

304

AN ANALYSIS OF THE NATIONAL SCHOOL LUNCH AND NUTRITION  
EDUCATION PROGRAMS: A PROPOSAL FOR A COMMUNITY BASED APPROACH

by

BARBARA ANNE YENZER

B. S., Kansas State University, 1974

-

---

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Foods and Nutrition  
College of Home Economics

KANSAS STATE UNIVERSITY  
Manhattan, Kansas  
1980

Approved by:

  
Major Professor

SPEC  
COLL  
LD  
2668  
.R4  
1980  
Y45  
C.2

## TABLE OF CONTENTS

	Page
Chapter I. Historical Background: Early Beginnings Through 1959. . . . .	1
Early Beginnings . . . . .	1
The Great Depression . . . . .	1
World War II . . . . .	2
The National School Lunch Act. . . . .	3
Chapter II. Socially Motivating Forces Behind New Legislation: the 1960's through the Early 1970's. . . . .	8
Growing Social Consciousness . . . . .	8
Surveys Indicate Need. . . . .	12
Legislative Action . . . . .	14
Chapter III. Congress Re-evaluates: Current Issues of Importance to the National School Lunch Program . . . . .	19
Introduction . . . . .	19
Plate Waste. . . . .	20
Avoiding Plate Waste . . . . .	23
Offer vs Serve. . . . .	23
Fast Food Approach. . . . .	24
Analysis of Nutritional Value of Two School Lunch Meal Patterns . . . . .	25
Type A Meal Pattern . . . . .	25
Nutrient Standard Approach. . . . .	29
Student Participation. . . . .	31
Effect of Commodity Distributions on School Lunch . . . . .	32
Lack of Nutrition Education. . . . .	35
National School Lunch and Child Nutrition Act Amendments of 1977. . . . .	37
Section 10. . . . .	38
Section 19. . . . .	39

	Page
Chapter IV. Doubts About Implementation and Effectiveness of the Nutrition Education Program . . . . .	43
Introduction . . . . .	43
Elimination of Plate Waste . . . . .	44
Improved Health: Community and Parent Reinforcement . . . . .	46
Improved Health: Assessment to Validate Nutrition Education and School Lunches	51
Curriculum Materials . . . . .	53
Teaching Approaches. . . . .	55
Integrated Curriculum. . . . .	58
Chapter V. Future of School Lunch . . . . .	59
Introduction . . . . .	59
Community Support. . . . .	59
Legislative Changes affecting School Lunch	60
Meal Pattern Changes. . . . .	60
Banning of Competitive Foods. . . . .	62
Possible Influences on Future Legislation Concerning Nutrition Education. . . . .	63
"Nutrition Education: Directions for the 1980's. . . . .	63
NET Programs to be Evaluated. . . . .	64
Chapter VI. Conclusion . . . . .	65
Introduction . . . . .	65
School Lunch: A Public Relations Problem.	65
Nutrition Education. . . . .	66
School Lunches and Nutrition Education: Meeting Community Needs . . . . .	68

Chapter I  
Historial Background  
Through 1959

Early Beginnings

Nutrition programs in schools began in this country in the early 1900's in Boston, Philadelphia, and New York City (1). Other cities soon followed their lead (2). Serving food at school was not unique to the United States. Several years earlier the practice had been established in France, England, Holland, Italy, and Switzerland (1). Although information on the European programs was available, the United States school food programs had disorganized, sporadic beginnings. The school lunch program, as we know it today, was initiated individually and collectively by school administrators, mothers, and private associations, especially parent-teacher organizations (1, 2).

In 1932 the first Federal aid to school feeding programs was granted by the Reconstruction Finance Corporation to communities in southwestern Missouri. A year later, Federal assistance was made available from the Civil Works Administration and Federal Emergency Administration (2).

The Great Depression

The depression of the 1930's was significant in the development of the school lunch programs. To relieve the desperate situations caused by plummeting farm prices and wide-spread unemployment, two federal assistance programs were developed which aided school lunch programs as well (3).



To remove price-depressing surplus foods from the market P.L. 74-320, authorized the creation of the Federal Surplus Commodities Corporation which set up a program through which surplus foods were purchased by the government and distributed through domestic donations. School lunch programs benefited from these donations (4).

To ease wide-spread unemployment, the Public Works Administration was created in 1935 to provide unemployed persons jobs on public works projects. Unemployed, needy women were assigned to the preparation and serving of school lunches. A second program, the National Youth Administration (NYA), also provided assistance to the school lunch program by training unemployed youth and then providing them with part-time work. Some NYA employees worked in the school lunch kitchens while others made equipment and furniture (1, 2, 5).

Lunch prices were held to a minimum during the depression because much of the labor was provided without cost to the school district and surplus foods were donated. The number of children participating in the school lunch program soared (2).

