has come to recognize that the food served in the schools as breakfast or lunch is an excellent teaching resource. Unless the student is taught to eat and enjoy nutritious meals, part of the educational obligation of the school has been overlooked (p. 179).

The American Dietetic Association has urged the utilization of school food service programs as a laboratory for teaching nutrition. The meals served and meal pattern used in planning them could become a core for a series of dynamic, applied nutrition lessons (31).

Bettelheim (32) has stressed the psychological implications of school feeding programs. Early eating experiences condition children's attitudes toward the world--attitudes that are preconditions for all academic achievement--to trust, the ability to control oneself, to wait, to work for future rewards. Teachers may need to be assisted in understanding the full implications of the school lunch program and the effects of the way that children are fed.

Effectiveness of Nutrition Education

In several studies it has been shown that education can be effective in changing people's eating habits. Vegetable consumption increased significantly in children in a summer camp for diabetics after they received a vegetable education program. Education was identified as an important factor in the increased consumption (33). After a nutrition education program for fifth, seventh, and tenth grade students, the seventh grade students significantly improved their diets. The acceptability ratings of the school food served and nutrition knowledge scores went up among fifth graders (34).

In another study, 200 fourth and fifth graders were taught a nutrition unit in which they actively participated in experiments. Nutrition test scores were significantly higher than in control classes when re-testing was done within a week after completion of instruction (35).

In a project to test whether people would voluntarily change their food habits, 992 volunteers signed pledge cards to "adopt a new and good food habit or to eliminate an old and bad food habit" (36, p. 7). A sample of 100 persons was drawn; 50 to represent the 17 and under age group and 50 to represent the 18 and older group. Of the sample, 67 per cent of the persons adhered to their pledges 90 to 100 per cent of the time during the pledge week. Elementary school children who took part proved to be the most successful participants in the program. This study suggests again that nutrition education should be introduced early and that children may be a possible nutrition education channel to parents.

The Dairy Council has developed a nutrition education program, "Big Ideas in Nutrition Education--and How to Teach Them," and offers

the program to educators. The Dairy Council of California conducted a study to analyze the program's effect on students and teachers. A sample of 306 second grade teachers were surveyed on nutrition knowledge, nutrition teaching materials and methods, media read, and interest in nutrition. Of the group, 97.4 per cent felt teaching food and nutrition was part of their job, 75 per cent had received educational materials from the Dairy Council, and 50 per cent had previous contact with the Council (37).

A second phase of the California study dealt with a teacher training program in nutrition and with teaching by behavioral objectives. Pre-test and post-test scores showed high improvement scores from the training program. In a third phase, the study indicated the final effects on students. Students were divided into three groups and tested on their nutrition knowledge and ability to apply knowledge in making a balanced meal selection. Students in the experimental group with Dairy Council trained teachers increased their nutritional knowledge by 51 per cent, while students in the semi-controlled group with teachers supplied with materials and general objectives only improved their scores by 39 per cent. The control group with teachers supplied only with general objectives improved their scores by only 22 per cent.

In a similar study of the effectiveness of the Dairy Council workshops in Ontario, Canada, more than 70 per cent of the teachers who took the workshops taught some nutrition education to their classes. Students in classes taught by workshop trained teachers showed improvement in nutritional knowledge, and there was improvement in claimed eating behavior by children in those classes (38).

Teacher Attitudes Toward Nutrition Education

Most efforts so far have concentrated on methods of introducing effective nutrition education into the schools. Few studies have been conducted concerning teachers' attitudes toward nutrition education. One study in Nebraska was conducted to determine nutrition knowledge and attitudes of primary teachers. The study did not support the assumption that undergraduate curriculum courses in nutrition for teachers resulted in greater knowledge of the subject. Teachers expressed doubtful or negative attitudes toward cooperative efforts between school feeding program personnel and classroom teachers. Negative attitudes were expressed by large numbers of the teachers on the qualifications of school feeding program directors and the usefulness of a dietitian-teacher. A lack of support for the breakfast program was surprising since 100 per cent felt that children would perform better with an adequate breakfast. These inconsistencies indicate a lack of understanding and perhaps the inability or unwillingness to cooperate in a coordinated program (39).

In a similar study undertaken in Florida, nutrition education was supported by administration and teachers. However, the majority felt that these nutrition programs would be effective only if the school effort was supported by the community and augmented by other public agencies (40).

In 1971, a study was made in the elementary schools in Oahu, Hawaii, to determine if suggestions in the state instructional guide for health and safety education were used in nutrition teaching. Teachers were asked to rate the importance of the suggestions and then questioned as to actual use of the resources. More than 50 per cent of all teachers rated each

suggestion in the instructional guide as very important. However, actual use declined considerably with the exception of discussions of basic nutrition and food practice. As an example, 100 per cent of the teachers of grades four through six rated the use of resource professionals (nutritionists, cafeteria managers) as very important, but these professionals were reported used by only three per cent of the teachers. The study recommended providing teachers with more appropriate, easier to use materials, suitable to use in all subjects (41).

The Food Service Department and the Audio Visual Department of the Ponca City, Oklahoma, Public Schools have cooperated in producing a very unusual and effective nutrition education program. The Audio Visual Department filmed a series of skits on nutrition which are broadcasted on the public educational television. These films may be viewed both during school hours and after school. Although the skits themselves are geared to the elementary level, high school students participated in the customung, set building, acting and the other phases of production. It is felt that this program has been instrumental in substantially raising the participation in the school lunch program.

