

IMPACT OF NUTRITION EDUCATION TEAM TRAINING (NET)
FOR INTEGRATING NUTRITION EDUCATION
IN OKLAHOMA ELEMENTARY SCHOOLS

By

CHARIS FAYE ROSS

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Thesis Approved:

Bernice Koppel

Thesis Adviser

Joan Baird

Lia L. E. E.

Norman N. Durbin

Dean of the Graduate College

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.	1
Purpose and Objectives	3
Limitations.	4
Assumptions.	4
Definition of Terms.	4
II. REVIEW OF LITERATURE.	7
Introduction	7
National Nutritional Status Surveys of School Children	8
Ten State Nutrition Survey.	8
Health and Nutrition Examination Survey . . .	10
Food Consumption Survey of 1977	13
School Lunch Legislation	14
National School Lunch Act of 1946 (PL 80-396)	14
Child Nutrition Act of 1966 (PL 89-642) . . .	15
Child Nutrition Act Amendment of 1977 (PL 95-166)	15
Nutrition Education Needs Assessment	16
Wisconsin State Needs Assessment.	17
Oklahoma State Needs Assessment	18
Louisiana State Needs Assessment.	22
Evaluation of Nutrition Education Programs	23
Evaluation Studies Conducted.	24
Nutrition Education.	26
Nutrition Education in the Classroom	27
A North Carolina Study.	27
A Five State Study.	28
A Study in Idaho and Utah	29
A Maryland Study.	29
A California Study.	30
Nutrition Education and the School Lunch Program	31
Influence of Teachers' Attitudes Towards School Lunch Programs and Nutrition Edu- cation.	33
Inservice Training Workshops	35
Inservice Training Workshop Studies	35
Summary.	37

Chapter	Page
III. PROCEDURES.	39
Introduction	39
Population Sample	41
Methodology and Instrument Development	42
Instrument Development.	42
Data Collection.	43
Reporting of Data.	44
IV. RESULTS AND DISCUSSION.	45
Introduction	45
Description of the Sample.	46
Nutrition Education Teams.	46
Nutrition Education Teams Functioning	46
Perceived Value of the Nutrition Education Teams	47
Opinions of the Importance of Nutrition Education Team Members.	48
Perceived Leader of the Nutrition Education Team.	49
Perceptions of the School Lunch Program and Nutri- tion Education	51
Cooperation and Coordination Between the Classroom and the School Lunch Program.	52
Major Nutrition Education Related Outcomes	52
Hour Nutrition Education was Taught	52
Nutrition Education Competencies Gained From Nutrition Education Team Training.	54
Opinion of the Need for a State Nutrition Education Curriculum Guide.	57
Use of the State Nutrition Education Curric- ulum Guide.	57
Perception of Students Eating Three Bal- anced Meals a Day	59
Perceived Important Outcomes of Nutrition Education Team Training	59
Opinions of the Need for Academic Preparation and Inservice Education in Nutrition	60
Summary.	62
V. SUMMARY AND RECOMMENDATIONS	64
Conclusions.	66
Recommendations.	67
Recommendations for Further Study.	67
SELECTED REFERENCES.	68

Chapter	Page
APPENDIXES	74
APPENDIX A - REQUIREMENTS (OBJECTIVES) OF NEEDS ASSESSMENT	75
APPENDIX B - NUTRITION EDUCATION--A NEEDS ASSESSMENT FOR OKLAHOMA, TEACHERS' QUESTIONNAIRE. . .	78
APPENDIX C - OBJECTIVES OF THE NET TEAM TRAINING WORKSHOPS.	83
APPENDIX D - OKLAHOMA STATE UNIVERSITIES CONDUCTING NET TEAM TRAINING WORKSHOPS.	85
APPENDIX E - ELEMENTARY SCHOOLS PARTICIPATING IN NET TEAM TRAINING WORKSHOPS.	87
APPENDIX F - SCHOOLS RESPONDING TO THE NUTRITION EDU- CATION TEAM TRAINING QUESTIONNAIRE	91
APPENDIX G - STATES CONTACTED ABOUT NET PROGRAMS. . . .	94
APPENDIX H - LETTER TO PRINCIPALS FROM OKLAHOMA STATE DEPARTMENT OF EDUCATION--SCHOOL LUNCH SECTION, NET PROGRAM	96
APPENDIX I - IMPACT OF NET TEAM TRAINING ON INTEGRATED NUTRITION, TEACHERS' QUESTIONNAIRE	98
APPENDIX J - TEACHERS' RESPONSES TO OPEN-ENDED QUES- TIONS.	109

LIST OF TABLES

Table	Page
I. Nutrition Education Teams Functioning by Frequency and Percentages.	47
II. Extent to Which Nutrition Education Teams Were Functioning by Frequency and Percentages	48
III. Teachers' Perceptions of the Value of the Nutrition Education Team for Integrating Nutrition Education by Frequency and Percentages	49
IV. Teachers' Opinions of the Importance of Nutrition Education Team Members by Frequency and Percentages	50
V. Teachers' Perceptions of the Nutrition Education Team Leader by Frequency and Percentages.	51
VI. Summary of Teachers' Opinions About the School Program in 1978 and 1980 by Frequency and Response. . .	53
VII. Teachers' Opinions of the Coordination and Cooperation Between the Classroom and the School Lunch Program by Frequency and Percentages.	54
VIII. Hours Nutrition Education was Taught per Year in 1978 and 1980 by Frequency and Percentage	55
IX. Teachers' Perceptions of Competencies Gained From Nutrition Education Team Training to Integrate Nutrition Education Into the Curriculum by Frequency and Percentages.	56
X. Teachers' Opinion of the Need for a State Nutrition Education Curriculum Guide in 1978	57
XI. Teachers' Use of the NET Curriculum Guide for Oklahoma--Creative Nutrition--A Team Approach by Frequency and Percentage.	58
XII. Teachers' Perceptions of the Number of Their Students Eating Three Balanced Meals per Day in 1978 and 1980 by Frequency and Percentage	60

Table	Page
XIII. Teachers' Opinions of a Required Nutrition Course in Undergraduate Curricula for Prospective Teachers and Principals in 1978 and 1980 by Frequency and Percentage	61
XIV. Teachers' Opinions of Inservice Training for Help in Integrating Nutrition Education into the Curriculum by Frequency and Percentage in 1978 and 1980	62

CHAPTER I

INTRODUCTION

The 1970s brought an increased awareness and interest on the part of professionals and the public in nutrition education, especially in elementary schools. A response to this interest and concern for the health of all people, especially children, resulted in the 1977 amendment to the National School Lunch Act, NET (PL 95-166). It was to be a multidisciplinary program by which scientifically valid information about foods and nutrients would be imparted in a manner that individuals receiving such information would understand the principles of nutrition and seek to maximize their well-being through food consumption practices (National School Lunch and Child Nutrition Amendment, 1977). This amendment allocated funds for training key personnel to integrate nutrition education into the school lunch program and the classroom.

In Oklahoma, the Nutrition Education and Training Program (NET) is administered by the State Department of Education, School Lunch Section. The initial funding in 1978 provided for a nutrition education needs assessment of: school children, teachers, principals and foodservice personnel in elementary and secondary schools in Oklahoma (Baird and Wohlberg, 1979). Selected recommendations based on the findings included: the need for nutrition education in Oklahoma schools and administrators, teachers, foodservice personnel and parents had a

role in helping to improve the adequacy of children's food intake (Baird and Wohlberg, 1979). Other recommendations were to: provide inservice nutrition education for administrators, teachers, foodservice personnel and parents to improve their competencies to integrate nutrition education into the classroom, the school lunch program and in the home, and that at least one nutrition course be required in the undergraduate curricula for teachers and administrators (Baird and Wohlberg, 1979).

Based on the results and recommendations from the nutrition education needs assessment, Nutrition Education Team Training Workshops were held at seven state universities in Oklahoma during 1979 and 1980. This training was planned for the purposes of: training key personnel in basic nutrition principles, and methods and techniques of integrating nutrition into elementary curriculum and the school lunch program. Each training session had three to six teams consisting of an administrator, a foodservice representative, a parent and four elementary school teachers.

The integration of nutrition education in selected elementary school classrooms and school lunch programs has been in existence for over two years. There is a need to determine the impact of NET Team Training for integrating nutrition education into the elementary curriculum and school lunch programs of selected Oklahoma schools. To determine the impact of the NET Team Training for integrating nutrition education into selected elementary schools, selected teachers' responses from a study to determine the impact of NET team training on integrated nutrition education in Oklahoma elementary schools were compared to the same and similar teachers' responses from questions asked in Nutrition Education--A Nutrition Needs Assessment for

Oklahoma (Baird and Wohlberg, 1979; Kopel and Ross, 1981). Questions pertained to: perceptions of the Nutrition Education Team for integrating nutrition education into the classroom and school lunch program; perceptions of the school lunch program and nutrition education; major nutrition related outcomes of Nutrition Education Team Training and opinions of academic and inservice preparation in nutrition. For this study the responses of teachers will be referred to as the 1980 and 1978 responses.

Purpose and Objectives

The purpose of this study was to determine the impact of Nutrition Education Team Training for integrating nutrition education into selected Oklahoma elementary schools. The objectives of this study were:

1. To determine teachers' perceptions of the nutrition education into the curriculum.
2. To determine teachers' perceptions of the school lunch program and nutrition education in 1978 and 1980.
3. To determine the major nutrition education related outcomes of Nutrition Education Team Training from 1978 to 1980.
4. To determine teachers' opinions of the need for academic and inservice preparation in nutrition in 1978 and 1980.
5. To make suggestions and recommendations for integrating nutrition education into the elementary school curricula and school lunch program.

Limitations

1. The results were limited in both the 1978 data and the 1980 data to those who responded to the questionnaires.
2. The 1980 data was limited to the teachers of grades 1-6 in public schools in Oklahoma trained at NET training.

Assumptions

Assumed are:

1. Mailed questionnaires for the 1980 data were forwarded to individuals no longer at the same school following the NET training.
2. The 1980 sample of teachers was similar to the 1978 sample.
3. The objectives of the NET workshops taught at the seven state universities in Oklahoma were the same.

Definition of Terms

Balanced Diet: A diet that supplies all the nutrients needed for good health in the appropriate amounts and with the right relationship to each other (Krause and Mahan, 1979).

Creative Nutrition Education--A Team Approach: A curriculum guide for grades one through six developed in 1978 as a cooperative effort by home economics faculty at seven universities in Oklahoma, nutrition education specialists in the NET program office and subject matter specialists in the Oklahoma State Department of Education, School Lunch Section. Its purpose was to provide teachers with ideas, concepts, learning activities and evaluation techniques for teaching integrated nutrition education.

Inservice Education (Training): Efforts to promote by appropriate means, the professional growth and development of workers while on the job. In supervision of teaching, one of the major tasks includes planned and organized efforts to improve the knowledge, skill and to make teachers more effective on the job; illustrative are the activities such as role-playing, intervisitation, demonstrations and laboratory sessions (Good, 1973).

Integrated Nutrition Education: The concept of teaching nutrition in all subjects taught in the elementary school classroom and incorporated in the school lunch program.

1978 Responses (Sample): The teachers' responses from the study, "Nutrition Education--A Needs Assessment for Oklahoma," conducted at Oklahoma State University, funded by the United States Department of Agriculture and administered by the Oklahoma State Department of Education, School Lunch Section (Baird and Wohlberg, 1979).

1980 Responses (Sample): The teachers' responses from the study, "To Determine the Impact of NET Team Training Workshops on Integrated Nutrition Education in Oklahoma Elementary Schools," conducted at seven state universities in Oklahoma, funded by the United States Department of Agriculture and administered by the Oklahoma State Department of Education, School Lunch Section (Kopel and Ross, 1981).

Nutrition Education: The process by which beliefs, attitudes, environmental influences, and understanding about food lead to practices that are scientifically sound, practical and consistent with individual needs and available food resources (American Dietetics Association, 1973).

NET: The acronym for Nutrition Education and Training--the amendment to the Child Nutrition Act of 1966 (PL 95-166); Section XIX of the National School Lunch Act and Child Nutrition Amendment of 1977. It was a multidisciplinary program by which scientifically valid information about foods and nutrients is imparted in a manner that individuals receiving such information will understand the principles of nutrition and seek to maximize their well-being through food consumption practices (National School Lunch and Child Nutrition Amendment, 1977).

Nutrition Education Team Training: A series of training workshops held at seven state universities in Oklahoma. The teams usually consisted of one administrator, one foodservice representative, one parent and four classroom teachers. The teams received basic instruction in nutrition, nutrition education, a copy of the integrated nutrition education curriculum guide and instruction as to its uses, as well as other resources.

School Lunch Program: A nonprofit program providing a meal that meets one-third of the students' daily requirements for essential nutrients. It was mandated by the National School Lunch Act of 1946 (PL 80-396) and includes amendments.

Twenty-Four Hour Recall: A recording on paper of foods and beverages eaten in the past 24 hours.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The nutritional status of children in the United States has been found to be low, based on the Recommended Dietary Allowances in selected nutrition surveys (Center for Disease Control, 1972; Dietary Source Data, 1979). Nutrition education in the classroom and the school lunch program can help improve the nutritional status of the nation's school children as found in selected nutrition surveys where participation in nutrition education and school lunch programs increased the number of students having adequate diets (Center for Disease Control, 1972).

The White House Conference on Food, Nutrition and Health (1970) made recommendations to be implemented in the field of nutrition. These recommendations resulted in the Child Nutrition Amendment of 1977, NET (PL 95-166) to the National School Lunch Act of 1966 (PL 89-642). The purpose of this amendment was to provide funding for: the assessment of nutrition education and training needs in individual states; the development of valid nutrition information and education materials; the training of key personnel in nutrition and methods and techniques of teaching nutrition education; and the evaluation of child nutrition programs.

The responses to the need for nutrition education by professionals lead to needs assessments being done in individual states, nutrition education programs being developed, inservice training in nutrition being taught and evaluation of programs to determine if the nutrition needs of the child were being met.

National Nutritional Status Surveys of School Children

National nutrition surveys provide information on the nutritional status of children as well as other age groups in the population. This information is useful in nutrition education needs assessments to determine what is needed in nutrition education programs, to establish nutrition education programs and to determine the direction the programs should take and to evaluate programs to determine if there are any improvements in nutritional status or knowledge due to these programs.

Ten State Nutrition Survey

The Ten State Nutrition Survey was the first comprehensive national nutrition survey conducted. The legal authority for the Ten State Nutrition Survey came from the health amendment of 1967 with the requirement that information be obtained concerning the nation's problems of serious hunger and malnutrition (Center for Disease Control, 1972).

Ten states were selected to provide a population representative of target groups assumed to have a larger number of poverty families and a high prevalence of malnutrition as well as the associated

problems (Center for Disease Control, 1972; Henderson, 1972; Highlights of the Ten State Nutrition Study, 1972; White, 1973). The states selected were: California, Kentucky, Louisiana, Massachusetts, Michigan, New York, South Carolina, Texas, Washington and West Virginia. New York City was also selected along with the 10 states as it had a very high density of the target groups as well as the other criterion.

The primary interest of the survey was malnutrition among the poor; however, the sample of the 10 states does not include all of the lower income group within the entire state (Highlights of the Ten State Nutrition Study, 1972). The population included persons aged six months to 74 years old with school children classified as aged six to twelve (Center for Disease Control, 1972; Highlights of the Ten State Nutrition Study, 1972).

The results of the Ten State Nutrition Survey found many children having nutrient intakes lower than the Recommended Dietary Allowance (RDA) of 1968. There was an increased number of short-for-age children, particularly from the lower income groups, with few sex or ethnic differences seen. This was important as an indice that children are not receiving the amount of nutrients needed to reach their optimum growth and weight for their age. This may account for the evidence of growth and developmental retardation in low-income states (Center for Disease Control, 1972; Highlights of the Ten State Nutrition Study, 1972; White, 1973).

Seventeen to 45 percent of the children had weights that fell below the fifteenth percentile of their desired weight for height. The survey also found a surprising number of overweight children in

the population. Overeating, the lack of exercise, or the imbalance of nutrients were proposed as reasons for overweight in children.

Dietary intake data for children found the following nutrients to be below the RDA in 1968: protein, vitamins A (except in Hispanic children) and C, riboflavin, thiamin and iron. Calories and a high incidence of dental caries were found in children (Center for Disease Control, 1972; Highlights of the Ten State Nutrition Study, 1972; Low et al., 1975).

The ten state nutrition survey also found that school lunch programs were a very important means of providing nourishment to children, contributing a substantial proportion of the total nutrient intake of children, particularly for black children and children in low-income states (Center for Disease Control, 1972; Highlights of the Ten State Nutrition Study, 1972).

This survey provided a means of identifying nutritional status of the population, a guide to where nutritional deficiencies might occur, identification of special subgroups of the population that might be at higher risk of nutritional deficiencies and guidelines to planning food and nutrition programs. Data obtained from this survey was to serve as a base of comparison of nutritional status of individuals for future nutrition surveys conducted in the United States.

Health and Nutrition Examination Survey

The Health and Nutrition Examination Survey (HANES) was undertaken by the National Center for Health Statistics to establish a continuous national nutrition surveillance system.