CHAPTER III

PROCEDURE

This chapter includes the procedure to meet the objectives, to select the population and the analyses of the results.

To achieve the first objective of determining the frequency of use of nutrition education materials available to the elementary teachers in Tulsa, Oklahoma, during the past two years, Mr. John Roller, Associate Supervisor of Science of the Tulsa Public Schools was contacted. Mr. Roller provided copies of nutrition education materials used in the schools, along with curriculum guides. A list of films available to teachers was obtained from the media center of the Education Service Center for Tulsa Public Schools. This information was summarized in a "Materials and Resources Usage Checklist" and included in a questionnaire sent to teachers. The teachers were asked to indicate the films they had shown and in which grades during the school terms of 1976-77 and 1975-76. Printed material was identified as National Dairy Council instruction units, the Health and Growth textbook, and other materials. The school cafeteria was identified as a learning situation as well as a feeding service. Teachers were asked to indicate usage of the school cafeteria in the same manner as the films.

To achieve the second objective--to determine teachers' attitudes toward: (a) nutrition education in the schools, (b) nutrition education teaching materials and resources, and (c) the school lunch program--26

opinion statements were developed. Teachers were asked to indicate attitudes toward the statements. A percentage and frequency count of responses was made for each statement.

To achieve the third objective--to determine the relationships of these attitudes to subject taught and academic background in nutrition--a background section was included in the questionnaire. Each teacher checked the grade levels and subject areas she taught, whether she had had previous education in nutrition, and if she had taught the same subjects during the last two years. Responses for each opinion statement were broken down according to subject the teacher taught and her previous education in nutrition. The Chi-square statistical test for the null hypothesis of no significant difference was applied to each possible relationship.

To achieve the fourth objective--to determine the relationships of frequency of nutritional resource use to subject taught and to academic background in nutrition--frequencies of resources used for each grade were broken down according to these background information categories and the Chi-square statistical test applied for the null hypothesis of no significant difference for each possible relationship.

After consulting Dr. Paul McCloud, in charge of the research for Tulsa Public Schools, it was decided that the best method of sampling the elementary teachers, kindergarten through sixth grade, was to take a random sample of 25 schools out of the total 74 elementary schools in the system and to poll each teacher in the selected schools. It was felt the large random selection of schools in the system would be sufficient to control for the varying characteristics in different sections of the city. All subjects taught and grade levels taught were represented by

polling every teacher in each of the schools in the sample.

To achieve the fifth objective--to be able to make recommendations to facilitate nutrition education in the schools--conclusions were made concerning the responses teachers made to the materials use section and opinion section of the questionnaire.

The questionnaire was submitted to a panel of judges for criticism. Dr. E. Winterfeldt, Dr. B. Kcpel, and Dr. N. Stinnett served as the panel of judges. The questionnaire was then pretested on a small group of nine Tulsa teachers to determine question clarity, length of time needed to complete the questionnaire and general acceptability.

The 25 selected schools represented 455 questionnaires sent to teachers (including half-day teachers). This was approximately 37 per cent of the total number of 1,218½ elementary teachers in the Tulsa system. Of the 455 questionnaires sent out, 236 were returned. Ten of these questionnaires had to be discarded due to incompleteness, so that 226 questionnaires were finally used for a return of 49.7 per cent of the sample.

CHAPTER IV

RESULTS AND DISCUSSION.

In order to determine the opinions of elementary teachers in Tulsa, Oklahoma, in regard to nutrition education and the use of educational materials in the schools, questionnaires were sent to a selected sample of teachers. The sample was chosen by randomly selecting 25 of the 74 elementary schools in the system and polling each teacher in the selected schools. A final 226 returns were used in the study.

Teachers were asked to check the grade level or levels which they taught. This information proved useful in double checking the information on the materials use checklist, but because of the many combinations of grades taught, no breakdown was made according to grade level taught.

There was some overlapping in subjects taught so that the total number of times subjects are represented totaled 239. The breakdown of subjects taught is shown in Table I. It was decided that the grade level of kindergarten should be treated as a subject for the purpose of analysis.

In regard to previous courses in nutrition, 50 teachers had had a separate college course in nutrition and 72 had had some nutrition education integrated in another college course. Nine teachers had had the Dairy Council's workshop as their only previous nutrition education. Of those with more than one educational experience, six had had both the separate course and an integrated course. Seven had had a combined

course plus the Dairy Council workshop. Two had had the Dairy Council workshop with a separate college course. Adding the categories with the workshop resulted in a total of 18 teachers in all (eight per cent of the returns) who received instruction from the Dairy Council. This is the third school session that the Dairy Council has been offering this program. The largest group of teachers (80) had no previous training in nutrition (Table II).

TABLE I

SUBJECTS TAUGHT BY TEACHERS RESPONDING TO THE QUESTIONNAIRE

Subject Taught	Frequency
Homeroom (platoon)	75
Homeroom (self-contained)	34
Kindergarten	22
Science	16
Speech	16
Music	14
Art	13
Physical Education	10
Other	39

TABLE II
NUTRITION EDUCATION BACKGROUND OF TEACHERS

Educational Experience	Frequency
Separate college course in nutrition	50
Integrated in another college course	72
Dairy Council workshop	9
No previous training in nutrition	80
Separate course plus integrated course	6
Integrated course plus workshop	7
Separate course plus workshop	2

Results of Opinion Poll

Twenty-six statements were listed in the questionnaire preceded by "in my opinion". Answers for each question were then summarized according to subject taught by the respondent and again by education background. The statistical Chi-square test was used to examine the null hypothesis of no significant difference in the various perceptions according to subject taught by respondent and educational background. Results proved to be not significant unless specifically mentioned in the discussion of each opinion statement. The first 10 statements concerned nutrition education in the schools. The next nine statements examined the school lunch program. The last seven statements concerned educational materials and resources available to the teachers.

Statement 1: Should Nutrition be Taught
in the Elementary Schools

A strong majority of the teachers, 209 (92.5 per cent), did feel that it was the schools' job to teach nutrition to elementary children. Seven (three per cent) said "no" and 10 (4.5 per cent) were "uncertain". None of those with the Dairy Council workshop disagreed that nutrition should be taught in the schools. Teachers were much less certain as to specifically who should be teaching it.

Statement 2: Nutrition Education is a
Part of My Job

Responses to this statement were fairly evenly distributed between "yes", 99 (43 per cent); and "no", 92 (41 per cent); with 35 (15 per cent) "uncertain". In examining this relationship, teachers who felt that it was a part of their job to a statistically significant degree were kindergarten (significant at 0.0002 level), science (significant at 0.0008 level) and self-contained homeroom teachers (significant at 0.0528 level). Platoon homeroom teachers, on the other hand, definitely did not feel that teaching nutrition was part of their job (significant at 0.01). Art and physical education teachers considered nutrition education a part of their job by a simple majority, but not to a significant level.

When responses were broken down by educational background, all those with at least some nutrition background agreed with Statement 2 by a simple majority. Those with no nutrition background disagreed with Statement 2.

Statement 3: Each Elementary Teacher Should
be Involved in an Integrated Nutrition
Education Program

"Yes" responses were given by 82 (36 per cent) of the teachers, with 78 (35 per cent) indicating "no" and 66 (29 per cent) "uncertain". Science, physical education, self-contained homeroom, kindergarten, art and music teachers tended to be more positive in their responses. This might indicate an interest and willingness to become involved on the part of art and music teachers. Speech and homeroom-platoon teachers were much more negative.

Statement 4: The Science Teacher Should
Teach Nutrition

The majority of teachers, 173 (77 per cent), either by subject or background agreed that teaching nutrition is the science teacher's job. Only 14 (six per cent) disagreed, and 39 (17 per cent) were uncertain. Only the kindergarten teachers as a group disagreed (significant at 0.0032 level).

Statement 5: The Physical Education Teacher
Should Teach Nutrition

The greatest proportion of teachers, 99 (44 per cent), and the greatest proportion of each subject category felt that the physical education teacher should teach nutrition. However, in examining the hypothesis, no significant difference in teachers' attitudes and subject taught, it was found that the physical education teachers strongly disagreed. Their disagreement was significant at the 0.0105 level. Other

Other responses numbered 62 (27 per cent) "no", and 65 (29 per cent) "uncertain".

Statement 6: Nutrition Should be Taught in
All Elementary Grades

The majority of all the teachers, 178 (79 per cent), by subject and by background were in agreement with Statement 6. Other responses numbered 23 (10 per cent) "no", and 25 (11 per cent) "uncertain".

Statement 7: Any Elementary Teacher Could
Teach Nutrition Using the Available
Materials

Although the majority of all teachers, 146 (65 per cent), as well as by subject and background, agreed with this statement, the science teachers were more positive than most. The statistical relationship of Statement 7 to the subject of significant at 0.0443. "No" responses were indicated by 39 (17 per cent), "uncertain" by 41 (18 per cent).

Statement 8: I Have the Training to Teach
Nutrition

More teachers said "no", 109 (48 per cent), than "yes", 95 (42 per cent), to Statement 8. "Uncertain" responses numbered 22 (10 per cent). Majorities in all subject categories said "no" except science and kindergarten teachers who thought they did have the training to teach nutrition. The relationship of the kindergarten teachers to Statement 8 was significant at 0.0009. When responses were broken down by educational background, a Chi-square test proved significant at the 0.0001 level. The

more training the teachers had had the more qualified they felt.

Statement 9: I Have the Time to Devote to

Teaching Nutrition

Responses to this statement indicated that 143 (63 per cent) did not think they had time to teach nutrition with 51 (23 per cent) indicating "yes" and 32 (14 per cent) "uncertain". Both science and kindergarten teachers were exceptions, answering "yes". These two relationships to Statement 9 were significant at 0.0001. Interestingly, art teachers were also exceptions and their replies were significant at 0.0194. Platoon teachers again were strongly negative. When Statement 9 was broken down by educational background, a significant difference was evident (0.0043) among the teachers who had had a workshop from the Dairy Council. They felt that they had the time to devote to teaching nutrition. The majority of all other teachers, even with a separate college course in their background, did not feel that they had time for nutrition education.

Statement 10: Teaching Nutrition in the

Schools is Effective in Motivating

Children to Improve Their

Eating Habits

Of the teachers as a whole, 143 (63 per cent) thought that teaching nutrition in the schools is effective. Sixty-eight (30 per cent) did not know and only 15 (7 per cent) expressed a definite "no". There were no particular variations when applied to subject taught or background.