An individual must be a United States civilian and noninstitutionalized, ages 1-74, to participate in the HANES. The probability sample design of the HANES in which differential sampling of high risk groups was used, permitting estimates to be made of high risk groups as well as the entire population, yet at the same time permitting a more detailed analysis of data from groups thought to be at a greater risk of malnutrition (Dietary Source Data, 1979 and Lowenstein, 1976). These groups are identified as being: poor, pre-school children of all socioeconomic levels, all women of child-bearing age and the elderly.

Information for this study was based on the findings from a sample of 28,043 persons who were to be a representative probability sample of the total United States population (Dietary Source Data, 1979). The sampling included individuals ages 1-74 and took place at 65 locations across the country. There were 20,749 (74%) usable responses from the 28,043 individuals sampled. After an adjustment was made for the effect of oversampling among high risk groups, the effective response rate was 75 percent (Dietary Source Data, 1979; Lowenstein, 1976).

Data were gathered for the HANES from 1971 to 1974, including a general medical examination and history given by a physician to look for general indicators of nutritional deficiencies, a skin examination by a dermatologist and a dental examination by a dentist (Dietary Source Data, 1979; Lowenstein, 1976). Body measurements and biochemical laboratory tests on whole blood, serum, plasma and urine were taken by a trained technician (Dietary Source Data,

1979; Lowenstein, 1976). Body measurements and biochemical laboratory tests on whole blood, serum, plasma and urine were taken by a trained technician (Dietary Source Data, 1979). The dietary interview consisted of a food frequency questionnaire, as well as a 24-hour recall of food consumed.

Race was defined as white (78.8% of the sample), black (20.7% of the sample) and other (1.13% of the sample). The other was used only when total subject is referred to and not in the black-white breakdown. Blacks constituted 11 percent of the United States population but are 20 percent of the sample. Income status had to be considered when the nutritional data was presented because dietary intake--both quality and quantity--has been known to be associated with the level of income. The poverty level index used for this study was the one adopted by the Federal Interagency Committee in 1969 (Dietary Source Data, 1979).

HANES analyzed the following dietary intakes: calories, protein, calcium, iron, vitamins A and C, niacin and riboflavin. Results in this survey were similar to those in the Ten State Nutrition Survey. School children had mean values lower than the recommended for the 6-12 age group, although iron for this age group was sufficient when looking at the mean values. Calories, vitamins A and C, calcium, protein, riboflavin, thiamin and niacin had mean values for children aged 6-12 of approximately 75 to 80 percent of the RDAs (1968) for their age groups.

Results indicated that children of all races and income levels had mean nutrient values lower than the RDAs (1968) recommended for obtaining and maintaining optimum nutritional status.

Food Consumption Survey of 1977

The food consumption survey was conducted from 1977 to 1978 in the 48 continental United States in approximately 1500 households (Cronin, 1979). The planning of the nationwide study had two objectives to be met: to obtain an up-to-date picture of the food consumption of the nation's households as well as the food intake of individuals and to obtain data in such a manner that it could be compared to similar studies in the 1965 Food Consumption Survey (Hama, 1979).

Information was obtained by the detailed survey interview technique. Data considered were the home production of food, household income and participation in food programs, as these factors affect food consumption (Cronin, 1979). The nutritive value of food used was calculated for the edible portion of food as brought into the household with the only adjustment for cooking loss being vitamins. Many times there were slight overestimates of food energy and the nutrient levels of foods eaten in many households, due to waste and edible portion not seen as edible portion by individuals.

Changes from the 1965 to the 1977 Food Consumption Survey were a ten percent decrease in dietary fat, carbohydrates and protein. Although total protein consumption decreased, there was an increase seen in beef, poultry, fish and nut consumption; pork, luncheon meat, eggs and dry beans consumption decreased. Consumption of foods high in calcium decreased from the food consumption survey of 1965 to the 1977 survey, possible due to the decreased number of children in the population during 1977 as well as the sharp increase in the consumption of soft drinks. Vitamins A and C, riboflavin, niacin, thiamin

and iron remained the same or increased. The primary vegetables that decreased from 1965 to the 1977 survey was potatoes, while dark green vegetables increased. Bread consumption decreased, but due to enrichment, there was no significant drop in nutrients. Other products that decreased from the 1965 survey to the 1977 survey were: sugar, syrup, jelly and candy (Cronin, 1979). Foods that increased were: carbonated drinks, punch and sugar desserts (Cronin, 1979).

The implications of the results were the low level consumption of high density food, making it increasingly difficult for many Americans to achieve the current RDAs (Hegstead, 1979).

School Lunch Legislation

In 1946, the National School Lunch Act (PL 80-396) was introduced to eliminate the element of uncertainty in continued funding for school lunch programs.

National School Lunch Act of 1946

(PL 80-396)

The National School Lunch Act of 1946 (PL 80-396) mandated the establishment, maintenance or expansion of non-profit school lunch programs to protect the health and well-being of the nation's children (National School Lunch Act, 1946). The Secretary of Agriculture was given authorization to establish nutritional standards based on tested nutrition research. Lunches were to be served free or at a reduced rate for those unable to purchase a lunch and local officials were given authority to determine eligibility. Section VI authorized the Secretary of Agriculture to use a portion of the monies to

directly purchase food to distribute to state programs. The school lunch program must be non-profit in nature to continue receiving funding (National School Lunch Act, 1946).

Child Nutrition Act of 1966 (PL 89-642)

At the time the Child Nutrition Act of 1966 (PL 89-642) was passed, approximately three-quarters of all children in public or non-profit private schools had access to a school lunch program, with three billion lunches served and two million of the lunches were served free or at a reduced price. Even though 18 million children were participating in the school lunch program, there were 1.4 million needy children eligible for a free or reduced cost lunch who were not receiving one. Approximately 500,000 of these children attended schools that had a lunch program, but due to the problem of inadequate funds, even with the combined monies of federal, state and local agencies, the expenses of free lunches could not be met.

The purpose of the Child Nutrition Act of 1966 (PL 89-642) was to broaden the original bill to provide coordinated, comprehensive child food service in schools (National School Lunch Act, 1966). Comprehensive child food service programs were to include foods from the basic four food groups and provide approximately one-third of the RDAs for: calories, protein, calcium, vitamins A and C, thiamin, niacin, riboflavin and iron.

Child Nutrition Amendment of 1977 (PL 95-166)

The major revision of the National School Lunch Act and the Child Nutrition Amendment of 1977 (PL 95-166) was the addition of funding

for Nutrition Education and Training (NET) under Section XIX. The purpose was to present valid scientific information about nutrition to children participating in the school lunch program, since the importance of good nutrition should be stressed in relationship to good mental and physical health and performance (Winterfeldt, 1980). Provisions were made for the training of teachers, foodservice employees and any individuals who would be teaching nutrition education after the need for nutrition education was established. Funds were designated for: (1) a Nutrition Education Specialist to coordinate the program, (2) the undertaking of an assessment of nutrition education needs within a state, (3) the development of a state plan of operation and management for nutrition education, (4) the application for and carrying out of planning and assessment of grants, (5) pilot projects and related activities, (6) the planning, development and conducting of nutrition education programs and workshops and (7) the coordinating and promoting nutrition information and education activities in local school districts (National School Lunch Act and Child Nutrition Amendment, 1977).

Nutrition Education Needs Assessments

The National School Lunch Act of 1946 was amended in 1977 to include Section XIX, entitled Nutrition Education and Training (NET) to encourage effective dispersion of scientifically valid nutrition information through grants to state education departments to develop nutrition information and education programs with school lunch programs and child nutrition programs as learning laboratories (National School Lunch Act, 1977). This provided funding for instructing students, the

training of school foodservice personnel, instructing teachers, and developing classroom materials and curricula.

In order for states to receive funding for nutrition education and training programs, they were first required to assess the status of nutrition education needs of children as well as training needs of key individuals. This would be accomplished by identifying the differences between "what should be" and "what is" (Baird and Wohlberg, 1979, p. 1).

Wisconsin State Needs Assessment

Wisconsin conducted a nutrition education needs assessment during 1973. Surveyed from a statistically representative structured sample were: 600 principals, 1,100 teachers, 1,009 foodservice employees and 4,636 students. Four survey instruments were developed and administered to the four population groups (Nutter, n.d.).

Students' responses were similar to those in the Oklahoma state needs assessment. Students who skipped breakfast never reached the recommended amount of nutrients for their age group. Also noted were that grade level and nutritional status were inversely proportional: as the grade increased nutritional adequacy decreased. The students with the lowest adequacy were girls grades 10-12 (Nutter, n.d.).

Teachers' usable responses were 1,025 (93.2%). Responses could be grouped into categories of: background in nutrition, attitudes towards nutrition education, responsibilities in nutrition education, and opinions for improving nutrition education. Approximately one-third of the teachers reported that they studied nutrition on their own and fifty percent had had nutrition as part of a general course, while only about a quarter had had at least one nutrition course in

college. Two-thirds of the teachers expressed a willingness to learn more about nutrition and attend future courses. Teachers felt that teaching children nutrition would lead to better eating habits (Nutter, n.d.).

More than 75 percent of the elementary teachers devoted less than 11 hours a year to teaching nutrition. This study found a correlation between the nutrition background of the teacher and the number of hours nutrition was taught in the classroom. Over 65 percent of the teachers who had had a nutrition course or attended a nutrition workshop were teaching nutrition. Teachers were usually integrating nutrition into other subjects which the researchers feel would become the trend, as it would reach a greater number of children.

The majority of the teachers had concerns with the quality of the nutrition textbooks and materials. Teachers' opinions for improving nutrition education were that parents must be involved with nutrition education to help teach children to eat nutritious foods at home.

Teachers indicated the best way to reach parents to increase nutrition knowledge and competency to incorporate it into the home was through the mass media, especially newspaper and magazines (Nutter, n.d.).

The researchers' recommendations were: nutrition courses in college for prospective teachers, inservice training and material development such as videotapes for statewide use as teacher preparation in basic nutrition principles is very weak (Nutter, n.d.).

Oklahoma State Needs Assessment

The Oklahoma State Department of Education contracted with Oklahoma State University in 1978 to conduct a needs assessment to

establish what the nutrition education and training needs were in the state. Funding for this project was obtained from the United States Department of Agriculture and administered by the Oklahoma State Department of Education--School Lunch Section. An extensive statewide survey was a part of the needs assessment. Stratified random sampling was the method used to obtain data from: students, teachers, principals, foodservice personnel and parents.

The stratified random sampling involved categorizing and grouping all dependent school districts in Oklahoma according to their estimated average daily attendance. These totals had to be divided by 24 as this was the average number of students in the classrooms in each group. This determined the allocation of classrooms in each school district for the sample. Next was the listing of all school districts randomly by a computerized procedure. The number of districts needed were then chosen randomly for each group. Letters were sent to superintendents of the school districts selected seeking their cooperation. If the district selected decided not to participate, then a first alternate was contacted. The sample reflected a 20 percent oversample so that the total number of responses would be close to the desired 400 classrooms. The sample represented 33 school districts, 172 schools and 390 classrooms. Total usable responses were: 7,588 (50% return) students grades K-12, 385 (81% return) classrooms, 390 (82.6% return) teachers, 15 (90% return) principals, and 33 (100% return) cook/managers (Baird and Wohlberg, 1979).

Questionnaires used in the nutrition education needs assessment for Oklahoma were adapted from a needs assessment conducted in Wisconsin (Nutter, n.d.). Principals and teachers were asked demographic

type questions as well as their attitudes and opinions of nutrition education and the school lunch program, and their backgrounds in nutrition. Foodservice personnel were asked what they felt important inservice training needs were for foodservice employees (Baird and Wohlberg, 1979). The questionnaire for students consisted of a 24-hour recall food record, their knowledge of the basic four food groups and from whom they learned about good food and nutrition. The students' questionnaire was administered mid-week to insure that the majority of the students would be present.

Students' 24-hour recalls were analyzed by two patterns that are adequate diets: the basic four food groups and the basic four food groups plus the vitamins A and C (Baird and Wohlberg, 1979). The basic four plus vitamins A and C was the basic four food groups with at least one serving from the fruit and vegetable group being high in vitamin A and the same for vitamin C. A liberal interpretation was used for the basic four to allow for the forgetfulness of students. This consisted of: milk (three or more servings/day), fruit and vegetables (three or more servings/day), breads and cereals (three or more servings/day) and meat (two or more servings/day) (Baird and Wohlberg, 1979). Using the two patterns for analyzing students' recalls indicated that the majority of the students had inadequate diets using either pattern. It was found that 2061 (27.4%) of the students had adequate diets based on the basic four pattern and that number decreased to 1129 (15.0%) students having adequate diets when based on the basic four plus vitamins A and C pattern. Grade level of students were inversely proportional to the adequacy of diet: as the

grade increased, the adequacy of diet decreased and was even more pronounced in girls than in boys (Baird and Wohlberg, 1979).

School lunch, when eaten, was found to be more predictive of students having adequate diets. The school lunch was eaten by 66.6 percent of the students. Reasons for not eating the school lunch included: did not like what was served (28%), more fun to eat away from school (21%) and other (19%). Since eating the school lunch program was found to be predictive of a more adequate diet, nutrition education programs need to stress eating the school lunch.

Teachers' responses indicated that they perceived one-fourth to one-third of their students not eating three well-balanced meals a day, with 93 percent of the teachers seeing breakfast as the meal most frequently skipped. Responses indicated that: nutrition education should be taught at every grade level (66.6%), a curriculum guide for integrating nutrition education would be useful (75%) and there should be at least one nutrition course in an undergraduate teachers' curricula (Baird and Wohlberg, 1979).

Teachers' responses indicated that only 24.9 percent had had a regular college course in nutrition, while an additional 11.3 percent had attended a nutrition workshop or inservice training in nutrition. Interest in learning more about nutrition was expressed by 25.9 percent, while 52.9 percent had no opinion or did not know (Baird and Wohlberg, 1979). Only 19 (14.6%) teachers, grades K-12, taught more than 10 hours of nutrition education during the school year, while 48 (36.9%) taught 6 to 10 hours of nutrition during the school year.

Recommendations from this study were:

1. Nutrition education should stress the importance of an adequate breakfast.

2. Administrators, teachers, foodservice personnel and parents all have an important role in improving adequacy of children's food intake.
3. Inservice training in nutrition education should be provided for administrators, teachers, foodservice personnel and parents to improve their competency to integrate nutrition into the classroom, the lunchroom and the home.
4. Children should be encouraged to participate in the school lunch program.
5. Nutrition education programs and activities need to be extended to parents and teachers as they are primary sources of children's food and nutrition information.
6. Undergraduate curriculum for principals and teachers of all grades should include at least one nutrition course (Baird and Wohlberg, 1979, p. 4).

Louisiana State Needs Assessment

Louisiana conducted a statewide needs assessment using a proportional stratified sample of teachers, grades 1-12, during the 1979-80 school year. A four-page questionnaire was designed to obtain data on: demography, educational background, attitudes concerning nutrition and integration of nutrition education in courses taught (Singleton et al., 1980). Questionnaires were mailed to the principals of the participants who distributed the questionnaires and 3037 teachers returned the questionnaires to the researcher. Information was coded and run for statistical analysis of: frequency distribution, analysis of variance and Spearman rank correlation coefficient.

A bachelor's degree was the highest degree earned by 59.5 percent of all teachers, while 25 percent had earned a master's degree. Teachers' responses to the question regarding their nutrition education background indicated 19.5 percent had never studied nutrition,

while only 11.1 percent of the teachers had completed a course in nutrition. More than 50 percent of the total responses used popular magazines, professional journals and curriculum guides to acquire nutrition knowledge.

Ninety-five percent of the teachers ranked nutrition education as important or very important, and at least 50 percent of the teachers thought it should be taught at every grade level. More teachers taught nutrition education integrated into other subjects than as a separate course. It was most often integrated into health and physical education classes. Twenty-four percent of the teachers integrated nutrition education into the school lunch program. Approximately 75 percent felt that the school lunch program can help improve the nutritional status of children (Singleton et al., 1980). The researchers' recommendations included: to develop a nutrition education curriculum guide for all grade levels, to make teachers aware of resource people and materials available, to place greater emphasis on utilizing and integrating nutrition education into the school lunch program, to encourage teachers to obtain additional nutrition information, to increase the amount of time nutrition is to be taught, and to conduct inservice workshops for teachers (Singleton et al., 1980).

Evaluation of Nutrition Education Programs

The Child Nutrition Amendment to the School Lunch Act of 1977 (PL 95-166) allocated funds for the evaluation of federally funded child nutrition programs (National School Lunch Act, 1977; Child Nutrition Amendment, 1978). Data gathered from these studies will give concrete evidence of how the programs are working (Mellinger, 1980).

Evaluation Studies Conducted

An evaluation study in Ontario, Canada measured changes among third graders after nutrition education as well as measuring the number of teachers who implemented nutrition programs after attending nutrition education workshops (Cooper and Philip, 1974). The study was done during June of 1974, of 7800 teachers who had voluntarily attended nutrition education workshops sponsored by the Ontario Milk Marketing Board nutritionists. The workshops provided teachers with basic nutrition information as well as a step-by-step approach to teaching it, as it was felt that nutrition education was important in early life, as dietary habits are established in childhood, and development of good ones at times are hard to accomplish (Cooper and Philip, 1974).