The following statements relate to the school lunch program.

Statement 11: The School Lunches are
Nutritionally Adequate

The majority, 142 (63 per cent), of teachers in general, by subject and by background, felt that the school lunches were nutritionally adequate. Other responses numbered 43 (19 per cent) "no" and 41 (18 per cent) "uncertain".

Statement 12: The School Lunches are
Well Prepared and Appealing

A slightly smaller majority, 124 (55 per cent) agreed that school lunches are well prepared and appealing. Fifty-five (24 per cent) disagreed and 47 (21 per cent) were uncertain.

Statement 13: The School Lunch Program Makes
an Important Contribution to Students'
Health

The majority of teachers, 170 (75 per cent), agreed with this statement. Eighteen (8 per cent) were in disagreement and 38 (17 per cent) were uncertain.

Statement 14: The Classroom Teacher Should
Encourage the Students to Eat in the
School Lunch Program

Teachers were somewhat less certain in relation to this statement. There were 114 (50 per cent) in agreement, 47 (21 per cent) disagreeing, and 65 (29 per cent) were uncertain.

Statement 15: The School Cafeteria Offers
a Pleasant Eating Environment for
Students

About half of the teachers, 125 (55 per cent), thought the cafeteria was a pleasant place. However, 56 (25 per cent) did not, and 45 (20 per cent) were uncertain.

Statement 16: The School Lunch Program is an
Educational Program as Well as a Feeding
Program

Only 90 (40 per cent) thought of the school lunch program as an educational program, leaving 56 (25 per cent) uncertain and 80 (35 per cent) saying "no". The opinions differed somewhat, according to subjects taught. More homeroom teachers and kindergarten teachers disagreed; while the majority of art and science teachers were uncertain; and speech, music and physical education teachers tended to agree.

Statement 17: I am Aware of What is Meant by
the Meal Pattern for the Type A Lunch

A low majority, 117 (52 per cent), were aware of what is meant by the meal pattern for the Type A lunch, while 76 (34 per cent) did not know, and 33 (15 per cent) were uncertain. It appeared that if teachers were uncertain, they probably did not know the pattern. More science, platoon, and kindergarten teachers felt they understood the pattern, while the majority of responses from other subject teachers felt the other way.

Statement 18: My Students Understand the
Type A Lunch Pattern

Only 28 (12 per cent) of teachers felt their students understood the Type A lunch pattern. Most of the teachers, 122 (54 per cent), did not think so and 76 (34 per cent) were uncertain.

Statement 19: The Type A Lunch Pattern
Should be Explained to Students in a
Class on Nutrition

Responses indicated that 150 (66 per cent) agreed to this. Only 15 (7 per cent) were opposed, with 61 (27 per cent) being undecided. The previous three statements indicate an area of need in explaining the school lunch program to both teachers and students.

The following statements relate to teaching resources. Statements 20 through 23 will be considered together.

Statement 20: The Nutritional Teaching Mate-
rials are Adequate in Content; Statement 21:
The Available Nutritional Teaching Mate-
rials are Appropriate to the Age Level
I Teach; Statement 22: The Materials
are Up-To-Date; Statement 23: The
Materials are Effective

The majority of teachers were uncertain in all these statements, 133 (59 per cent), 136 (60 per cent), 147 (65 per cent), and 164 (73 per cent), respectively. "Yes" responses were indicated by 36 (16 per cent),

41 (18 per cent), 40 (18 per cent), 34 (15 per cent), respectively. "No" responses were given by 56 (25 per cent), 49 (22 per cent), 39 (17 per cent), and 28 (12 per cent), respectively. Of those who held opinions on these four statements, the majority of subject teachers disagreed with two exceptions. When the hypothesis was examined to determine the relationship of these attitudes to subject taught, science teachers tended to agree with each statement (significant at 0.0415, 0.0278, 0.0054, and 0.0097 levels, respectively). Kindergarten teachers tended to agree with the last three statements, but not to a significant level. When the hypothesis was examined to determine the relationship of these attitudes with educational background, a significant attitude change with respect to these four statements was seen. Dairy Council trained teachers were more likely to agree that materials were adequate (significant at 0.0009), appropriate to age level (significant at 0.0009), up-to-date (significant at 0.0054), and effective (significant at 0.0097).

Statement 24: I Have Considered the School

Cafeteria as a Teaching Resource

It was somewhat surprising that 64 (28 per cent) had indeed considered the school cafeteria as a teaching resource. Those indicating "no" numbered 138 (61 per cent) and 24 (11 per cent) were "uncertain". Science teachers were those most in agreement. The Chi-square test was significant at the 0.0338 level.

Statement 25: I Have Considered the Type A

Lunch Pattern as a Teaching Resource

Only 35 (15.5 per cent) of the teachers had considered the Type A

lunch pattern as a teaching resource, while 147 (65 per cent) had not, and 44 (19.5 per cent) checked uncertain. Although the 35 who said "yes" were scattered among all subject teachers, science teachers, with five "yes" answers, were more likely to have considered the Type A lunch pattern as a teaching resource than the others. The relationship of the science teachers to Statement 25 was significant at 0.0228 to give a "yes" answer.