Results found an improvement in cognitive learning by students in those classrooms where teachers had attended nutrition education workshops. There was an increase in the number of students being able to identify a balanced meal, although only a slight increase in the mean number of students actually eating a balanced meal (Cooper and Philip, 1974). Milk consumption increased at breakfast and 70 percent of the teachers reported teaching nutrition education after the workshops.

A K-6 grade nutrition curriculum evaluation of instruction and teacher preparation was done in a suburban area of Pennsylvania. The purpose of the evaluation was to examine the effect of three levels of teacher preparation involving 2959 students from 156 K-6 grade classes taught by 125 teachers (Shannon et al., 1981). The control group took pre- and post-tests but received nutrition education only after the

experiment was completed. The experimental groups included: level one received the curriculum guide with accompanying instructions for its use; level two consisted of a supplemental three-hour inservice conducted by nutritionists and educators in addition to receiving the curriculum guide; level three consisted of teachers receiving a graduate course which included the curriculum guide and 45 hours of instruction during six all-day sessions (Shannon et al., 1981). The test instruments were multiple choice knowledge pre- and post-tests developed by the researchers (Shannon et al., 1981).

Results indicated that even with the use of the curriculum guide and no additional training, students' scores improved, although scores increased slightly more with additional teacher preparation. Results lend support to the belief that inservice training and nutrition education preparation help teachers to integrate nutrition education into the classroom and can help increase students' knowledge of nutrition, which is the first step to changing children's food habits to sound nutritional practices.

North Carolina conducted an evaluation of its NET Program in grades pre-K-6 in 1978 (Dale and Plummer, 1980). The population sample included 1234 teachers, 158 supervisors, 499 food managers, 35,000 students, eight child care consultants and eight representatives from non-public schools. The test instruments included a pre- and post-test questionnaire.

Results indicated that there was a positive significant gain in attitude toward nutrition by 76 percent of the teachers' and food managers' responses. Responses of 80 percent of the teachers and food managers improved significantly on 20 of the 25 items on a nutrition

knowledge test. Conclusions drawn by the researcher were that the NET program: provided programs of superior quality and were highly beneficial to participants; resulted in significant, positive gains in food and nutrition attitudes by all participants; increased nutrition knowledge of key personnel after training in nutrition education and children receiving nutrition education due to NET programs had increased their average knowledge and attitudes of nutrition and food (Dale and Plummer, 1980).

Priorities should be set in all areas of program development and evaluated to ensure program quality. The most important part of the evaluation study is the child, as the assessments of a nutrition education program should be based on the children's needs and evaluated regularly to be sure these needs are being met (Mellinger, 1980).

Nutrition Education

With rising health care costs, nutrition education could be labelled as one of the tools for prevention of disease (Robinson, 1976). The best age group to reach are children to teach nutrition education to as the nutrition concepts can be integrated into other subject areas and become a habit to them (White, 1976). One author feels that the purpose of teaching nutrition to children should be to: (1) equip them with valid knowledge to make wise food choices, (2) help develop a knowledge of nutrition and its role in good health, (3) provide valid information of food and nutrition for survival strategies and (4) provide a baseline so children can determine whether or not mass media nutrition information is valid (White, 1976).

The 1973 and 1978 nutrition education position paper of the American Dietetics Association stated that nutrition education was

essential for all individuals and should be integrated into educational systems, food assistance programs, health-care industries, and mass media programming (American Dietetics Association, 1973; American Dietetics Association, 1978). A nutrition education position paper by the National Nutrition Consortium stated goals similar to the American Dietetics Association position papers. The goal stated that nutrition education should be integrated into systems and when integrated should: create positive attitudes towards good nutrition, provide adequate knowledge and skills so appropriate food choices can be made and assist individuals in identifying valid nutrition resources (Board of the National Nutrition Consortium, 1980).

Nutrition Education in the Classroom

A North Carolina Study

A study was conducted in North Carolina of approximately 4700 students in grades 5, 7 and 10 (Head, 1974). A portion of these students served as the experimental group receiving nutrition education, with the remainder serving as the control group.

The objective of this study was to determine whether nutrition education for students in grades 1-12 would result in changes in food habits or increased acceptability of foods in the school lunch program (Head, 1974). Before school started in the fall, teachers who would be teaching nutrition attended a one-week nutrition workshop. At the beginning of the study, preliminary data collected from both groups of students included: results on nutrition test, acceptability rating of school lunch food and plate waste in the school lunch room (Head,

1974). The same type of data was measured at the end of nutrition education instruction.

Fifth grade students had nutrition education integrated in other courses, seventh graders obtained nutrition education through their health course and tenth graders in their biology course. All fifth graders and one class of seventh graders significantly improved their cognitive knowledge of nutrition as measured by tests after nutrition education. Results were diets of seventh graders improved after nutrition education and fifth graders had decreased plate waste (Head, 1974). Greater success was seen in schools where teachers had positive attitudes toward nutrition education, the administrator was committed to the importance of nutrition education and the teachers cooperated and communicated closely with foodservice personnel (Head, 1974).

A Five State Study

Another study conducted in five states--Arkansas, Kansas, New Mexico, Oklahoma and Texas--by the Dairy Council and Texas Tech, found similar results to the study done in North Carolina (Bell and Lamb, 1973). Fifteen hundred fifth graders were selected from 33 school districts across the five states to determine the influences of nutrition education on eating practices and their ability to learn, comprehend and apply nutrition education by the pre- and post-test method (Bell and Lamb, 1973). The teaching module was developed by the dairy council and teachers were instructed in its use.

Students improved an average of 31 percent on retention and comprehension of material and diets improved approximately eight percent

after nutrition education instruction. The researchers concluded that children had learned and comprehended the material but had not fully applied the knowledge gained (Bell and Lamb, 1973).

A Study in Idaho and Utah

Twenty-seven classrooms, grades K-6, in nine schools, in Idaho and Utah were studied to see if nutrient density nutrition education would be effective in elementary schools as nutrient density can be applied to many aspects of life. Pre- and post-tests were used to assess the effectiveness of this program. At all grade levels, nutrition knowledge increased 80 percent. When asked about food acceptance of high or low density food items, 83 percent of the students exhibited a desire for a higher nutrient dense item after the nutrition instruction (Brown et al., 1979).

Results from questioning teachers indicated that 92 percent planned to continue teaching nutrition integrated into their other subjects, while 25 percent planned to teach it as a separate course. Parents of 112 students felt that their child had: increased nutrition knowledge, attitudes toward food had improved and behavioral changes had improved eating habits. Analysis of data indicated that children are capable and willing to learn sophisticated nutrition concepts (Brown et al., 1979).

A Maryland Study

Thirty classes of 640 second graders in suburban Maryland and Washington, D.C. was the sample group for testing another nutrition education program (Boysen and Ahrens, 1972). One class was the

group receiving the nutrition education program and the other 29 classes served as the control group, with no other nutrition education available other than what was in the health curriculum. The methods of evaluation were: pre- and post-tests, dietary questionnaires and plate waste studies. Both groups received identical evaluation. The program was based on the Basic Four Food Groups.

Knowledge increased significantly after the nutrition education program for the experimental group. Fifty percent of the parents of the experimental group reported that children's eating habits had improved since nutrition education (Boysen and Ahrens, 1972).

A California Study

A successful nutrition education programs has been used in California, instructing 800,000 children, grades K-12, every year. It is taught as a separate course, as it was felt by the Dairy Council of California to be too important to be taught as an integrated subject (Fisk, 1979). Skills in nutrition principles increased from 46.8 percent for 8600 children grades K-12 after nutrition education. Teenagers increased consumption of the minimum servings of each of the food groups in the basic four food groups after nutrition education. Consumption of the minimum servings of: milk from 41 to 71 percent, meat from 60 to 85 percent, fruit and vegetables from 31 to 51 percent, and bread and cereal from 59 to 68 percent (Fisk, 1979).

Nutrition education programs must be designed to encourage better eating habits by providing students with the knowledge of what is healthy so it can be integrated into the students' life experiences (Moomaw, 1978). Children aged 8-12 typically begin to want to exercise

choice over food consumption and to make wise food and nutrition choices must have a sense of wise food choices as well as what is attractive to the eye, pleasing to the palate and wholesome to the body (Moomaw, 1978). These should be taught in nutrition education in the classroom, but students need to apply the knowledge in everyday life and what better place to start than the school lunch program as a learning laboratory (Moomaw, 1978)?

Nutrition Education and the School

Lunch Program

The school lunch program has been seen by some people in the past as a welfare program, while others have seen it as an educational tool in helping to improve the nutritional status of school children (Nestor and Glotzer, 1981). Public Law 95-166 clearly established that the school lunch program was more than just a meal for children, needy or otherwise.

In Little Rock, Arkansas, the school lunch was seen as more than just a lunch room to fill empty stomachs (Blakeway and Knickrehm, 1978). Sixteen schools were divided into two groups of eight, with the first group receiving nutrition education materials provided by the foodservice director with no special encouragement in using them, while the second group was given special encouragement and help in the use of the materials by the coordinator. The nutrition education curriculum included tasting parties provided by foodservice as well as printed materials. The researchers found that after tasting parties there was decreased plate waste which indicated an improvement in

consumption, possibly due to exposure to new food items (Blakeway and Knickrehm, 1978).

In this study there was a significant increase in both knowledge and food consumption after nutrition education. The second group had a slightly better participation from both students and teachers. The second group of teachers who received encouragement developed an impressive display of enthusiastic and innovative teaching aids (Blakeway and Knickrehm, 1978).

The researcher and the participants in the study felt that the school lunch program, nutrition education coordinator and the classroom teacher must be involved in nutrition education if nutrition education is to be effective in changing children's eating habits by teaching them to eat a variety of foods (Blakeway and Knickrehm, 1978). The school lunch program was not only an important resource for nutrition education in Little Rock, but was intimately involved right from the beginning.

A Topeka, Kansas, school lunch program introduced a new, learning type of lunch to approximately 3700 students, grades K-12. A soup-salad-sandwich bar was provided and children were then allowed to mix and match foods to create a type A lunch (Roepke, 1978). The program not only strengthened the efforts of teachers' nutrition education in the classroom, it helped change attitudes, improved foodservice and brought support for nutrition education in the school district (Roepke, 1978).

A study of approximately 1400 students in Pennsylvania was designed to investigate the impact on milk consumption and waste, offering students a choice of whole, skim and low-fat milk, with and without

providing nutrition information at the purchase site (Martilotta and Guthrie, 1980). Results were than when nutrition education was available at the point of purchase, there was an increase in the number of students selecting low-fat milk. Seventeen percent of the junior high and seven percent of the senior high school students indicated that milk choices were influenced by the nutrition education information provided at purchase (Martilotta and Guthrie, 1980).

Influence of Teachers' Attitudes Towards

School Lunch Programs and Nutrition

Education

Teachers' attitudes of the school lunch program and nutrition education influence student participation in the school lunch program, as children's attitudes are related to important adults in their lives. Included were parents, teachers and other adult family members.

A study was developed to: (1) assess attitudes of elementary school teachers toward the school lunch program, (2) discern if attitudes varied with grade taught or the participation rate and (3) discern if participation in the school lunch program was predictive on the basis of teachers' attitudes or a combination of factors (Perkins et al., 1980).

The study was conducted in 1978 and involved 98 teachers, grades 1-6. Students' school lunch participation was 71.9 percent, with only one-fourth of the teachers eating school lunch once a week or more. Most of the teachers ate the lunch only once a week or never participated in the lunch program (Perkins et al., 1980). Teachers of grades

5-6 had more negative attitudes related to eating school lunch than teachers of grades 1-4. All teachers disagreed that student participation would increase if teachers ate with their students.

The results identified that all teachers' attitudes were favorable towards the school lunch program but negative to eating with their classes; however, it was felt that their presence did not influence children's food habits (Perkins et al., 1980).

Teachers had positive attitudes towards the importance of nutrition education and felt that instruction in the classroom had a strong relationship to the school lunch program, as it was easier to influence children's eating habits when they were young. Teachers felt that cooperation and coordination with the school lunch program was important for effective nutrition education, as well as the involvement of parents to help make them aware of the problems in the lunchroom (Perkins et al., 1980).

Although teachers felt that students' portion sizes and prices were appropriate, they felt their own lunches were too costly, there were too many starchy foods served and portions of salads and vegetables were too small. Teachers believed that important benefits of the school lunch for the students were nourishing food and a hot meal at a reasonable price (Perkins et al., 1980).

Results indicated that participation in the school lunch program increased with the number of bussed children and when the number of free or reduced cost meals increased, the working mothers did not significantly influence participation (Perkins et al., 1980). Teachers' attitudes and perceptions of food quality did show a significant relationship to student participation. When food quality was perceived

as good by the teachers, the attitude was noticed in their behavior, influencing participation in the program (Perkins et al., 1980). Further research needs to be done in the area of teachers' attitudes towards nutrition, nutrition education and the school lunch program, as this identifies implications for nutrition education and school lunch programs. Teachers' attitudes towards nutrition education can be changed through nutrition education inservice training workshops, as one study has shown (Kopel and Ross, 1981).

Inservice Training Workshops

The White House Conference on Food, Nutrition and Health (1970) recommended that curriculum guides in nutrition education be developed, but more importantly, the persons who have the responsibility of teaching nutrition education have adequate preparation as well as continuous training to be kept current in the area. One of the position papers on nutrition education stated the use of inservice training to help persons become skilled in the selection and use of appropriate behavioral sciences and education approaches to motivate changes to good food selections (American Dietetics Association, 1978). The structure of the inservice training should be flexible enough to allow for states' individual needs.

Inservice Training Workshop Studies

Oklahoma found that inservice training (funded by PL 95-166) not only improved teachers' competencies to integrate nutrition education into the curriculum but improved teachers', principals', foodservice personnels' and parents' perceptions and opinions of nutrition

education and the school lunch program. Parents in this study indicated that children were: more willing to try new foods, willing to eat fruits and vegetables for snacks, more knowledgeable about nutrition and participation in the school lunch program increased (Kopel and Ross, 1981).

Inservice training workshops were conducted in Pennsylvania. Each course was 30 hours of instruction for three hour periods over three months (Grogan, 1978). Teachers who completed an inservice course were visited by the director of the inservice workshop and a dietitian at least twice after the workshop. Results indicated that 70 percent were teaching nutrition education and utilizing resources from the workshops at a satisfactory level. Teachers reported students showing more interest in nutrition activities than before the training. A pre- and post-dietary were completed by students to see if adequacy of diets had increased. Results showed a slight increase in some dietaries, but overall it was not significant for the total group. The most important outcome reported by the researcher was the enthusiastic support and cooperation that has extended beyond the classroom to school administrators, other teachers, parents, students and members from community agencies as the support has encouraged plans to continue inservice training workshops for a third year (Grogan, 1978). The researcher felt that inservice training is the most effective means of preparation for integrating nutrition education into the classroom, as it requires no major scheduling revisions or additional staffing.

A researcher from Massachusetts agrees with Grogan (1978) that the major thrust of integrating nutrition education into the classroom should be made with inservice training workshops (Callahan, 1973).

States should offer these programs through the school lunch programs, and to promote training, states need to make them part of their department of education's goals as well as legislated.

Summary

There appears to be a continuing need for nutrition education based on the nutritional status and food consumption surveys. Nutrients found to be consistently low were: calories, protein, vitamins A and C, calcium, riboflavin, thiamine, niacin and iron. Many factors contribute to the poor nutrition status: family income level, geographical differences, cultural background, level of education and knowledge of nutrition. One factor that appeared to improve nutritional status of children was participation in the school lunch program.

The National School Lunch Act of 1946 (PL 80-396) and its amendments (PL 89-642 and PL 95-166) were designed to meet the nutritional needs of the nation's school children. The 1946 Act (PL 80-396) appropriated regular funding of food items to public schools. The 1966 amendment (PL 89-642) extended the milk program, authorized as well as provided assistance to low income area schools for purchasing needed equipment and centralizing all programs related to school lunch under the authority of the United States Department of Agriculture and established the school breakfast program.

The major revision in the 1977 amendment (PL 95-166) to the 1946 Act was the addition of Section XIX. This established the Nutrition Education and Training (NET) to provide valid scientific information about nutrition to children. Funding could be used for: hiring of nutrition education specialists to coordinate the state program;

conducting of nutrition education needs assessments; developing state materials to implement nutrition education; conducting inservice training and conducting evaluation studies of programs.

School lunch programs and nutrition education appear to help improve the nutritional status of school children. The competency with which this is done is enhanced by nutrition education curriculum guides and inservice nutrition education training workshops. Inservice training workshops provide teachers as well as others with valid nutrition information as well as techniques to integrate nutrition education into the classroom, the school lunch program and the home.

Evaluation of training indicates that inservice training helped teachers in the classroom as the role of teachers in nutrition education as well as their perceptions and opinions of the school lunch program affect school children's learning about and adopting sound food habits.

CHAPTER III

PROCEDURES

Introduction

The Oklahoma State Department of Education--School Lunch Section, NET Program, contracted with Oklahoma State University, College of Home Economics, Food, Nutrition and Institution Administration Department, to study the effect of Nutrition Education and Training (NET) Team Workshops on integrated nutrition education in selected Oklahoma elementary schools in September of 1980.