Statement 26: I Have Considered the School

Dietitian as a Teaching Resource

Only 34 (15 per cent) of the teachers had considered the school dietitian as a teaching resource. Science teachers did not stand out this time. However, more physical education teachers than statistically expected agreed (significant at 0.0145). This was interesting in light of the fact that they felt they should not teach nutrition at all.

Replies to Statement 26 may indicate confusion on the part of several respondents as to whom the dietitian is. One return had "dietitian" scratched out and the word "nurse" written in. One wrote in that they did not have a "dietitian" as such. It is possible that teachers answering "yes" thought of the school cafeteria manager as a dietitian.

Summary of Opinions

Teachers, in general, were in agreement that nutrition should be taught in elementary schools and at all grade levels. They also agreed that nutrition education is effective in motivating children to improve their eating habits.

Most teachers (except kindergarten) felt that the science teacher should teach nutrition. Teachers also felt that any elementary teacher could teach nutrition, but most felt they did not have the training or the time. Kindergarten and science teachers responded strongly positive toward most statements on nutrition education. Art teachers were another group showing strong, partly unexpected, interest in teaching nutrition. This should be explored for more possibilities of integrating nutrition education into art classes.

Regarding statements on the school lunch program, teachers were much less positive. One of the lowest positive scores (40 per cent "yes") was for the opinion that the school lunch is an educational program as well as a feeding program. One teacher wrote in "should be" by this statement. Since this was one of the original intents of this program, this indicates an area which needs attention. Only half of the teachers knew what the Type A lunch pattern was, and most felt their students did not know. The school lunch program needs to be explained to both teachers and students.

A few teachers added their own comments concerning school lunch. One teacher wrote in "I feel like a catered McDonald's hamburger and carton of milk would be more nutritional than all the starches and sugar served in the school lunch programs that I have seen". Several others wrote in comments like "too starchy".

Science and kindergarten teachers again reacted favorably toward available teaching materials. A significantly positive attitude change was seen by teachers who had had the Dairy Council workshop compared with those teachers who had not. These teachers were also the ones who felt they had the time and the training to teach nutrition. In the Dairy Council workshop, teachers are supplied with a complete teaching unit

with teacher and pupil materials and are shown how to use them. This saves teachers a lot of time in having materials ready and available for use.

The last three statements concerned other teaching resources which are generally overlooked. Some science teachers had indeed considered the school cafeteria and the Type A lunch pattern. More physical education teachers than expected had considered the school dietitian as a teaching resource.

Results of Materials and Resources

Usage Checklist

Included with the questionnaire sent to teachers was a Materials and Resources Usage Checklist in two sections. The first section listed films related to nutrition that are available to teachers through the Tulsa School System's Media Center. The teachers were asked to indicate with a grade level number or numbers the films they had used in their classes during the two school terms of 1976-77 and 1975-76, including any planned for spring of 1977. Results were then totaled as to number of films shown each grade by that teacher for both school terms.

Table III shows the number of times that each grade level was shown just one film in a term, two films in a term, three films and so on. The instance of nine films shown to the first grade, second grade, and third grade was by a teacher in charge of "media" at one school. The totals at the bottom represent actual number of films shown each grade. Films shown all grades in the school term 1976-77 totaled 158. This total divided by the 25 schools represented an average of 6.32 times a

nutrition film was shown to a class in a particular school in the 1976-77 school term. If the unusual instance of the media teacher was not used, the average dropped to 5.24 times.

TABLE III
NUMBER OF TIMES FILMS SHOWN BY GRADE

Film Frequency	Number of Times Teachers Showed Films						
	Kindergarten	First	Second	Third	Fourth	Fifth	Sixth
<u>1976-77</u>							
One Film	5	3	2	5	2	4	1
Two Films	0	1	1	0	1	0	0
Three Films	2	4	2	1	2	5	0
Four Films	2	2	1	0	0	0	0
Five Films	0	0	1	2	2	2	0
Nine Films	0	1	1	1	0	0	0
Total Films	19	34	28	27		29	1
<u>1975-76</u>							
One Film	4	1	2	5	3	4	0
Two Films	1	1	1	0	1	0	0
Three Films	1	3	2	1	1	3	0
Four Films	0	1	0	0	0	0	0
Six Films	0	1	0	0	0	0	0
Total Films	9	22	10	8	8	13	0
Total films shown for the 1976-77 school term: 158							
Total films shown for the 1975-76 school term: 70							

The total films shown in the 1975-76 school term dropped substantially from 158 to 70. This could be due to teachers' uncertainty in remembering a past school term, or possibly due to increased awareness

of nutrition education in the more recent school term. Seventy films averaged only 2.8 times a nutrition film was shown to a class in a particular school.

The statistical test of Chi-square was applied to determine if any relationship existed between number of films shown and (1) subject taught, and (2) educational background. All tests proved "not significant". In observing total films shown each grade, it can be seen that they are fairly evenly distributed among the grades with the exception of a definite drop off at sixth grade level.

There are 32,150 elementary children in the Tulsa School System, excluding those in special education. The average class size is 22.8, giving an estimated 1,410 classes. The sample of 33.8 per cent of the schools gives an estimated 476 classes. This figure would approximate an average of 19 classes (or sections) per school to compare with the average 6.32 times a nutrition film was shown to a class in a school for the 1976-77 term. Considering the fact that some classes were shown more than one film, it must be assumed that the majority of the classes do not see even one film on nutrition.