The NET Team Workshops were funded as a part of the Nutrition Education and Training of individuals to teach nutrition (Kopel and Ross, 1981; McGovern, 1977; National School Lunch Act, 1977). The Oklahoma State Department of Education--School Lunch Section and an appointed advisory committee developed the concept of the team approach to try to integrate nutrition education into the curriculum and the school lunch program. A pilot group of NET Team Workshops were to be held at seven state universities in Oklahoma (Appendix D). The sample for all NET Team Workshops was obtained by notifying all the state's school district superintendents of the availability of nutrition education training for their local school personnel and solicitation of volunteer participation. The method of notification was published in the "Superintendents' Newsletter," an Oklahoma State Department of Education publication. The Oklahoma State Department of Education also notified all

school personnel of training programs to be held at seven state universities through the "Educator," the department's official publication for local schools. The universities (Appendix D) involved in the NET Team Workshops were to solicit involvement of schools in their geographic areas. Due to the short time frame imposed by the federal funding procedures, there were limited alternatives which could be implemented in the selection process.

Each team included an administrator, a foodservice representative, a parent and four elementary school teachers. The total number of individuals was: 197 elementary teachers, 55 foodservice representatives and 44 parents. Not all the teams contained the recommended number and composition suggested, so this accounted for the differences in the total numbers of each group of participants and the total number of districts.

The workshops were conducted for five days at the seven universities (Appendix D). Activities included: instruction in basic nutrition principles, team building exercises and planning integrated nutrition education for their own schools based on objectives developed from the findings and recommendations of the Oklahoma nutrition education needs assessment. Objectives of the workshops included team members being able to: identify and state functions of foods, use of the Basic Four Food Groups, identify and state functions of vitamins and minerals, identify nutritional needs of children and adolescents, identify and evaluate resource material based on nutrition knowledge, interpret nutrition content levels appropriate for K-6 and select nutrition related resources appropriate to grade level (Appendix C). Pre- and post-tests were administered, as well as attitude pre- and post-surveys.

Oklahoma State University obtained a United States Department of Agriculture funded grant administered through the Oklahoma State Department of Education--School Lunch Section, to evaluate the impact the NET Team Workshops had on integrated nutrition education in selected elementary school curriculum. The selection of the Impact study sample was a 100 percent sampling of the 67 school teams that were selected and participated in the NET Team Workshops (Appendix B). Return rate of respondents was: 34 (66.7%) principals, 112 (56.8%) teachers, 34 (61.8%) foodservice representatives and 16 (36.6%) parents (Kopel and Ross, 1981).

The purpose of this study was to determine the impact of the Nutrition Education Team Training for integrating nutrition education into selected Oklahoma elementary schools; a mailed questionnaire was sent to all teachers who participated in the NET Training Workshops in 1979 and 1980 (the 1980 responses). The 1980 responses were compared to teachers' responses of similar questions asked in the Oklahoma nutrition education needs assessment conducted in 1978 before the NET Training Workshops (the 1978 responses).

Population Sample

The 1978 sample consisted of 472 Oklahoma teachers, grades K-12, obtained according to their estimated average daily attendance. Usable responses were 390 teachers representing a 82.6 percent return.

The selection of the 1980 responses included all 197 teachers, grades 1-6, in Oklahoma public schools who attended the NET Training Workshops (Appendix E). Teams were trained in basic nutrition principles and methods and techniques for integrating nutrition education

into their own schools. Usable responses were 112 teachers, representing a 56.8 percent return (Appendix F).

Methodology and Instrument Development

Assessed were teachers' perceptions and opinions of NET training for integrating nutrition education in selected public elementary schools in Oklahoma. The method of obtaining teachers' responses was a mailed questionnaire (Appendix I).

Instrument Development

The development of the questionnaires involved contacting the NET Program Administrative Officers in 21 states (Appendix C) to: (1) determine if evaluation studies had been done on their NET programs, (2) the type of training done and (3) the evaluation instrument used. Only one state reported doing an evaluation study (North Carolina) and one reported an evaluation study being developed to be conducted later in the year (California). No states reported the use of the team approach for integrating nutrition education into the curriculum and the school lunch program.

The development of the questionnaire was based on the objectives of the NET Training Workshops (Appendix C), the objectives of the Oklahoma nutrition education curriculum guide, Creative Nutrition Education--A Team Approach and selected objectives of the Oklahoma nutrition education needs assessment (Baird and Wohlberg, 1979). The questionnaire contained four categories related to nutrition education. These categories were: perceptions of the value of the NET, integration of nutrition education in the classroom and the school

lunch program, perceptions of the need for academic preparation and inservice education and major nutrition related outcomes. The questionnaires were pretested for content validity and reliability by the home economics faculty members at the seven state universities in Oklahoma who conducted the NET Training Workshops (Appendix D), the administrative officer of the NET Program in Oklahoma and a nutrition education specialist in the Oklahoma State Department of Education--School Lunch Section, NET Program. Questionnaires were pretested with teachers who had not participated in the NET Training Workshops to test the reliability of the questionnaire for the sample.

To assure anonymity, each school team was assigned a number and the corresponding number was placed in the right hand bottom corner of the back page of the questionnaire for the purpose of follow-up. At no time were the names of individuals recorded or reported.

Data Collection

A letter was sent on April 1, 1980, to the principal of each school team by the Oklahoma State Department of Education--School Lunch Section, asking for the team's cooperation with the impact study (Appendix G). The questionnaires were sent April 15, 1980, to the principals, to be distributed to the teachers on the team. The principals were asked to forward questionnaires to teachers no longer at their schools. Two weeks after the questionnaires were mailed, follow-up letters were sent to schools whose teachers had not returned the questionnaires.

Reporting of Data

The responses of the objective questions were keypunched for computerized determination of the frequency and percentages of responses. The 1980 responses to the open-ended questions of teachers' perceptions of the three most important outcomes of the NET training for integrating nutrition education into the curriculum and the school lunch program were recorded, based on clustering of similar responses. From the clustering, four groupings of responses were made. These were: knowledge and methods in nutrition education, integrating nutrition education into the school lunch program, perceptions of the value of the NET for integrating nutrition education into the curriculum and the school lunch program and the most frequently cited important nutrition education related outcomes of the NET training.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

The purpose of this study was to determine the impact of Nutrition Education Workshops for integrating nutrition education into selected elementary schools in Oklahoma. The specific objectives were: to determine teachers' perceptions of the NET for integrating nutrition education into the curriculum, to determine teachers' perceptions of the school lunch program, to determine major nutrition education related outcomes of NET training, to determine teachers' opinions of academic preparation and inservice education for help in integrated nutrition education and to make suggestions and recommendations for integrating nutrition education.

The method of obtaining the teachers' perceptions and opinions of the impact of NET training for integrating nutrition education into selected elementary schools in Oklahoma was a mailed questionnaire (Appendix H). Selected questions were compared to similar selected questions from the Oklahoma Nutrition Education Needs Assessment (Baird and Wohlberg, 1979). This chapter presents a description of the participating sample, reporting of the data to meet the objectives of the study and discussion of the results.

Description of the Sample

The 1978 responses consisted of 472 Oklahoma teachers, grades K-12, obtained by a stratified random sampling involving the categorizing and grouping of all public school districts in Oklahoma according to their estimated average daily attendance. Usable 1978 responses were 390 teachers representing a 82.6 percent return.

The selection of the 1980 responses included all 197 teachers, grades 1-6, in Oklahoma's public schools who attended the NET Training Workshops (Appendix E). Each team was trained in basic nutrition principles and methods and techniques for integrating nutrition education into their own schools. Usable 1980 responses were 112 teachers representing a 56.8 percent return.

Nutrition Education Teams

The questionnaire for the 1980 responses asked teachers their perceptions of the NET for integrating nutrition education into the curriculum and the school lunch program by indicating: (1) if the team was still functioning in the school; (2) if functioning, the extent to which the team was functioning; (3) their perception of the value of the NET for integrating nutrition education into the curriculum and (4) who they perceived as the leader of the team.

Nutrition Education Teams Functioning

The majority of the 112 respondents, 64 (57.1%), indicated that the nutrition education team was still functioning in their schools. Only 31 teachers (27.6%) indicated that the team was no longer functioning in their schools (Table I).

TABLE I
NUTRITION EDUCATION TEAMS FUNCTIONING BY
FREQUENCY AND PERCENTAGES (N=112)

Response	Number of Respondents	Percentage of Respondents
Yes	64	57.1
No	31	27.6
Do Not Know	14	12.5
No Response	<u>3</u>	<u>2.6</u>
Total	112	99.8 ¹

¹Does not equal 100 percent due to rounding.

If the NET was still functioning in the schools, the teachers were asked to identify the extent to which their team was functioning. Of the teams which were still functioning in the schools, 7 (6.3%) were functioning very frequently and 22 (19.6%) were functioning frequently (Table II).

Perceived Value of the Nutrition

Education Team

Teachers were asked their perception of the team approach for integrating nutrition education into the curriculum and the school lunch program. Seventy-one (63.5%) of the 112 respondents perceived the team as being very valuable or valuable for integrating nutrition education into the curriculum and the school lunch program. Only one

individual perceived the NET as having no value for integrating nutrition education (Table III).

TABLE II
EXTENT TO WHICH NUTRITION EDUCATION TEAMS
WERE FUNCTIONING BY FREQUENCY AND
PERCENTAGES (N=112)

Response	Number of Respondents	Percentage of Respondents
Very Frequently	7	6.3
Frequently	22	19.6
Occasionally	22	19.6
Seldom	16	14.3
Never	2	1.8
No Response	<u>43</u>	<u>38.4</u>
Total	112	100.0

Opinions of the Importance of Nutrition

Education Team Members

Responses indicated that 104 (92.9%) respondents perceived teachers as being important or very important members of the team. Food-service personnel also were perceived by 94 (83.9%) of the teachers as being very important or important to the NET (Table IV).

TABLE III

TEACHERS' PERCEPTIONS OF THE VALUE OF THE
NUTRITION EDUCATION TEAM FOR INTE-
GRATING NUTRITION EDUCATION BY
FREQUENCY AND PERCENTAGES
(N=112)

Response	Number of Respondents	Percentage of Respondents
Very Valuable	30	26.8
Valuable	41	36.7
Moderately Valuable	19	17.0
Somewhat Valuable	18	16.0
Not at all Valuable	1	0.9
No Response	<u>3</u>	<u>2.7</u>
Total	112	100.1 ¹

¹Does not equal 100 percent due to rounding.

Perceived Leader of the Nutrition

Education Team

The leader of the NET was perceived by 62 (55.9%) of the respondents to be the teacher, followed by the principal being seen as the leader of the team by 31 (27.9%). Foodservice personnel and parents were not seen as leaders of the teams, although many times they were the individuals motivating the other team members (Table V).

School lunch programs have increased the nutritional status of children in nutritional surveys and have been recommended as an excellent resource tool for nutrition education (Center for Disease

TABLE IV
TEACHERS' OPINIONS OF THE IMPORTANCE OF NUTRITION
EDUCATION TEAM MEMBERS BY FREQUENCY AND
PERCENTAGES (N=112)

Team Member	Degree of Importance								Totals	
	Very Important or Important		Of Little or No Importance		No Opinion		No Response			
	No.	%							No.	% ¹
Teacher	104	92.9	1	0.9	1	0.9	6	5.4	112	100.1
Foodservice Personnel	94	83.9	6	5.4	4	3.6	8	7.1	112	100.0
Principal	93	83.0	11	9.8	4	3.6	4	3.6	112	100.0
Parent	83	74.1	13	11.6	5	4.5	11	9.8	112	100.0
Other	4	3.6	1	0.9	2	1.8	105	93.8	112	100.1

¹Does not equal 100 percent due to rounding.

Control, 1972; Moomaw, 1978). This study asked teachers their perceptions of the school lunch program.

TABLE V
TEACHERS' PERCEPTIONS OF THE NUTRITION EDUCATION TEAM LEADER BY FREQUENCY AND PERCENTAGES (N=112)

Team Members	Number of Respondents	Percentage of Respondents
Principal	31	27.9
Teacher	62	55.9
Foodservice Personnel	8	7.2
Parent	1	0.9
Other (More than One)	6	4.5
No Response	<u>4</u>	<u>3.6</u>
Total	112	100.0

Perceptions of the School Lunch Program
and Nutrition Education

The question was asked of the teachers as to what their opinions of the school lunch program were. Responses indicated that all six functions listed about the school lunch program were of importance. It was found the perception of school lunch as a learning laboratory for nutrition education in the classroom had increased six percent in

1980, as one of the objectives of the NET Training Workshops was the use of the school lunch program as a resource tool for nutrition education. The perception of the school lunch as a means of providing meals for children of working mothers increased 3.3 percent in 1980, as did the school lunch as a means of providing free meals for economically deprived children (1.4% increase). Surprising results was the perception of the school lunch being a means of meeting one-third of students' daily dietary needs decreased 10.8 percent in 1980 (Table VI).

Cooperation and Coordination Between the Classroom and the School Lunch Program

Since the NET Training Workshops, 89 (79.4%) of the respondents indicated that there has been "some" to a "great deal" of cooperation and coordination between the classroom and the school lunch program (Table VII).

Major Nutrition Education Related Outcomes

Questions pertaining to major nutrition education related outcomes of NET training were: hours nutrition education was taught per year in 1978 and 1980, perceptions of competencies gained for integrating nutrition education, use of the curriculum guide, perceptions of the number of students eating three balanced meals, perceived important outcomes of the NET training and the opinions of the need for academic and inservice preparation.

Hour Nutrition Education was Taught

Teachers increased the number of hours they taught nutrition

TABLE VI
SUMMARY OF TEACHERS' OPINIONS ABOUT THE SCHOOL
PROGRAM IN 1978 AND 1980 BY FREQUENCY
AND RESPONSE

Function	Degree of Importance												Percentage of Change
	Very Important				Important				Total				
	1978		1980		1978		1980		1978		1980		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
A learning laboratory for nutrition educa- tion (N=384, 101)	87	23.1	44	43.6	219	58.1	44	43.6	306	81.2	88	87.2	+6.0
A means of providing meals for children of working mothers (N=380, 100)	159	41.8	29	29.0	182	47.9	54	54.0	341	89.7	93	93.0	+3.3
To provide meals for economically deprived children (N=383, 102)	230	60.1	48	47.7	136	35.5	49	48.0	366	95.6	97	96.0	+1.4
To help students form food food habits (N=382, 101)	219	57.3	58	57.4	144	37.7	34	33.7	363	95.0	92	91.1	-3.9
A convenience to par- ents (N=380, 101)	95	25.0	27	26.7	209	55.0	49	48.5	304	80.0	76	75.2	-4.8
A means of meeting 1/3 of students' daily dietary needs (N=384, 101)	323	84.1	68	67.3	57	14.8	30	29.7	380	98.8	87	86.1	-12.7

education by 13.1 percent from 1978 to 1980. Teachers in the 1980 responses indicated that 27.7 percent of them were teaching more than 10 hours per year compared to 14.6 percent of the teachers in 1978. These results indicate that nutrition education is being integrated into other subjects increasing the number of hours it is taught by these teachers with training (Table VIII).

TABLE VII
TEACHERS' OPINIONS OF THE COORDINATION AND
COOPERATION BETWEEN THE CLASSROOM AND
THE SCHOOL LUNCH PROGRAM BY
FREQUENCY AND PER-
CENTAGES (N=112)

Response	Number of Respondents	Percentage of Respondents
A Great Deal	18	16.1
Quite a Bit	37	33.0
Some	34	30.4
Almost None	9	8.0
None	3	2.7
Do Not Know	<u>11</u>	<u>9.8</u>
Total	112	100.0

Nutrition Education Competencies Gained

From Nutrition Education Team Training

The 1980 responses indicated that competencies to integrate

nutrition education were gained from the NET Training Workshops. Competencies are listed in descending order according to the most to least frequently cited by teachers as being some to a great deal gained from NET training: integrating nutrition education into the classroom (106), knowledge about nutrition (106), selection nutrition education resources appropriate to grade level and discipline (105), interest to know more about nutrition (104), integrating nutrition content appropriate for K-6 (104), working as a team member in nutrition education (102), use of nutrition education resources from the State Department of Education (99) and integrating nutrition education into the school lunch program (96) (Table IX).

TABLE VIII
HOURS NUTRITION EDUCATION WAS TAUGHT PER YEAR
IN 1978 AND 1980 BY FREQUENCY
AND PERCENTAGE

Possible Response	Number of Respondents		Percentage of Respondents		Percentage Change
	1978 ¹ (N=130)	1980 (N=101)	1978 ¹	1980	
More Than 10 Hours	19	28	14.6	27.7	+13.1
6-10 Hours	48	27	36.9	26.7	-10.2
3-5 Hours	54	22	41.5	21.8	-19.7
0-2 Hours	9	24	6.9	23.8	+16.9
Total	130	101	99.9 ²	100.0	

¹Adapted from Baird and Wohlberg, 1979.

²Does not equal 100 percent due to rounding.

TABLE IX
TEACHERS' PERCEPTIONS OF COMPETENCIES GAINED FROM
NUTRITION EDUCATION TEAM TRAINING TO INTEGRATE
NUTRITION EDUCATION INTO THE CURRICULUM
BY FREQUENCY AND PERCENTAGES (N=112)

Competency	Degree of Importance										Total %	
	A Great Deal		Quite a Bit		Some		Almost None		None			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	of 112
Integrating nutrition education into the classroom	48	42.9	41	36.6	17	15.2	0	0.0	2	1.9	108	96.6
Integrating nutrition education into the school lunch program	17	15.2	40	35.7	39	34.8	7	6.3	4	3.6	107	95.6
Knowledge about nutrition	51	45.5	40	35.7	15	13.4	1	0.9	0	0.0	107	95.6
Integrating nutrition content appropriate for K-6	42	37.5	47	42.0	15	13.4	1	0.9	1	1.9	106	94.7
Working as a team member in nutrition education	32	28.6	44	39.3	26	23.2	2	1.8	3	2.7	107	95.6
Selecting nutrition resources appropriate to grade level and discipline	33	29.5	51	45.5	21	18.8	1	0.9	0	0.0	106	94.7
Interest to know more about nutrition	47	42.0	41	36.6	16	14.3	2	1.8	1	0.9	107	95.6
Use of nutrition education resources from state	40	35.7	45	40.2	14	12.5	4	3.6	1	0.9	104	92.9

Opinion of the Need for a State Nutrition Education Curriculum Guide

The 1978 responses indicated that 285 (73.9%) of the teachers felt that a state nutrition education curriculum guide, if developed, would or could be useful (Table X).

TABLE X
TEACHERS' OPINION OF THE NEED FOR A STATE
NUTRITION EDUCATION CURRICULUM GUIDE
IN 1978 (N=386)

Possible Response	Number of Respondents	Percentage of Respondents
Would be Useful	104	27.1
Could be Useful	181	46.8
Would not be Useful	<u>101</u>	<u>26.1</u>
Total	386	100.0

¹Adapted from Baird and Wohlberg, 1979.

Use of the State Nutrition Education Curriculum Guide

Before the NET Training Workshops, a nutrition education curriculum guide was developed by home economics faculty at seven state universities in Oklahoma, nutrition education specialists in the NET

program--School Lunch Section of the Oklahoma State Department of Education and curriculum specialists of the Oklahoma State Department of Education. Teachers were asked to respond by stating their use of the curriculum guide as one of the objectives of the training workshops. The 1980 responses indicated that 92 (82.6%) of the teachers used the guide, ranging from Some to A Great Deal (Table XI).

TABLE XI
TEACHERS' USE OF THE NET CURRICULUM GUIDE FOR
OKLAHOMA--CREATIVE NUTRITION--A TEAM
APPROACH BY FREQUENCY AND
PERCENTAGE (N=112)

Possible Response	Number of Respondents	Percentage of Respondents
A Great Deal	17	15.2
Quite a Bit	32	29.0
Some	43	38.4
Almost None	8	7.1
None	5	4.5
No Response	<u>7</u>	<u>6.3</u>
Total	112	100.5 ¹

¹Does not equal 100 percent due to rounding.

Perception of Students Eating Three

Balanced Meals a Day

The 1978 responses indicated that 36.9 percent of the teachers felt that one-half or more of their students were eating three balanced meals a day, whereas the 1980 responses indicated one-half or more students were eating three balanced meals a day, according to only 29.3 percent of the teachers.

The 1978 responses found 53.6 percent of the teachers perceiving that one-half or less of their students were eating three balanced meals a day, while 61.3 percent of the teachers in the 1980 responses indicated that one-half or less of their students were eating three balanced meals. This indicated, possibly, that teachers were more aware of nutrition and balanced meals after the NET Training Workshops (Table XII).

Perceived Important Outcomes of Nutri- tion Education Team Training

The 1980 responses to the open-ended question of the three most important outcomes of NET training were tabulated for frequency of response, and the following were the most frequently reported responses: knowledge and methods in nutrition education (164), integrating nutrition education into the school lunch program (56), perceptions of the value of the nutrition education team for integrating nutrition education into the curriculum and the school lunch program (59) and most frequently cited important nutrition education related outcomes of NET training (48). A complete list of teachers responses may be found in Appendix I.

TABLE XII
TEACHERS' PERCEPTIONS OF THE NUMBER OF THEIR
STUDENTS EATING THREE BALANCED MEALS PER
DAY IN 1978 AND 1980 BY FREQUENCY
AND PERCENTAGE

	Number of Respondents		Percentage of Respondents		Percentage of Change
	1978 ¹ (N=390) N	1980 (N=106) N	1978 %	1980 %	
Over 3/4	47	12	12.3	11.3	-1.0
1/2 to 3/4	94	19	24.6	18.0	-5.4
1/4 to 1/2	114	35	29.8	33.0	+3.2
Less than 1/4	91	30	23.8	28.3	+5.0
No Estimate	<u>36</u>	<u>10</u>	<u>9.4</u>	<u>9.4</u>	<u>0.0</u>
Total	382	106	99.2 ²	100.0	+1.8

¹Adapted from Baird and Wohlberg, 1979.

²Does not equal 100 percent due to rounding.

Opinions of the Need for Academic Preparation and Inservice Education in Nutrition

A majority of the teachers in the 1978 sample (57.6%) and the 1980 sample (50.9%) agreed or strongly agreed that at least one course in nutrition be required in an undergraduate curricula for prospective teachers and principals. This represented an increase of 6.9 percent in the number of teachers who strongly agreed (Table XIII).

Teachers were asked about inservice training for help in integrating nutrition education into the curriculum. Two options were given:

graduate credit and non-credit courses offered during the school year or during the summer. This increase could partially be due to the fact that in the 1980 responses, teachers were to check yes or no to each option so that N was equal to 112 for each option. The 1980 responses indicated that teachers would prefer a graduate credit course taught during the summer, while the 1978 responses indicated that teachers preferred a non-credit or a short course taught in the area during the school year (Table XIV).

TABLE XIII

TEACHERS' OPINIONS OF A REQUIRED NUTRITION
COURSE IN UNDERGRADUATE CURRICULA FOR
PROSPECTIVE TEACHERS AND PRINCIPALS
IN 1978 AND 1980 BY FREQUENCY
AND PERCENTAGE

Possible Response	Number of Respondents		Percentage of Respondents		Percentage of Change
	1978 ¹ (N=390)	1980 (N=112)	1978 ¹	1980	
Strongly Agree	48	21	12.4	18.8	+6.4
Agree	175	36	45.2	32.1	-13.1
No Opinion	72	38	18.6	34.0	+25.4
Disagree	74	3	19.1	2.7	-16.4
Strongly Disagree	18	1	4.7	0.9	-3.8
No Response	3	8	1.0	7.1	+6.1
Total	390	112	101.0 ²	100.0	+4.6

¹Adapted from Baird and Wohlberg, 1979.

²Does not equal 100 percent due to rounding.

TABLE XIV

TEACHERS' OPINIONS OF INSERVICE TRAINING FOR
HELP IN INTEGRATING NUTRITION EDUCATION
INTO THE CURRICULUM BY FREQUENCY AND
PERCENTAGE IN 1978 AND 1980

Type of Inservice	Number of Respondents		Percentage of Respondents		Percentage of Change
	1978 ¹ (N=320)	1980 ² (N=112)	1978 ¹	1980 ²	
Graduate credit course taught in your area during the school year	130	38	40.6	33.9	-6.7
Graduate credit course taught during the summer	44	78	13.8	69.6	+55.8
Non-credit course or short course taught in your area during the school year	118	44	37.0	39.3	-2.3
Non-credit course or short course taught during the summer	<u>28</u>	<u>11</u>	<u>9.0</u>	<u>9.8</u>	<u>-0.8</u>
Total	320	171 ²	100.4 ³	152.6 ²	+46.0

¹Adapted from Baird and Wohlberg, 1979.

²Each row equals N=112; this is why totals do not equal 100 percent.

³Does not equal 100 percent due to rounding.

Summary

The 1978 responses to a mailed questionnaire were 390 (82.6%) teachers, grades K-12. The 1980 responses to a mailed questionnaire

were 112 (56.8%) teachers, grades 1-6. Sixty-four (57.1%) teachers reported the nutrition education team was still functioning in their schools, 49 (25.9%) of which were reported as functioning Very Frequently or Frequently. The nutrition education team and all team members were perceived as Important or Very Important for integrating nutrition education into the curriculum, with the teacher cited most frequently as the team leader.

The school lunch was perceived as a learning laboratory for nutrition education by more than 80 percent of the responses. Since NET training, responses indicated there has been cooperation and coordination between the classroom and the school lunch program.

Major nutrition education related outcomes of NET training were: hours nutrition education was taught per year increased, competencies were gained to integrate nutrition education into the curriculum and the school lunch program, development and instruction of the uses of the Oklahoma nutrition education curriculum guide and a greater awareness of nutrition. A majority of the teachers in the 1978 and 1980 responses agreed there was a need for academic preparation and inservice education for integrating nutrition education into the curriculum and the school lunch program.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

The purpose of this study was to determine the impact of NET training for integrating nutrition education into selected Oklahoma elementary schools. This study was funded by the United States Department of Agriculture under the authorization of the Child Nutrition Amendment of 1977 (PL 95-166) and administered by the Oklahoma State Department of Education--School Lunch Section.

The 1978 responses to a mailed questionnaire consisted of 390 public school teachers, grades K-12, representing a 82.6 percent return. The 1980 responses to a mailed questionnaire consisted of 112 public school teachers, grades 1-6, representing a 56.8 percent return.

A majority of NET teams were still functioning, as indicated by 64 (57.1%) of the teachers; however, only 29 (25.9%) reported that the NET team functioned Frequently or Very Frequently.

When teachers were asked their perceptions of the NET team for integrating nutrition education into the curriculum and school lunch program, 90 (89.5%) of the teachers perceived the team as being anywhere from moderately valuable to very valuable. All seven team members were perceived as important to the functioning of the team by more than 70 percent of the teachers asked in the 1980 questionnaire, while the leader of the team was perceived to be the teacher by 55.9 percent of the teachers.

A larger percentage of teachers perceived the school lunch program as a resource for nutrition education in the classroom in the 1980 sample than the 1978 sample, and that the coordination and cooperation between the lunch program and nutrition had increased, as indicated by 88 (79.4%) of the teachers responding in the 1980 questionnaire.

Teachers' opinions in the 1978 and the 1980 samples were similar towards the need for academic and inservice education in nutrition. Over 50 percent of the teachers from both the 1978 and 1980 samples agreed or strongly agreed that a nutrition course should be required for all prospective teachers and principals.

Teachers' opinions of inservice training increased in the 1980 sample for help 87.1 percent, with teachers' opinions sharply increasing (68.4%) towards graduate credit training courses taught in the summer.

Teachers increased the number of hours that they taught nutrition education in the past year in the 1980 sample by 13.1 percent for teaching more than 10 hours a year of nutrition education.

More than 80 percent of the teachers in the 1980 sample felt competencies were gained for integrating nutrition education into the curriculum and the school lunch program. The curriculum guide developed by the home economics faculty members at seven state universities in Oklahoma, nutrition education specialists and curriculum specialists was used from Some to A Great Deal by 92 (82.6%) of the teachers.

Teachers in both the 1978 and 1980 questionnaires were asked to indicate the number of their students eating three balanced meals a day. Over 50 percent of the 1978 sample indicated that one-half or less of their students were eating three balanced meals per day. An

increased percentage of teachers (61.3%) in the 1980 sample felt one-half or less of their students were eating three balanced meals a day.

Teachers' opinions of the most important outcomes of NET training were: made them more aware of the importance of good nutrition and the need for nutrition education in the schools, provided motivation and new ideas for teaching nutrition education, the ability to share with other teachers when they returned to school and the materials made available from the Oklahoma State Department of Education.

More than fifty percent of teachers perceived that a nutrition course should be in an undergraduate curricula for prospective teachers and administrators. Teachers perceived that inservice training was a help in integrating nutrition education into the curriculum, with a 55.8 percent increase seen in teachers desiring a graduate credit course taught in the summer.

Conclusions

1. Nutrition education teams were valuable for integrating nutrition education into the curriculum and the school lunch program.
2. Competencies were gained from the NET Training Workshops, providing teachers valid nutrition information and methods to integrate this information into the curriculum.
3. Teachers' understanding and awareness of nutrition and balanced meals increased after NET training.
4. The school lunch program is an important resource tool for nutrition education.

Recommendations

1. The continued use of Nutrition Education Teams for effectively integrating nutrition education into elementary curriculum and the school lunch program.
2. Require at least one nutrition course in the undergraduate curricula for all prospective teachers and administrators.
3. Offer NET Training Workshops at least once a year with the option of graduate credit for those who want to use it.

Recommendations for Further Study

1. A follow-up study two years from now to see what the impact of NET Training Workshops is five years after the initial training.
2. An additional study to obtain information on nutritional status of school age children.
3. A study to determine the effectiveness of NET.
4. A study using pre- and post-tests and questionnaires on students' knowledge gained, and if their nutritional status improved after integrated nutrition education in the classroom.

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APPENDIXES

APPENDIX A

REQUIREMENTS (OBJECTIVES) OF NEEDS ASSESSMENT

REQUIREMENTS OF NEEDS ASSESSMENT

For the purpose of the Nutrition Education-A Needs Assessment for Oklahoma, the authors combined the categories of the requirements to simplify the repetition of the original law (4).

227.36 Requirement of Needs Assessment

- (a) The needs assessment process identifies the discrepancies between "what should be" and "what is" and shall be applied to each category listed below to enable state educational agencies to determine their nutrition education and training needs. The needs assessment shall identify the following as a minimum:
- (1) children, teachers, and foodservice personnel in need of nutrition education and training;
 - (2) existing state or federally funded nutrition education and training programs including their: (i) goals and objectives; (ii) source and level of funding; (iii) any available documentation of their relative success or failure; and (iv) factors contributing to their success or failure;
 - (3) offices or agencies at the state and local level designated to be responsible for nutrition education and training of teachers and school foodservice personnel;
 - (4) any relevant state nutrition education mandates;
 - (5) funding levels at the state and local level for preservice and inservice nutrition education and training of foodservice personnel and teachers;
 - (6) state and local individuals, and groups conducting nutrition education and training;
 - (7) materials which are currently available for nutrition education and training programs, and determine for each: (i) subject area and content covered; (ii) grade level; (iii) how utilized; (iv) acceptability by user; and (v) currency of materials;
 - (8) any major child nutrition related health problems in each state;

- (9) existing sources of primary and secondary data, including any data that has been collected, for documenting the state's nutrition education and training needs;
 - (10) available documentation of the competencies of teachers in the area of nutrition education;
 - (11) available documentation of the competencies of foodservice personnel;
 - (12) problems encountered by schools and institutions in procuring nutritious food economically and in preparing nutritious appetizing meals and areas where training can assist in alleviating these problems;
 - (13) problems teachers encounter in conducting effective nutrition education activities and areas where inservice training or materials can assist in alleviating these problems ;
 - (14) problems in dietary habits of children and areas where nutrition education may assist in postive changes;
 - (15) problems encountered in coordinating the nutrition education by teachers with the meal preparation and activities of the foodservice facility and areas where training might alleviate these problems.
- (b) The needs assessment should provide not only data on current activities but also a description of the problems and needs in each category and whether training or materials would help alleviate these problems (Baird and Wohlberg, 1979).

APPENDIX B

NUTRITION EDUCATION--A NEEDS ASSESSMENT FOR
OKLAHOMA, TEACHERS' QUESTIONNAIRE

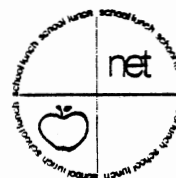
TEACHER'S FORM

OKLAHOMA NUTRITION EDUCATION SURVEY 1978-79*

A COOPERATIVE PROJECT OF
OKLAHOMA STATE DEPARTMENT OF EDUCATION - SCHOOL LUNCH SECTION

AND

OKLAHOMA STATE UNIVERSITY - DIVISION OF HOME ECONOMICS
DEPARTMENT OF FOOD, NUTRITION, AND INSTITUTION ADMINISTRATION



County	District Name	School Name
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INSTRUCTIONS - This survey consists of a number of questions and statements which have no right or wrong answers. Your personal opinion is needed. Carefully read each question or statement and decide what you think about it. CHECK THE CORRESPONDING LINE TO THE LEFT OF YOUR RESPONSE. ERASE COMPLETELY ANYTHING YOU WISH TO CHANGE. Your responses will remain anonymous. The name of your school and district area are for record keeping purposes only. You or your school will NOT be identified in any manner in the reporting of data.

For this survey, NUTRITION EDUCATION is defined as "the knowledge of food, how the body uses it, and the application of this knowledge to the formation of good eating habits."

SECTION A.