Table IV shows the number of films shown by each subject teacher. Science teachers showed the majority of the films. Self-contained homeroom and kindergarten teachers were also showing nutrition films. The platoon homeroom teachers were also showing a number of films. These teachers, as a group, had not felt that nutrition education was part of their job. Twenty-seven of the films under the category of "other" were shown by the one media teacher mentioned previously.

The second section of the Materials and Resources Usage Checklist listed various printed materials as well as the school cafeteria. The

Dairy Council's instruction units, "Little Ideas", "Big Ideas", and "Rat Pack" were listed. The term "other Dairy Council materials for a nutrition unit" was listed for teachers who made their own instruction unit. The Nutrition Chapter of the Health and Growth textbook was listed. All schools are supposed to have the health textbook. There was a place provided for "other materials for a nutrition unit". Again, teachers were asked to indicate with a grade level number, or numbers, the materials they had used in their classes during the two school terms of 1976-77 and 1975-76. For analysis, materials were grouped into "nutrition units taught with Dairy Council materials" and "nutrition units taught with other printed materials".

TABLE IV
NUMBER OF TIMES FILMS SHOWN BY SUBJECT TEACHERS

Subject Teacher	1976-77	1975-76
Science	90	45
Kindergarten	7	6
Art	0	0
Physical Education	0	0
Speech	0	0
Music	0	0
Self-contained Homeroom	8	9
Platoon Homeroom	25	10
Other	28	0
Total Films	158	70

The statistical test of Chi-square was applied to determine if any relationship existed between the number of nutrition units taught and

(1) subject taught, and (2) educational background. All tests proved to be not significant.

Table V shows nutrition units taught with Dairy Council materials and other printed materials for the two school terms broken down by subject taught and by grade level. Nutrition units taught with Dairy Council materials for the later school term outnumbered units taught with other materials by 50 per cent, and also outnumbered Dairy Council units for the previous year.

TABLE V
NUTRITION UNITS TAUGHT USING DAIRY COUNCIL AND OTHER
PRINTED MATERIALS BY GRADE

Grade	Dairy Council Materials				Other Printed Materials			
	1976-77		1975-76		1976-77		1975-76	
	1 unit	2 units	1 unit	2 units	1 unit	2 units	1 unit	2 units
Kindergarten	5	10	11	8	4	0	4	0
First	10	3	5	2	5	0	3	0
Second	6	3	5	1	6	0	4	0
Third	4	1	4	0	3	2	5	3
Fourth	3	1	2	0	3	3	2	4
Fifth	3	1	1	0	4	2	3	2
Sixth	4	1	2	0	7	1	6	1
Totals	75		52		48		47	

Nutrition units taught with other printed materials remained approximately the same for the two terms.

Teachers who are teaching nutrition units are the science, kindergarten, and homeroom teachers. A few other instances occurred with

teachers who checked "other". Table VI gives the nutrition units taught according to type of teacher.

TABLE VI
NUTRITION UNITS TAUGHT USING DAIRY COUNCIL AND OTHER
PRINTED MATERIALS BY TYPE OF TEACHER

Type of Teacher	<u>Dairy Council Materials</u>		<u>Other Printed Materials</u>	
	1976-77	1975-76	1976-77	1975-76
Science	25	12	26	30
Kindergarten	24	25	3	3
Other	0	0	5	5
Self-contained Homeroom	12	10	4	6
Platoon Homeroom	12	4	10	3
Physical Education	1	0	0	0
Art	1	0	0	0
Speech	0	0	0	0
Music	0	0	0	0
Totals	75	52	48	47

The kindergarten students are receiving more nutrition units with Dairy Council materials than other grades. Among the other grades, the teaching of nutrition units are fairly evenly distributed.

Nutrition units for the 1976-77 school terms taught with both Dairy Council materials and other printed materials totaled 123 or slightly less than five units per school. The previous school term totaled 99, averaging four units per school. These averages might be compared with the previously estimated average of 19 classes (or sections) per school for a rough idea of the percentage of classes receiving a unit in nutrition. Since several classes, particularly kindergarten, received two

nutrition units it can be assumed that even more classes did not have one nutrition unit.

Table VII shows the number of times the school cafeteria was used as a teaching resource both by grade level and by type of teacher. The cafeteria was used 30 times in the 1976-77 school term and 24 times in the 1975-76 school term.

TABLE VII
USE OF SCHOOL CAFETERIA AS TEACHING RESOURCE BY GRADE
AND BY SUBJECT TEACHER

Grade Level	1976-77 School Term	1975-76 School Term
Kindergarten	5	6
First	5	4
Second	4	3
Third	3	3
Fourth	4	3
Fifth	5	3
Sixth	4	3
Totals	30	25

Subject Teacher	1976-77 School Term	1975-76 School Term
Science	3	3
Kindergarten	5	6
Other	9	5
Self-contained H.R.	5	4
Platoon H.R.	8	7
Physical Education	0	0
Art	0	0
Speech	0	0
Music	0	0
Totals	30	25

Teachers with the highest use score were platoon homeroom and other. Self-contained homeroom and kindergarten teachers followed with science teachers last. The cafeteria's use as a teaching resource among the grades was fairly evenly distributed. The incidence averages close to one time per school. Again, using the hypothetical 19 classes or sections per school to compare with the one use per school, it could be stated that much more use could be made of the school cafeteria as a teaching resource.

Summary of Materials Usage

Nutrition films shown all grades for the 1976-77 school term in the survey of 25 schools totaled 158. Films for the 1975-76 school term totaled only 70. The latter school term figure of 158 averages out to 6.32 times a nutrition film was shown a class in a particular school. Based on number of students in the Tulsa system, average number of students per class, and number of schools, an average figure of 19 classes (or sections) per school can be reached. Comparing these two figures gives a rough idea of approximately one in three classes seeing a film on nutrition in a school term. Considering the fact that several classes viewed more than one film, the ratio drops even lower. The films were shown by science, kindergarten and homeroom teachers.

Of the nutrition units taught with printed material, 50 per cent more were taught with Dairy Council materials during the 1976-77 school term. Nutrition units taught with other printed materials, including school textbooks, remained approximately the same for the two terms. Kindergarten, science and homeroom teachers were the teachers primarily involved in teaching nutrition. The number of these units taught to

classes averaged five units per 19 classes for the 1976-77 school term and four units per 19 classes for the 1975-76 school term. Again, consideration of the fact that some classes, particularly kindergarten, received two units would lower the average. The school cafeteria was used as a teaching resource an average of one time per school per year.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the usage of available nutrition education materials in the elementary schools in Tulsa, Oklahoma. In order to determine teacher support for nutrition education and possible reasons for the use or non-use of materials, teacher opinions were surveyed in these areas. A random sample of 25 schools out of a total of 74 elementary schools was used. All teachers in the selected schools were polled, and 455 questionnaires were sent out. The final number of returns that could be used amounted to 226 or 49.7 per cent of the sample group.

Teachers were generally supportive of the concept of nutrition education. They felt that the science teacher should teach nutrition. Many teachers felt that they did not have the time or training to teach nutrition.

Teachers were less positive toward the school lunch. Only 40 per cent of the teachers thought that the school lunch was an educational program as well as a feeding program.

A significantly positive attitude toward available teaching materials was observed by teachers who had had the Dairy Council workshop compared with those teachers who had not.

From a materials usage checklist in the questionnaire, approximations of resource usage can be determined. Approximately one in three classes sees a film on nutrition during a school term. Approximately five nutritional units per 19 classes were taught during the 1976-77 school term and four units per 19 classes for the 1975-76 school term.

Recommendations Regarding Nutrition

Education

Teachers generally do not feel that they have the training or the time to teach nutrition. Many are unaware of the availability of teaching materials. The Dairy Council's nutrition education program supplies many of the materials and teaching methods which teachers are using. The Dairy Council is filling a void in the teaching of nutrition in the schools. Based on this, it is recommended that standard nutrition education units be designed for each grade level in a manner similar to the Dairy Council's program complete with materials and methods. Materials need to be developed which can be used in all subjects. Workshops need to be held to train teachers in the materials' use. This should be done by a nutrition educator at the state level or by the school dietitian.

Few teachers (40 per cent) recognize the school lunch program as an educational program as well as a feeding program. Sizable percentages of the teachers expressed negative opinions on school lunch. Nearly half of the teachers did not know what the Type A lunch pattern was. A recommendation is made for an educational effort directed toward both teachers and students in behalf of the school lunch program,

explaining both purposes and goals. This information should be integrated into the standard nutrition education units mentioned above. At present, the Dairy Council program is doing this, but it reaches only a few teachers. It is recommended that the role of the school dietitian include a active part in the education system. In order to do this, it is recommended that the school dietitian have freedom of time in her schedule to work with teachers and other school personnel in the development of nutrition education materials and classes. The dietitian would then be visible to both teachers and students and would be recognized as a professional teaching resource as well as a supervisor of food service. They should conduct the nutrition education workshops or in-service education courses for teachers and instruct them in the use of nutrition education units.

Recommendation for Further Study

This study was limited to the Tulsa, Oklahoma, school district. In order to develop standard nutrition education units for statewide use, background information of the type gathered in this study needs to be obtained from the whole state. A statewide study to determine what nutrition education materials are available and being used and why or why not is recommended. Teacher opinions need to be sought to determine areas of support and non-support.

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APPENDIX

QUESTIONNAIRE AND COVER LETTER



Oklahoma State University

Department of Food, Nutrition and Institution Administration

STILLWATER, OKLAHOMA 74074
(405) 624-3018

January 24, 1977

Dear Teacher,

Even with the annual cost of health care in the United States now standing at about \$104 billion (eight times the amount spent in 1950), there is no strong evidence that the health of the nation's people has improved. The concern for this high cost of "sickness care" led to the White House Conference on Food, Nutrition, and Health in 1969 in hopes of placing more emphasis on preventive services, including preventive nutrition.

Subsequent recommendations included:

- .assessment of current status of nutrition education in schools.
- .enlist support of administrators & educators in a coordinated nutrition education program in all grades.

In pursuing my M.S. degree under the direction of the Department of Food, Nutrition, and Institution Administration at Oklahoma State University I am sampling Tulsa district schools to determine the current usage of nutrition education materials and resources and gain insight into the attitudes and opinions of teachers on this subject. Every teacher in your school will receive a questionnaire. We would appreciate very much your assistance in filling out this questionnaire. (Pre-testers averaged 7 minutes). It is important for all teachers to fill it out even if you are not currently teaching nutrition.