<p>1. Please mark the grade level you teach <u>this</u> year: (Check all that apply)</p> <p><input type="checkbox"/> K-3 (Elementary)</p> <p><input type="checkbox"/> 4-6 (Elementary)</p> <p><input type="checkbox"/> Jr. High or Middle School</p> <p><input type="checkbox"/> High School</p> <p>2. What subjects do you teach? (Check all that apply)</p> <p><input type="checkbox"/> General elementary curriculum</p> <p><input type="checkbox"/> Reading</p> <p><input type="checkbox"/> General health education</p> <p><input type="checkbox"/> Biology</p> <p><input type="checkbox"/> Chemistry</p> <p><input type="checkbox"/> Home Economics</p> <p><input type="checkbox"/> Physical Education</p> <p><input type="checkbox"/> Social Studies</p> <p><input type="checkbox"/> English language arts</p> <p><input type="checkbox"/> Art</p> <p><input type="checkbox"/> Elementary science</p> <p><input type="checkbox"/> Physiology</p> <p><input type="checkbox"/> Other Science</p> <p><input type="checkbox"/> Other _____</p> <p>3. Do you eat the school lunch as provided for the students? (Check one)</p> <p><input type="checkbox"/> Every day</p> <p><input type="checkbox"/> 3-4 times per week</p> <p><input type="checkbox"/> 1-2 times per week</p> <p><input type="checkbox"/> Less often than once per week</p>	<p>4. Listed here are several reasons for providing a school lunch program. What, in your opinion, is the importance of each? (Check one for each reason)</p> <table border="0"> <thead> <tr> <th>Very Important</th> <th>Moderately Important</th> <th>Not Important</th> <th></th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>A. A convenience for parents</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>B. A means of meeting at least 1/3 of students' daily dietary needs</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>C. A learning laboratory for nutrition education</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>D. A means of providing a meal for children of working mothers</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>E. To provide free meals for economically deprived students</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>F. To help students form good food habits</td> </tr> </tbody> </table> <p>5. What was your average school lunch participation in November, 1978? (Check one) (Check with principal or cafeteria manager)</p> <table border="0"> <tbody> <tr> <td><input type="checkbox"/> 0-20%</td> <td><input type="checkbox"/> 61-80%</td> </tr> <tr> <td><input type="checkbox"/> 21-40%</td> <td><input type="checkbox"/> 81-100%</td> </tr> <tr> <td><input type="checkbox"/> 41-60%</td> <td></td> </tr> </tbody> </table> <p>6. Is it part of your job responsibilities to supervise students at lunchtime?</p> <p><input type="checkbox"/> Everyday</p> <p><input type="checkbox"/> Less than everyday, but at least once a week</p> <p><input type="checkbox"/> Less than once a week</p> <p><input type="checkbox"/> Never</p>	Very Important	Moderately Important	Not Important		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A. A convenience for parents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B. A means of meeting at least 1/3 of students' daily dietary needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. A learning laboratory for nutrition education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D. A means of providing a meal for children of working mothers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. To provide free meals for economically deprived students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F. To help students form good food habits	<input type="checkbox"/> 0-20%	<input type="checkbox"/> 61-80%	<input type="checkbox"/> 21-40%	<input type="checkbox"/> 81-100%	<input type="checkbox"/> 41-60%	
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	C. A learning laboratory for nutrition education																																
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<input type="checkbox"/> 41-60%																																			

*Funded by the Oklahoma State Department of Education, School Lunch Section, and the United States Department of Agriculture. Portions of this survey were adapted from the Wisconsin Nutrition Education Survey, 1974, funded by USDA Food and Nutrition Service.

7. What proportion of students in your classes do you estimate actually have three well-balanced meals a day? (Check one)
- ☐ Less than $\frac{1}{4}$
 - ☐ $\frac{1}{4}$ to $\frac{1}{2}$
 - ☐ $\frac{1}{2}$ to $\frac{3}{4}$
 - ☐ Over $\frac{3}{4}$
 - ☐ No estimate
8. When students do not have three well-balanced meals, which of the three meals do you think is most apt to be neglected? (Check one)
- ☐ Breakfast
 - ☐ Noon meals
 - ☐ Evening meals
9. In your opinion, do the vending machines in your school: (Check one)
- ☐ Make no difference in students' nutritional habits
 - ☐ Discourage students from eating nutritious foods
 - ☐ Contribute to students' nutritional well-being
 - ☐ School has no vending machines available to students
10. At what grade level do you think nutrition education should be offered? (Check one)
- ☐ At every grade level
 - ☐ In K-3 (Elementary)
 - ☐ In 4-6 (Elementary)
 - ☐ Junior high or middle school
 - ☐ Senior high school
 - ☐ This is not the school's role
 - ☐ No opinion
 - ☐ Other _____
11. If the State Department of Education would provide a guide for integrating nutrition education into the curriculum, would it be useful to you? (Check one)
- ☐ Would be useful
 - ☐ Could be useful
 - ☐ Would not be useful
12. In your opinion, should undergraduate curricula for all prospective teachers include nutrition education? (Check one)
- ☐ Strongly Agree
 - ☐ Agree
 - ☐ No opinion
 - ☐ Disagree
 - ☐ Strongly disagree
13. Describe your background in nutrition. (Check all that apply)
- ☐ Took a regular college course in food and/or nutrition
 - ☐ Studied nutrition in connection with other college subjects
 - ☐ Attended a nutrition workshop and/or inservice training course
 - ☐ Studied nutrition in junior high and/or high school
 - ☐ Learned about nutrition on my own
 - ☐ Never studied nutrition
14. Would you be willing to attend the following nutrition education courses? (Check all that apply)
- ☐ Graduate credit course taught in summer school
 - ☐ Graduate credit course taught in your area during the year
 - ☐ Non-credit workshop or short course taught in summer school
 - ☐ Non-credit workshop or short course taught in your area during the year
 - ☐ I would not be willing to attend a nutrition education course
15. Do you agree that parents in your community would be interested in learning more about nutrition? (Check one)
- ☐ Strongly Agree
 - ☐ Agree
 - ☐ No opinion
 - ☐ Disagree
 - ☐ Strongly disagree
 - ☐ Do not know
16. Which of the following would be the best topics to cover in parent nutrition education programs? (Check all that apply)
- ☐ The advantages of eating a good breakfast
 - ☐ The advantages of eating a good lunch
 - ☐ Food needs at different ages
 - ☐ Selection of snack foods
 - ☐ How food affects physical development
 - ☐ Food choices of school age children
 - ☐ School food service contributions to nutrition
 - ☐ Organic foods
 - ☐ Special diets and weight control
 - ☐ No opinion
17. Indicate the method(s) you think would be effective for presenting a parent nutrition education program. (Check all that apply)
- ☐ Through parent-teacher organizations
 - ☐ On educational television
 - ☐ In special classes for parents of students
 - ☐ By articles in newspapers or magazines
 - ☐ In special workshops presented by universities or State Department of Education
 - ☐ Materials and information taken home by students to parents
 - ☐ Parents would not be interested

SECTION 8.

18. Did you teach a nutrition unit in any of your classes last school year? (Check one)
☐ No (If no, proceed to Section C)
☐ Yes (If yes, go on to the next question)
19. Indicate the grade level to which you taught nutrition last year. (Check all that apply)
☐ K-3 (Elementary)
☐ 4-6 (Elementary)
☐ 7-9 or 6-8 (Jr. High or Middle School)
☐ 10-12 or 9-12 (High School)
20. Approximately how many hours of nutrition education did you teach last year? (Check one)
☐ 0-2 hours
☐ 3-5 hours
☐ 6-10 hours
☐ more than 10 hours
21. Which guides did you use in teaching nutrition? (Check all that apply)
☐ Local school district curriculum
☐ Oklahoma State curriculum guides
☐ Other state guides (specify) _____
☐ Curriculum developed by myself
☐ Curriculum developed by myself and others
☐ Other (specify) _____
☐ None
22. In what type course did you teach nutrition? (Check all that apply)
☐ As a separate course
☐ Integrated into another course
☐ Both
23. If you taught nutrition as an integrated subject matter, in which course was it offered: (Check all that apply)
☐ Reading
☐ English language arts
☐ Mathematics
☐ Art
☐ General health education
☐ Elementary science
☐ Biology
☐ Physiology
☐ Chemistry
☐ Other science
☐ Home Economics
☐ Physical education
☐ Social studies
☐ Elementary enrichment unit
☐ Other (specify) _____
24. What resource person(s) was/were used in your nutrition education unit? (Check all that apply)
☐ Home Economics teacher
☐ Nurse
☐ School lunch supervisor
☐ Dairy Council Consultant
☐ Public Health Nutritionist
☐ County Extension Home Economist
☐ University or college nutrition teacher
☐ Other teachers within the school
☐ Other (specify) _____
☐ None
25. Which of the following biological or social topics did you emphasize in your nutrition unit? (Check all that apply)
☐ Source of food
☐ Cultural food patterns
☐ Individual food habits
☐ Importance of food in history
☐ Making food choices
☐ Problems of hunger in world
☐ Eating a well-balanced diet
☐ Importance of a good breakfast
☐ Weight reduction diets
☐ Results of overeating (obesity)
☐ Positive results of good nutrition (good strong bones, good complexion, general well-being)
☐ Which foods are sources of nutrients (proteins, minerals, etc.)
☐ Function of nutrients
☐ Results of deficiencies of nutrients (such as rickets)
☐ How food is digested
☐ How food nourishes cells
☐ Other (specify) _____
26. Listed below are various methods of teaching nutrition education. Reflecting back on your teaching, check one blank for each method.
- | Unsuccessful | No Opinion
did not use | Successful | |
|--------------------------|---------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | A. Tasting new and unfamiliar foods |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | B. Learning to identify new foods |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | C. Using food models |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | D. Encouraging children to taste all foods served at school lunch |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | E. Planning menus for school lunch |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | F. Having children check if they are eating enough of a particular food (e.g., milk) |

<u>Unsuccessful</u>	<u>No opinion did not use</u>	<u>Successful</u>	
—	—	—	G. Having children develop plan for improving food practices
—	—	—	H. Keeping and/or revising records of food eaten in one day
—	—	—	I. Conducting small animal feeding demonstrations
—	—	—	J. Classification of foods according to four food groups
—	—	—	K. Planting vegetable seeds and watching them grow
—	—	—	L. Discussing how much of various foods are needed for growth & health
—	—	—	M. Evaluating progress in improving children's food practices
—	—	—	N. Making surveys of food wasted by grade groups at school lunch
—	—	—	O. Surveying food habits of members of class and their families
—	—	—	P. Comparing costs of different kinds of foods
—	—	—	Q. Going on field trips to show how foods are produced and/or marketed in community
—	—	—	R. Studying food habits of people from other parts of U.S. and world
—	—	—	S. Using resource people to come and tell about food
—	—	—	T. Lectures
—	—	—	U. Discussions
—	—	—	V. Using films or film strips
—	—	—	W. Discussing weight and height measurement of children in class
—	—	—	X. Other _____

27. Please specify any problems you have had teaching nutrition. (Add another page if necessary).

28. Please list names of the resources that you used in your nutrition teaching that were helpful. (Add another page if needed)

Books

Pamphlets

Films

Filmstrips

Curriculum Guides

Other

SECTION C.

29. Please make any comments on nutrition education and/or the school lunch and/or breakfast program. (Add another page if necessary).

APPENDIX C

OBJECTIVES OF THE NET TEAM
TRAINING WORKSHOPS

CONTENT AND OBJECTIVES

The content and objectives for the pilot workshops were specified by a group of key nutrition education personnel at a conference, December 5, 6, 7, and 8, 1978. They have been rephrased for consistency in wording, but the content has not been changed.

Workshop instruction will be keyed to the objectives.

CONTENT: BASIC NUTRITION KNOWLEDGE

Objectives:

Team members will be able to:

1. Identify and state three functions of foods.
2. Use the Basic Four to plan daily food intake.
3. Identify the basic nutrients found in each of the Basic Four Food groups.
4. Classify the Type A lunch into the Basic Four.
5. Identify and state basic functions of the six nutrient groups.
6. Identify and state basic functions of these vitamins and minerals: A, D, C, Thiamine, Niacin, Riboflavin.
7. Trace the digestion of the six nutrients.
8. Identify nutritional needs of children and adolescents, especially planning around the Basic Four.
9. Identify and evaluate resource material based on nutrition knowledge.
10. Evaluate a consumer topic in nutrition: food fads, nutrition labels, food buying based on the Basic Four.

CONTENT: INTEGRATING NUTRITION EDUCATION INTO CURRICULUM AND PLANNING ACTIVITIES FOR BACK HOME

Objectives:

Participants will be able to:

1. Interpret nutrition content levels appropriately for K-6 through with goals, objectives and concepts.
2. Select nutrition-related resources appropriate to grade level and discipline.

APPENDIX D

OKLAHOMA STATE UNIVERSITIES CONDUCTING
NET TEAM TRAINING WORKSHOPS

Central State University, Home Economics Department, Edmond, OK

Langston University, Home Economics Department, Langston, OK

Northeastern Oklahoma State University, Home Economics Department,
Tahlequah, OK

Northwestern Oklahoma State University, Home Economics Department,
Alva, OK

Oklahoma State University, Food, Nutrition and Institution Administra-
tion Department, Stillwater, OK

Southeastern Oklahoma State University, Home Economics Department,
Durant, OK

Southwestern Oklahoma State University, Home Economics Department,
Weatherford, OK

APPENDIX E

ELEMENTARY SCHOOLS PARTICIPATING IN NET
TEAM TRAINING WORKSHOPS

Central State University

Choctaw Elementary School
Choctaw, OK 73020

Banner Elementary School
Guthrie, OK 73044

Jackson Elementary School
Norman, OK 73069

Newcastle Elementary School
Newcastle, OK 73065

Orvis Risner Elementary School
Edmond, OK 73034

Council Grove Elementary School
Oklahoma City, OK

Plaza Towers Elementary School
Moore, OK 73160

Sunset Elementary School
Edmond, OK 73034

Deer Creek Elementary School
Edmond, OK 73034

Will Rogers Elementary School
Shawnee, OK 74801

Woodrow Wilson Elementary School
Shawnee, OK 74801

Prague Elementary School
Prague, OK 74864

Langston University

Langston Elementary School
Langston, OK 73050

Shields Heights Elementary School
Oklahoma City, OK 73100

Lee Elementary School
Oklahoma City, OK 73111

Shidler Elementary School
Oklahoma City, OK 73100

Northeastern State University

Cherokee Elementary School
Tahlequah, OK 74464

Cave Springs Elementary School
Stillwell, OK 74960

Stigler Elementary School
Stigler, OK 74462

Westside Elementary School
Claremore, OK 74047

Afton Elementary School
Afton, OK 74331

Rocky Mountain Elementary School
Stillwell, OK 74960

Stillwell Elementary School
Stillwell, OK 74960

Woodall Elementary School
Tahlequah, OK 74464

Greenwood Elementary School
Tahlequah, OK 74464

Vinita Elementary School
Vinita, OK 74301

Northwestern Oklahoma State University

Vici Elementary School
Vici, OK 73859

Dover Elementary School
Dover, OK 73734

Hennessey Elementary School
Hennessey, OK 73742

Coolidge Elementary School
Enid, OK

Wakita Elementary School
Wakita, OK 73771

Fairview Public School
Fairview, OK 73727

Woodward Public School
Woodward, OK 73801

Washington Elementary School
Alva, OK 73717

Cherokee Elementary School
Cherokee, OK 73728

Buffalo Elementary School
Buffalo, OK 73834

Oklahoma State University

Will Rogers Elementary School
Stillwater, OK 74074

Westwood Elementary School
Stillwater, OK 74074

Vandever Elementary School
Broken Arrow, OK 74012

Arrowhead Elementary School
Broken Arrow, OK 74012

Meeker Elementary School
Meeker, OK

Perry Elementary School
Perry, OK

Harmony Elementary School
Cushing, OK

Washington Elementary School
Bristow, OK 74010

Southeastern State University

Lincoln Elementary School
Ardmore, OK 73401

Bokchito Elementary School
Bokchito, OK 74726

Caddo Elementary School
Caddo, OK 74729

Coalgate Elementary School
Coalgate, OK 74538

East Ward Elementary School
Colbert, OK 74733

Mamie Johnson Elementary School
Atoka, OK 74820

Blue Elementary School
Durant, OK 74701

Eugene Field Elementary School
Hugo, OK 74743

Kingston Elementary School
Kingston, OK 73439

Southwestern Oklahoma State University

Custer Public School
Custer, OK 73639

Eakly Public School
Eakly, OK 73033

Hinton Public School
Hinton, OK 73047

Hydro Elementary School
Hydro, OK 73048

Sentinel Elementary School
Sentinel, OK 73664

Carnegie Elementary School
Carnegie, OK 73015

Frances Willard Elementary School
Hobart, OK 73651

Watonga Elementary School
Watonga, OK 73772

East Elementary School
Weatherford, OK 73096

Thomas Public School
Thomas, OK 73669

APPENDIX F

SCHOOLS RESPONDING TO THE NUTRITION EDUCATION
TEAM TRAINING QUESTIONNAIRE

Arrowhead Elementary School
Broken Arrow, OK 74012

Blue Elementary School
Durant, OK 74701

Bokchito Elementary School
Bokchito, OK 74726

Caddo Elementary School
Caddo, OK 74729

Carnegie Elementary School
Carnegie, OK 73015

Cherokee Elementary School
Cherokee, OK 73728

Cherokee Elementary School
Tahlequah, OK 74464

Coalgate Elementary School
Coalgate, OK 74538

Council Grove Elementary School
Oklahoma City, OK

Custer Public School
Custer, OK 73639

Dover Elementary School
Dover, OK 73734

East Elementary School
Weatherford, OK 73096

East Ward Elementary School
Colbert, OK 74733

Eugene Field Elementary School
Hugo, OK 74743

Frances Willard Elementary School
Hobart, OK 73651

Greenwood Elementary School
Tahlequah, OK 74464

Stigler Elementary School
Stigler, OK

Harmony Elementary School
Cushing, OK

Hydro Elementary School
Hydro, OK 73048

Jackson Elementary School
Norman, OK 73070

Kingston Elementary School
Kingston, OK 73439

Langston Elementary School
Langston, OK 73050

Lee Elementary School
Oklahoma City, OK 73111

Mamie Johnson Elementary School
Atoka, OK 74820

Meeker Elementary School
Meeker, OK

Orvis Risner Elementary School
Edmond, OK 73034

Perry Elementary School
Perry, OK

Plaza Towers Elementary School
Moore, OK 73160

Prague Elementary School
Prague, OK 74864

Rocky Mountain Elementary School
Stillwell, OK 74960

Sentinel Elementary School
Sentinel, OK 73664

Shidler Elementary School
Oklahoma City, OK 73100

Shields Heights Elementary School
Oklahoma City, OK 73100

Washington Elementary School
Bristow, OK 74010

Westside School
Claremore, OK 74047

Thomas Public School
Thomas, OK 73669

Vici Elementary School
Vici, OK 73859

Vinita Elementary School
Vinita, OK 74301

Washington Elementary School
Alva, OK 73717

Stillwell Elementary School
Stillwell, OK 74960

Westwood Elementary School
Stillwater, OK 74074

Will Rogers Elementary School
Stillwater, OK 74074

Woodrow Wilson Elementary School
Shawnee, OK 74801

Woodward Public School
Woodward, OK 73801

Woodall School
Tahlequah, OK 74464

APPENDIX G

STATES CONTACTED ABOUT NET PROGRAMS

Alabama

Alaska

Arizona

California

Colorado

Connecticut

Delaware

Florida

Hawaii

Kansas

Maine

Maryland

Massachusetts

Minnesota

Nebraska

New Mexico

New York

North Carolina

Oregon

West Virginia

Wisconsin

APPENDIX H

LETTER TO PRINCIPALS FROM OKLAHOMA STATE DEPART-
MENT OF EDUCATION--SCHOOL LUNCH SECTION,
NET PROGRAM



Oklahoma State University

COLLEGE OF HOME ECONOMICS

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST
(405) 624-5053

April 13, 1981

Dear Principal:

Recently you had an opportunity to participate in a NET Team Training Workshop to integrate nutrition education in the school curriculum because of your interest in nutrition education. You are a very important member of this team. As a follow-up of the Team Training, we are asking you to take a few minutes of your time to complete the enclosed questionnaire. Your answers will be anonymous and reported only as group scores.

The purpose of this investigation is to determine the impact of the NET Team Training, or Integrated Nutrition Education, on schools receiving training. The information will be used to make suggestions and recommendations for extending nutrition education into Oklahoma schools. Your contribution to this effort is appreciated.

This effort is in response to PL 95-166, The Nutrition Education and Training (NET) Act, which is administered in Oklahoma by the State Department of Education. The Oklahoma State University Food, Nutrition, and Institution Administration faculty is working closely with the professional staff in the School Lunch Section on this project. We have also consulted with an advisory group and each college and university teacher will be responsible for the Team Training in Integrated Nutrition Education.

Please distribute the enclosed questionnaire to teacher(s), the food-service personnel, parents, and any other personnel from your school who attended the NET Team Training Workshop. If the individuals are no longer at your school, please forward the questionnaire to them immediately.

Thank you for your prompt attention to this request for assistance.

Sincerely,

Bernice Kopei

Bernice Kopei, Ed. D.
Associate Professor
Food, Nutrition and Institution
Administration Department
College of Home Economics
Oklahoma State University
Stillwater, OK 74077

Mary Jo Stewart

Mary Jo Stewart, M.S.
NET Administrative Officer
State Department of Education
School Lunch Section
340 Oliver Hodge Building
2500 North Lincoln Boulevard
Oklahoma City, OK 73105

APPENDIX I

IMPACT OF NET TEAM TRAINING ON INTEGRATED
NUTRITION, TEACHERS' QUESTIONNAIRE

IMPACT STUDY
EFFECT OF N.E.T. TEAM TRAINING ON
INTEGRATED NUTRITION EDUCATION IN OKLAHOMA SCHOOLS

Teachers Survey

Oklahoma State Department of Education
Leslie Fisher, Superintendent

DIRECTIONS:

- Do not write your name on the questionnaire.
- Answer all of the questions with an appropriate response(s). There are no right or wrong answers. All responses will be anonymous.
- Please mark all responses with a large (X).
- Please return the questionnaire within 10 days.
- Thank you for your prompt attention to this questionnaire.
- Definitions: NET= Nutrition Education Training (FL 95-166).

QUESTIONS:

1. What year did you attend the NET Team Training Workshop? (mark one.)
☐ 1979
☐ 1980
2. What was your major responsibility in your school this year? (mark all that apply.)
☐ administrator
☐ teacher
☐ foodservice personnel
☐ parent
☐ other (please specify) _____
☐ none of the above
3. Have you changed your location and/or position since NET Team Training?
☐ yes
☐ no
4. If yes to question 3, what is your present position and/or location?
 _____ position
 _____ school
 _____ address
- 5-14. What grade level(s) did you teach before NET Team Training and what grade(s) are you currently teaching? (in each column mark all that apply.)

Before	Currently	
		K-3
		4-6
		junior high or middle school
		senior high school

- 15-5f. In what subject(s) was nutrition taught before and after the NET Team Training Workshop? (mark all that apply in each column.)

Before	After	
		reading
		english/language arts
		mathematics
		art
		general health education
		elementary science
		general elementary education
		elementary enrichment program
		biology
		physiology
		chemistry
		home economics
		other sciences
		physical education
		social science
		other (please specify) _____
		was/is not taught
		do not know

52. Who do you perceive as the leader for the NET Team Training in your school? (mark one.)
- ☐ principal
☐ teacher(s)
☐ foodservice personnel
☐ parent
☐ other (please specify) _____
☐ none of the above
53. Is the NET Team functioning at this time in your school?
- ☐ yes
☐ no
☐ do not know
54. If yes to question 53, to what extent does the NET Team function in your school? (mark one.)
- ☐ very frequently
☐ frequently
☐ occasionally
☐ seldom
☐ never
55. How do you perceive the value of your NET Team (principal, teacher(s), foodservice personnel, parent) for the purpose of integrating nutrition education in the elementary school? (mark one.)
- ☐ very valuable
☐ valuable
☐ moderately valuable
☐ somewhat valuable
☐ not at all valuable

- 55-59. How would you rate the importance of the following members of your team to the working of the team? (mark one for each member.)

	Very Important	Important	No Opinion	Of Little Importance	Not At All Important
principal	()	()	()	()	()
teacher	()	()	()	()	()
foodservice personnel	()	()	()	()	()
parent	()	()	()	()	()
other (please specify) _____	()	()	()	()	()

60. How many elementary teachers are there in your school building?
- _____

61. How many of them were involved in nutrition education before the NET Team Training?
- _____

62. How many teachers have been involved since the NET Team Training?
- _____

- 63-74. What was/were your motivation(s) for attending the NET Team Training Workshop? (mark all that apply.)

☐ expenses paid
☐ paid substitute
☐ money to purchase nutrition education materials
☐ time away from job to work together on nutrition education plans
☐ graduate credit offered
☐ opportunity to keep-up-to-date
☐ opportunity to obtain help with what I was already doing
☐ principal required me to attend
☐ opportunity to know more about nutrition
☐ opportunity to learn more about the school lunch program
☐ personal/professional growth
☐ other (please specify) _____

- 74-81. NET Team Training in nutrition education has: (mark all that apply.)

☐ reduced my workload
☐ made little difference in my workload
☐ added to my workload
☐ extended my resources for teaching
☐ motivated the students to learn
☐ created opportunities for students to become involved in learning
☐ motivated me to learn about nutrition
☐ other (please specify) _____

82-87. What were your opinions about the school lunch program before NET Team Training? (mark one for each line.)

	<u>Very</u> <u>Important</u>	<u>Important</u>	<u>No</u> <u>Opinion</u>	<u>Of Little</u> <u>Importance</u>	<u>Not At All</u> <u>Important</u>
a convenience for parents	()	()	()	()	()
a means of meeting 1/3 of students' daily dietary needs	()	()	()	()	()
a learning laboratory for nutrition education	()	()	()	()	()
a means of providing meals for children of working mothers	()	()	()	()	()
to provide free meals for economically deprived children	()	()	()	()	()
to help students form good food habits	()	()	()	()	()

88-93. What are your opinions about the school lunch program after NET Team Training? (mark one for each line.)

	<u>Very</u> <u>Important</u>	<u>Important</u>	<u>No</u> <u>Opinion</u>	<u>Of Little</u> <u>Importance</u>	<u>Not At All</u> <u>Important</u>
a convenience for parents	()	()	()	()	()
a means of meeting 1/3 of students' daily dietary needs	()	()	()	()	()
a learning laboratory for nutrition education	()	()	()	()	()
a means of providing meals for children of working mothers	()	()	()	()	()
to provide free meals for economically deprived children	()	()	()	()	()
to help students form good food habits	()	()	()	()	()

- 125-126. What proportion of the students in your classes do you estimate actually eat three well-balanced meals per day before and after integrating nutrition education? (mark one in each column.)

Before	After	
<input type="checkbox"/>	<input type="checkbox"/>	over 3/4
<input type="checkbox"/>	<input type="checkbox"/>	3/4 to 3/4
<input type="checkbox"/>	<input type="checkbox"/>	3/4 to 1/2
<input type="checkbox"/>	<input type="checkbox"/>	less than 1/4
<input type="checkbox"/>	<input type="checkbox"/>	no estimate

- 127-128. Approximately how many hours of integrated nutrition did you teach per school year before NET Team Training and how many hours do you teach now?

Before	Now	
<input type="checkbox"/>	<input type="checkbox"/>	more than 10 hours
<input type="checkbox"/>	<input type="checkbox"/>	6-10 hours
<input type="checkbox"/>	<input type="checkbox"/>	3-5 hours
<input type="checkbox"/>	<input type="checkbox"/>	0-2 hours

129. Was the NET Team Training adequate for teaching integrated nutrition education?

☐ yes
☐ no
☐ do not know

- 130-133. If no to question 129, what is needed? (mark all that apply.)

☐ knowledge about nutrition
☐ techniques of integrating nutrition into subject matter
☐ activities to integrate nutrition into the classroom and lunchroom
☐ other(please specify) _____

134. To what extent do you use the NET nutrition curriculum guide, "Creative Nutrition Education - A Team Approach"?

☐ a great deal
☐ quite a bit
☐ some
☐ almost none
☐ none

135. If none to question 134, identify the reason(s) for not using the "Creative Nutrition Education- A Team Approach", a curriculum guide.

- 136-140. I use the NET integrated curriculum guide for the purpose of: (mark all that apply.)

☐ identifying concepts and objectives of integrating nutrition into the curriculum
☐ using it as a source of information about nutrition
☐ student activities involving nutrition education
☐ evaluating nutrition education taught in the classroom
☐ other (please specify) _____

- 141-145. Since NET Team Training, how do you feel inservice training in nutrition education for teachers could best be provided? (mark all that apply.)

☐ graduate credit courses taught in summer school
☐ graduate credit courses taught in your area during the year
☐ non-credit workshops taught in your area during the year
☐ non-credit workshops taught in summer school
☐ other (please specify) _____

- 146-147. What was/is your opinion about requiring at least one nutrition course in an undergraduate curricula for all prospective teachers and administrators? (mark one in each column.)

Before NET Training	After NET Training	
<input type="checkbox"/>	<input type="checkbox"/>	strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	agree
<input type="checkbox"/>	<input type="checkbox"/>	no opinion
<input type="checkbox"/>	<input type="checkbox"/>	disagree
<input type="checkbox"/>	<input type="checkbox"/>	strongly disagree
<input type="checkbox"/>	<input type="checkbox"/>	do not know

148. I would rate the success of the NET Team Training for integrating nutrition education as: (mark only one.)

☐ very successful
☐ successful
☐ moderately successful
☐ somewhat successful
☐ not at all successful
☐ no opinion

149. What impact do you feel the NET Team Training had on integrating nutrition education in the schools as: (mark only one.)

☐ a great deal
☐ quite a bit
☐ some
☐ almost none
☐ none
☐ do not know

150-157. As a result of the NET Team Training, indicate the degree you feel the workshop contributed to each of the competencies listed below. (mark the degree that NET Team Training contributed to your competency.)

	A Great Deal	Quite A Bit	Some	Almost None	None
integrating nutrition education into the classroom	()	()	()	()	()
integrating nutrition education into the school lunch program	()	()	()	()	()
knowledge about nutrition	()	()	()	()	()
interpreting nutrition content appropriate for K-6	()	()	()	()	()
working as a team member in nutrition education	()	()	()	()	()
selecting nutrition resources appropriate to grade level and discipline	()	()	()	()	()
interest to know more about nutrition	()	()	()	()	()
use of nutrition education resources available from NET Program, State Department of Education	()	()	()	()	()

158. At this time, what do you consider to be the 3 most important outcomes of the NET Team Training Workshops?

1. _____

2. _____

3. _____

159. Of the resources introduced and made available at the NET Workshop, please list the resources that you used in your nutrition teaching that were helpful. Add another page if necessary.

Books

Pamphlets

Films

Filmstrips

Curriculum Guides

Other

- 160-162. List 3 activities that you have planned and carried out to integrate nutrition education into the school lunch program.

163. Please make any comments you wish to make about the impact of the NET Team Training on your school.

APPENDIX J

TEACHERS' RESPONSES TO OPEN-ENDED QUESTIONS

RESPONSES FROM TEACHERS

Awareness/Knowledge-Materials/Curriculum Activities

It has made me more aware of the importance of good nutrition for our school children.

I think the workshop helped our teachers work more as a group as far as not repeating materials or leaving out information, assuming another teacher has or will cover it.

Posters and charts, bulletin boards, health booklets, filmstrips, plays, food preparation.

Reminded interest in teaching nutrition.

Activities: Learned the four basic food groups. Tasting foods of nutrition value were set up in each classroom each Friday for several weeks.

One month taste everything on your plate contest.

Bulletin board in cafeteria used each month by a different grade for nutrition education.

Nutrition fair involved: teachers, students and community.

The tasting contest got the kids acquainted with some unfamiliar foods.

Nutrition "party" inviting another grade level.

Bulletin board to correlate nutrition.

Need some information sent annually to review, refresh and motivate teachers.

Analyzing daily lunch menu, visit kitchen, learning value of food.

Tasting parties, beginning and end of year surveys on likes/dislikes.

Games using four food groups, planning meals with all food groups, having tasting parties to introduce new foods.

The children were all made aware of how important their food is.

Parents were aware of the special learning done in nutrition.

Called attention to the first year but not carried over.

Tasting activities, identify a variety of foods, we created a food basket: A-as apple, B-as banana, etc. Children would name food they wanted to be, a carrot, etc.

Math and ratio; fruit and vegetable of the month; foods of Mexico in South studies unit, foods of _____ in South studies unit, Early American and today's foods and growth of foods in science-hydroponic/soil.

Learning centers, tasting parties for lower grades provided by upper grades, skits and plays to illustrate nutritional values of foods and school lunches.

Games, dittos.

The children discovered eating fruits and vegetables could be fun.

Tasting parties, new fresh vegetables and recipe for dip given. Making peanut butter with various fresh vegetables; churning butter.

Joint activities on each grade level created an interest and excitement for all. Bulletin boards were watched with great interest; wider use of filmstrips.

Preparing a meal (breakfast, lunch, dinner).

Tasting party, puppet show, posters.

Made posters and charts.

Planning of meals by each grade level.

Making menus, preparing, making yourself eat what you never said you liked.

Make food group booklets for study, we have a clean plate club, planning our own menu.

Assembly programs, skits, puppet show, recipe booklets.

We did a nutrition puppet play, we have worked a lot on games, songs related to nutrition, planned meals and used the food pictures from the Dairy Council to see them on our paper plates. I feel more emphasis on food value and the nutrition values of the food each child eats and they talk about.

Tasting party, baked whole wheat bread, nutrition puppet show.

Impact of NET Team Training was very successful.

Tasting parties, breakfast, lunch and supper collages, spelling books and writing dealing with four basic food groups.

This changed the eating habits of many of our staff members.

It opened the staff's eyes to the importance of teaching nutrition to our children.

Tasting parties: new foods. Art activities: cartoon fruit and vegetables. Testing foods with iodine and Les-tape which 4th graders can do.

Visits to the cafeteria, Type "A" lunch and its relation to the food groups, tasting parties (new foods).

The money for materials was great. Teachers who never taught nutrition before tried the new materials and will probably use them every year.

Bulletin board in cafeteria, nutritious treats for birthday parties, they eat better in the lunchroom, nutrition fair for parents.

The parents are better educated through the other training and accept their child cleaning plate process. Before we had notes such as I pay for my child's tray. He does not have to eat if he does not want the food. We had a Do Bee Bulletin Board - Do Bee says clean your plate and the child placed the Bee in a hive. All student took part (3/4 winner).