Please return the questionnaire to your box by Feb. 4, 1977. An abstract of results will be made available to your school principal.

Sincerely,

Mary Margaret Silvey

Mary Margaret Silvey

Esther Winterfeldt

Esther Winterfeldt, Ph.D.
Advisor

NUTRITION EDUCATION

School _____

GENERAL INFORMATION

Please check appropriate answer to each question. The blanks at the extreme left of the page are for the purpose of coding (do not fill in). Begin with item 5.

1-4. _____ (do not fill in)

5. What grade level or levels do you presently teach?

K _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

6. Which subjects do you now teach?

Homeroom(platoon) _____

Science _____

Homeroom(self-contained) _____

Speech _____

Art _____ Music _____ Physical Ed _____

Other _____

7. Have you had previous education in nutrition:

_____ As a separate college course

_____ Combined in another college course

_____ As a continuing education course or workshop

_____ No previous training

8. Have you taught in each of the last two years? _____yes _____no

9. Have you taught the same subjects as indicated above?

_____yes _____no

OPINIONS ON SCHOOL LUNCH AND NUTRITION EDUCATION

Circle "Yes", "No", or "U" if uncertain before each of the following statements.

In my opinion:

10. Yes U No nutrition should be taught in the elementary schools.

11. Yes U No nutrition education is a part of my job.

12. Yes U No each elementary teacher should be involved in an integrated nutrition education program.

13. Yes U No the Science teacher should teach nutrition.

14. Yes U No the Physical Education teacher should teach nutrition.

15. Yes U No nutrition should be taught in all elementary grades.

16. Yes U No any elementary teacher could teach nutrition using the available materials.

17. Yes U No I have the training to teach nutrition.

18. Yes U No I have the time to devote to teaching nutrition.

- _____ 19. Yes U No teaching nutrition in the schools is effective in motivating children to improve their eating habits.
- _____ 20. Yes U No the school lunches are nutritionally adequate.
- _____ 21. Yes U No the school lunches are well prepared and appealing.
- _____ 22. Yes U No the school lunch program makes an important contribution to students' health.
- _____ 23. Yes U No the classroom teacher should encourage the students to eat in the school lunch program.
- _____ 24. Yes U No the school cafeteria offers a pleasant eating environment for students.
- _____ 25. Yes U No the school lunch program is an educational program as well as a feeding program.
- _____ 26. Yes U No I am aware of what is meant by the meal pattern for the Type A lunch.
- _____ 27. Yes U No my students understand the Type A lunch pattern.
- _____ 28. Yes U No the Type A lunch pattern should be explained to students in a class on nutrition.
- _____ 29. Yes U No the nutritional teaching materials available are adequate in content.
- _____ 30. Yes U No the available nutritional teaching materials are appropriate to the age level I teach.
- _____ 31. Yes U No the materials are up to date.
- _____ 32. Yes U No the materials are effective.
- _____ 33. Yes U No I have considered the school cafeteria as a teaching resource.
- _____ 34. Yes U No I have considered the Type A lunch pattern as a teaching resource.
- _____ 35. Yes U No I have considered the school Dietitian as a teaching resource.

MATERIALS & RESOURCES USAGE CHECKLIST

Use of Films & Filmstrips

Please indicate with grade level number(s) the visual aids you have used in your classes during the two (2) school terms of 1975-76 and 1976-77. (Include those planned for Spring '77). The lines at left are for coding (do not fill in). See SAMPLE.

	SCHOOL TERMS:	
	1976-77	1975-76
SAMPLE: And One To Grow On	1-2-3	2
36. And One To Grow On		
37. Better Breakfast, U.S.A.		
38. You And Your Food		
39. Foods For Health		
40. The Color Of Health		
41. Something You Didn't Eat		
42. Skimpy And A Good Breakfast		
43. Proper Food		
44. Human Growth		
45. Gateway To Health		
46. How To Grow Well & Strong		
47. Your Food & Digestion		
48. How Vitamins Help Man		
49. Food, Fuel For The Body		
50. Food & Growth		
51. Real Talking & Singing Action Movie About Nutrition		
52. Other (specify)		
PRINTED MATERIAL & OTHER RESOURCES		
Please indicate with grade level number(s) where you have used these resources.		
	SCHOOL TERMS:	
	1976-77	1975-76
53. Dairy Council's "Big Ideas" instruction unit		
54. Dairy Council's "Little Ideas" instruction unit		
55. Dairy Council's "Rat Pack" instruction unit		
56. Other Dairy Council materials for a nutrition unit		
57. Nutrition Chapter of the Health & Growth textbook		
58. The school cafeteria as a teaching resource		
59. Have you used other materials for a nutrition unit (specify)		

VITA²

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Candidate for the Degree of

Master of Science

Thesis: NUTRITION EDUCATION IN TULSA, OKLAHOMA, ELEMENTARY SCHOOLS

Major Field: Food, Nutrition and Institution Administration

Biographical:

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Education: Graduated from Holy Family High School, Tulsa, Oklahoma in 1959; graduated from Oklahoma State University in 1963, with a Bachelor of Arts degree, with a major in Economics and a minor in Hotel and Restaurant Administration; completed the traineeship program for membership in the American Dietetic Association in 1974; completed the requirements for the Master of Science degree at Oklahoma State University in 1977, with a major in Food, Nutrition and Institution Administration.