Parents didn't know that students would enjoy learning something about food and enjoy having them share their food fair so they could see how much their child has learned.

Bulletin boards, posters, filmstrips, booklets, plays or role playing, food preparation. Reminded interest in teaching nutrition.

Eating potato or turnip slices with peanut butter (also celery). Dip with cauliflower and broccoli. Made peanut butter to use with above. Cooking weiners, etc. with canned heat, fun!

I didn't know broccoli and cauliflower were good/ Turnips? Hey, I like it with peanut butter! (While roasting weiners over canned heat, isn't this fun! It's fun!

Surveyed students. Students helped plan menus. Met with parents and showed film.

Posters, evaluation of menus (daily).

Tasting different foods in the classroom, classifying foods, stressing the importance of nutrients and teaching where they are found.

Guided tour of school cafeteria, explanation of type lunch served-amounts of foods cooked, etc., analyzed lunch to see if it contained four food groups. Nutrition bulletin boards in the hall of our school. NET team instrumental in getting lunch period split for 5th-6th grade.

Allowing students to plan menus for entire school. Family style meals in the cafeteria occasionally. Tasting parties and a food fair.

Posted menus, used bulletin boards.

Everyone from the smallest kindergarten child to the twelveth grade was exposed to good nutrition in an entertaining, accurate manner. They learned an awful lot and didn't mind it a bit!

We were responsible for preparing for tasting parties. What we thought would be a lot of extra work after a work day really proved to be fun to us.

The children were so appreciative. A new awareness of nutrition.

Food fair, performed two plays for the kindergarten to make them aware of good food habits.

We had a food fair last spring and all the teachers really enjoyed the activities.

Children planning the school lunches, cooking in our room, teaching 3-2-4-4.

Tasting parties, unified the teachers in teaching nutrition. Parents were thrilled that their children had learned and experienced practical nutrition.

Puppet shows on nutrition, films on nutrition, posters on nutrition in lunchroom. Appreciated materials, I wish all teachers could attend the workshop, that would create more interest.

Bulletin board was hung in the lunch room and nutrition eye-catchers were changed monthly. Student poll of favorite meals was gathered by students and presented to foodservice personnel. Pizza party, study of four food groups.

Nutrition fair: very successful, educational. Let students take more leadership part next time. Could use more time for the actual fair.

Our parents were very excited about the nutrition projects their children were involved in. We did math with a watermelon which impressed one mother who commented to me that the different ways of introducing food has really helped to get her child to try different foods.

Preparing ethnic foods to coordinate with social studies projects involved parents in the child's activities, evoking favorable comments.

Most comments were received after studying balanced meals and the basic four food groups. Several mothers commented they thought more about the meals they served at home after the children began to comment on whether or not there were goods from all groups represented.

Planned a menu that was fixed in the cafeteria and made posters to emphasize the menu.

Nutrition unit: awareness, taste twice, student posters, films.

Students made bulletin board on ten leader nutrients.

Tasting of unusual foods.

Writing and performing a play about nutrition.

Showed films, made booklets, gave an assembly.

Children have planned and submitted menus to the cafeteria. A school bulletin board with each grade level and special classes participating.

Using magazines, pictures and children's drawings and we planned breakfasts.

Detailed study of four food groups, using dairy council booklets as basis.

Study of good snacking habits.

Study of where food comes from.

Made school lunch menu.

Made bulletin board supplies for lunchroom.

Bulletin board in lunchroom is strictly nutritional.

Had a school-wide nutrition week and contest for all children.

The bulletin board in our lunchroom is now strictly nutritional and is changed every two weeks. Both adults and children look to see "what's new" and have learned from it. We've received a lot of favorable comments on this. Parents have been very appreciative and supportive of things done in the classroom in cooking and providing food, materials and help in these activities.

Art.

Prepared a skit, made posters, used learning centers.

Tasting parties.

Children found out the nutritional values in our daily lunch program.

The children culminated their nutrition education by making displays on the bulletin board.

We had judges for our poster and the posters from all classrooms were posted on our hall bulletin board.

Everyone was interested and participation was 100%.

The parents and students were very excited about the program.

Food tasting parties.

Tasting party was a big hit.

For special day - had tasting party whole 43 "old timer's food balanced meal. Table decorations and music for lunch room.

Made T shirts with good nutrition slogans to decorate room.

Made posters for lunch room.

Nutrition bulletin board in lunchroom done by teachers.

Try new foods in the classroom and encourage this at lunch time also. Tasting parties.

Nutrition fair with posters which are judged and other activities.

Tour of lunchroom kitchen.

Classify into food groups the items on lunch menu.

At open house we served parents and guests nutritional snacks rather than the standard cookie and punch. Fifth and sixth graders prepared the refreshments: Crackers and cheese, peanut butter in celery sticks, etc. Parents were impressed - all the food was eaten.

Evaluating lunches with children as to nutritional content.

NET has made teachers and students more aware of value of evaluating and selecting proper foods.

Taken tours through kitchen.

Charted weekly lunches and nutritional value.

Posters on the wall in cafeteria.

Tasting activity.

Games involving food groups and nutrients.

Meal planning.

I feel it has made us aware of the nutritional value of foods and even when your on lunchroom duty, you are teaching and expressing the value of the lunches. I found that the children will eat these things if they know a few simple facts about the food when it is in front of them. Normally they would not bother eating or trying the foods they "think" they don't like!

Collages.

Categorizing food from menu to correlate with introduction to dewey decimal system.

We talk every morning about the lunch before going to eat.

The importance of drinking white over chocolate milk.

Nutritional snack foods.

Taught basic groups.

I believe it to be a very valuable subject especially with so many children who fix their own meals because their parents work.

Field trip to cafeteria.

Weiner roast in classroom.

Tasting party.

Made energy balls in classroom.

Planning and preparing and eating a balanced breakfast.

Healthful snacks - discussion and preparation.

Each grade level planned a menu for each month of the school year.

Tasting parties, learning about food preparation.

List foods eaten for week-study.

Plays on nutrition (other rooms).

Poster boards.

Glad to get ready made materials to use.

Everyone more aware of daily nutrition.

We have made games of the four food groups.

We have had snacks as we studied each of the basic four food groups.

We made art objects using stick figures from the basic four.

Charted intake of white milk.

Discussed and studied vegetables.

Discussed junk food.

Tasting party.

Food diary.

Films.

Nutrition education and weight control for food service employees.

Making posters of nutrition.

Tasting of different foods.

Students preparing the food.

Poster contest: Nutrition posters hung in lunchroom.

Field trip to cafeteria.

Weiner roast in classroom.

Tasting parties.

Energy balls.

We watched from Soup to Nuts on TV during the entire series. This was an excellent 15 minutes spent.

The children enjoyed the tasting party. Many were introduced to new fruits and vegetables.

Had a fruit and vegetable "tasting" party. Many were introduced to new fruits and vegetables.

Had a fruit and vegetable "tasting" party.

I served a cracker and peanut butter to my 1st graders each morning.

Provided nutrition bulletin boards.

Some are aware of how much more we need to know about nutrition, in our jobs of helping mold young minds and bodies. I really feel we need much more training in this area in our teacher training program.

The students and teacher liked the materials given to us at the workshop.

The students said the units were fun.

Had students make out daily menu's for their family.

Worked in "dairy council" material.

Showed films on nutrition.

Play, films, tasting parties.

Teachers had several tasting parties and fixed things in classrooms.

Team Effort/Motivation

I became more concerned about a greater study in nutrition.

It's been too long ago to recall.

The first year after the workshop we did several whole - school projects relating to the study of nutrition. The students enjoyed them and the staff enjoyed working together. This year we have done fewer large projects, but individual participation has been good.

Very positive reaction from parents.

Lunchroom needs to follow through with suggestions made.

Need some information sent annually to review, refresh and motivate teachers.

Team members got all other teachers involved along with students.

I think the workshop helped our teachers work more as a group as for not repeating materials or leaving out information, assuming another teacher has or will cover it.

While I feel our teaching has had impact on our students, it has had no impact on our school lunch program.

All the teachers who were not involved did get involved when the participants shared their new information with them. They all became involved. The children were all made aware of how important their food is.

Parents were aware of the special learning done in nutrition.

Called attention the 1st year but not carried over.

Are you still on that nutrition kick?

A good program, very helpful at all levels.

I would enjoy attending a workshop.

Our team is now divided into two schools limiting our meeting time. Individually we meet our students needs by specific grades. I teach a one-month comprehensive unit to 4th & 5th grade students. They seem eager and enthusiastic. Parent comments have been good.

Most teachers wish they had done more (especially those who attended the workshop). Most were impressed with the unit done by the 4th and 5th graders.

Created a great deal of enthusiasm among the majority of the elementary faculty.

The parents were pleased with the program.

I feel all our teachers feel nutrition is an important part of each child's growth and development.

The children enjoyed it and teachers thought it was fun to teach.

Parents appreciated the nutrition teaching.

Reminded interest in teaching nutrition.

A new school lunch manager has been hired this school and I had integration in the lunch program.

We had a great time sharing and working together with an entirely new awareness of the healthy and unhealthy nutritious and non-nutritious aspects of one another's diets! - as well as those of my children even to homemade sack lunches.

Many teachers said they wished they had gone to the NET workshop. They were very interested in our activities such as tasting parties.

With one teacher from each grade level attending, we were able to share ideas from the workshop with the whole staff. Therefore, I feel our staff is better informed about nutrition education. Because of the workshop, we got to know our cafeteria manager better. We have worked more closely with her since the workshop.

Those of us in the cafeteria were asked about the tasting parties by parents.

Teachers have really become involved in teaching nutrition. The resources we were able to buy were a big help.

I think all teachers must be involved, before they can get enthused and promote the program. The program should be continued with each teacher participating in the workshops at least once every five years.

Unified the teachers in teaching nutrition.

I feel all teachers benefited through purchase of nutrition materials. After two years the enthusiasm has died down somewhat but we still use the materials and enjoy them.

Enjoyed them - appreciate the materials - I wish all teachers could attend the workshop - that would create more interest.

Our school had a very successful nutrition fair this spring, guided by the local NET team members. The community as well as school members were involved. Materials and equipment purchased by the NET team members have been used by many of the teachers in the school.

Parents seem quite enthusiastic. I am amazed at parents' inadequate information regarding nutrition. To heck with college requirements, I think nutrition classes should be required in all Jr. High and High schools.

Cafeteria employees feel children are eating better now. Parents have commented on the children trying to eat better balanced meals now.

Committee met and presented ideas to lunchroom personnel which were implemented.

Tasting parties for the PTA.

All teachers appreciated and used materials obtained through funds from program. Each thought the table decorations enhanced and made lunches more attractive tasting party-big hit.

We started off with a big bang after NET workshop. Several changes occurred over summer-new principal, I changed positions (grade level), etc. We have not worked together as a team this year, so we have lost interest. Also, I feel there has been a breakdown in teacher-foodservice communication.

Everyone thought it was great at first.

NET Team Training certainly had an impact on our school. Other teachers were very interested in our activities some teachers borrowed our materials. The tasting cart we equipped has been used frequently by all teachers in our building. All teachers use the films we obtained. We did nutrition bulletin boards for our hall.

Most faculty members were/are very receptive.

It helps many work together and share ideas.

Coordinate activities in classroom and lunchroom cooperates "Johnny Appleseed Day", preparing school lunch menus, and in S.S. having "Hawaiian Luau" and "Mexican Day".

Brought the staff closer together.

The teachers who took a part in the program were very pleased with the result.

Teachers tend to do their own thing-finding and scheduling time is difficult.

Believe it or not, we had some difficulty with parents.

Parents enjoyed it. Our school parties are more nutritional than before.

The NET Team Training had a great impact on that particular elementary school however there would have been no carryover to other schools in the system or the community had there not been a nutrition education coordinator for the system. This is no reflection on the team, simply there is no time for training. Other teachers as they are busy with daily teaching, food production and administration.

Teachers have told me parents have said they were doing great things with nutrition education but the school lunch (in Norman) negates the effort expended. There is carryover at home but not in school lunch. I will enclose some menus I have critiqued.

Worked with lunch program and they worked with teachers.

It has been quite helpful in our school. Many parents commented on ways it effected their child's eating habits.

Helped teachers to prepare a tasting party for the elementary children. Displayed posters in cafeteria. Had a kitchen tour for children.

My group went to the program two years ago. We really pushed the first year, but we need a new group to pick up excitement each year.

Cafeteria employees feel that children are eating better now. Parents have commented on the children trying to eat better balanced meals now.

Other teachers were impressed with all that went on in the classes that participated.

I was the secretary at our school. Teachers were quite impressed with workshop and did begin alot of nutrition education projects. Kids loved working with and studying foods.

School Lunch

Type "A" lunch and its relation to the food groups.

We began having more children eat hot lunches at school.

100% classroom eating in lunchroom.

Less plate waste.

We got rid of all coke machines and put in fruit juice machines and they cannot keep it full. They sell much more juices than they were cokes.

Impact

Good for school and entire community.

Very successful.

The money for the materials was great. Teachers who had never taught nutrition before, tried the new materials and will probably use them every year.

NET Team Training made a tremendous impact on our teachers, cooks in the lunchroom and most of all the children.

Helped integrate nutrition teaching into several subject areas.

Helped motivate teachers and students.

It made some impact.

Most of our teachers were already implementing nutrition into their subjects so I really don't think we made much of an impression on them.

I consider this an excellent learning opportunity which will continue to enrich my teaching children as I intend to make good-healthy-eating; stressing quality choices and sensible quantities regardless of the subject areas assigned to me. This topic may be incorporated with math or language arts and need not be limited to the science field. This too I learned in NET training!

A very worthwhile program. It was well-planned and carried-out in a manner that was very valuable to all involved.

Teachers have really become involved in teaching nutrition. The resources we were able to buy were a big help.

I enjoyed the NET workshop, I think it made all of us more aware of how important nutrition is to the whole picture. I am planning to take a nutrition class at OU as a result of the workshop.

It was a good program, but all the follow-up requirements burned us out on nutrition.

The materials and equipment received are very valuable to use during the year. We have the materials in a certain place for all the teachers to use.

While I feel our teaching has had an impact on our students, it has had no impact on our school lunch program.

Good.

Called attention the first year but not carried over.

There should be approximately two workshops per year to enhance nutrition.

It has been used widely through the school.

A positive program.

No impact.

Other

Nutrition is mentioned now and we get a groan or a laugh.

Unless a top administrator is involved in the classes it's a waste of money.

Some negative comments at first but comments became more positive as others understood goals.

The materials and equipment received are very valuable to use during the year. We have the materials in a certain place for all the teachers to use.

Lots of fun.

The students were impressed and so were the parents. We received many comments of "Great job", "We are so pleased that you are teaching nutrition" and of course the proverbial "why are you teaching THAT? It is a waste of time".

We removed the coke machine and sold juices for two weeks so the greatest number of comments from our high schoolers were "when are we getting our coke machine back?"

A good program, very helpful at all levels. I would enjoy attending a workshop.

As a counselor, I have made known to the teachers that materials are available.

Not enough time to teach it as a complete - separate course - as more easily integrated with health and social studies.

Thank you for the opportunity to participate in an excellent teacher-learning activity. This was one of those rare occasions in which the teacher was taught before being expected to teach. My most sincere thanks.

I enjoyed the workshop.

Very good. Should have been a unit lesson taught by each grade during a specific time of the school year with follow-up activities continuing through the school year.

The whole thing was just like a new toy - the newness wore off. People who didn't teach health didn't want to mess with the program. They leave it up to the health teacher.

I thoroughly enjoyed the workshop.

Need to be more, but not enough time.

Interesting! This makes nutrition education fun, creative teaching.

We need a basic health program along with the nutrition program. Some children didn't know to wash their hands before a meal.

Was great! School I'm at now, even with local workshops will not use program so it is better to have a team from each school plan and supplement a program into action.

Super!, great, fun, educational.

I thought the training was very good. The children enjoyed the new activities and films that were about nutrition.

Monies from this project were used for films, kits, nutrition books with ideas and activities for all teachers to use.

The college instructor was not good at all. She has been out of the classroom too long!

Others were interested but I feel would benefit more from some kind of first hand participation. Dr. Cotrell and Nettie Kuymie did a great job.

Very good. I felt this short workshop was better than a college course that would last a semester.

Thank you for the opportunity to participate.

The teachers who did not attend the workshop resented, the teachers who did attend, are trying to get them to participate in the program.

VITA

Charis Faye Ross

Candidate for the Degree of

Master of Science

Thesis: IMPACT OF NUTRITION EDUCATION TEAM TRAINING (NET) FOR INTEGRATING NUTRITION EDUCATION IN OKLAHOMA ELEMENTARY SCHOOLS

Major Field: Food, Nutrition and Institution Administration

Biographical:

Personal Data: Born in San Jose, California, October 28, 1956, the daughter of Harvey D. and Julia F. Ross.

Education: Graduated from Aptos High School, Aptos, California, in 1974; received Bachelor of Science degree in Dietetics-Food Administration from California Polytechnic State University, San Luis Obispo, in 1979; completed requirements for the Master of Science degree at Oklahoma State University in December, 1982.

Professional Organizations: American Dietetics Association, Omicron Nu.