### World War II

World War II years produced a major setback and a major stimulus for school lunches (6). Farm surpluses were eliminated because donated commodities were needed to support U. S. troops and allies. The kinds and quantity of foods available for distribution to schools dropped from a high of 454 million pounds in 1942 to 93 million pounds in 1944. Additionally, Public Works Administration labor was eliminated. Consequently,

the number of schools serving lunches declined and student participation dropped from 6 million to 5 million. The decline in student participation would have been more severe if the 78th Congress had not enacted legislation creating a cash assistance program, making funds available to maintain the school lunch and milk programs during fiscal year 1943-44 (2).

Following the war, school boards were hesitant to initiate school lunch programs because of the past experiences of uncertainty of Federal support. Funding based on yearly appropriations rather than specific legislation assuring continuation of the program was a limiting factor. Without some guarantee of the program's future, it was regarded by some school officials as a high risk venture (1). However, as World War II drew to a close, members of Congress were receiving two important types of information. First, they were informed by the Pentagon that approximately 40 percent of the men inducted during the war were rejected for service because of lack of physical fitness (7). The need for better nutrition was implicated. Secondly, Congress was concerned that farmers would be left with large surpluses resulting from their increased production during the war (3).

#### The National School Lunch Act

In 1946 the National School Lunch Act (NSLA) was passed. The stated purpose was "as a measure of national security, to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities" (8). The NSLA

stabilized Federal aid to schools. The Act made the program more secure and enabled it to expand (9). This expansion was possible because the Federal government encouraged and assisted public and non-profit private schools to serve well-balanced lunches to children.

Under the Act, Federal assistance includes:

- ...a basic cash and donated food subsidy for all lunches, with additional reimbursements for meals served free or at a reduced price to children who cannot pay the full price.
- ...nonfood assistance funds to help needy schools acquire food service equipment.
- ...a state administrative expense fund to partially reimburse States for undertaking the additional administrative activities required by the legislation.
- ...limited funds to undertake program-related nutrition education training projects, studies and surveys of food service requirements, and special development projects. (10)

The Department of Agriculture, through the Food and Nutrition Service (FNS) headquarters and regional offices (a) supervises States' administration of the program, (b) administers the program for private schools in those States where the State educational agencies are prohibited from disbursing funds to private schools, (c) distributes commodities to the States and private schools where applicable, (d) reviews State and local school operations, (e) apportions funds to the States, and (f) sets standards for nutritious meals (11).

At the State level, the State educational agency administers the program in public schools and in private schools where permitted. The

education agency (a) submits a State plan of child nutrition operations for each fiscal year for FNS approval, (b) establishes a system of accounting under which school food authorities report program information, (c) maintains current records on school's operations and accounts for program funds, (d) determines whether the matching requirements of the Act are being met, (e) provides supervisory assistance to local schools, (f) provides the schools with monthly information on foods determined by the Department of Agriculture to be in plentiful supply, and (g) investigates complaints. It is the responsibility of FNS and the State education agency to extend the program to all schools. The States are responsible for assisting local schools to increase their school lunch participation (11).

At the local level, schools who participate are required to sign agreements with the state education agency which state that meals will be served to meet the minimum nutritional requirements as determined by the Secretary of Agriculture; meals will be served without cost or at a reduced cost to children who are determined by local school authorities to be unable to pay the full cost of the lunch; and such children are not to be segregated or discriminated against in any way; programs will be operated on a non-profit basis; donated commodities will be utilized; and proper records and reports will be maintained and submitted to the state agency as required (2, 3).

States must match the Federal grants for general cash-for-food assistance from sources within the state at a ratio of 3 to 1. In States with below-average per capita incomes, this ratio may be decreased (11).

Three types of meals were acceptable under the NSLA. Type A lunches were to meet one-third to one-half of the minimum daily nutritional requirements of children age 10-12. By adjusting amounts of food, the meal pattern could be adopted to meet the nutritional needs for children of all ages. A Type A lunch must include: one-half pint of whole milk; 2 oz. of a protein-rich food with specifications for dried peas and beans, peanut butter and eggs; 3/4 cup of a combination of vegetables and fruits; 1 portion of enriched or whole grain bread; and two teaspoons of butter or fortified margarine (2, 3, 12).

Type B lunches were considered supplemental. They were designed for schools who did not have adequate kitchen facilities to prepare Type A lunches. Type B lunches required smaller amounts of the same foods from a Type A meal (2).

Type C lunches were one-half pint of whole milk which was intended to be served as a beverage to accompany foods brought from home (2).

Three notable changes have been made in the Type A meal pattern since it was implemented in 1946:

- ...the definition of milk was changed in 1973 from whole fluid milk to include forms of whole, lowfat, skim, cultured buttermilk and flavored forms of these milks.

- ...the definition of bread was expanded in 1974 to include crackers, taco shells and pizza crust.

- ...the butter/or fortified margarine requirement was completely removed from the meal pattern in 1976 (10).

With the exception of a few amendments to the NSLA and the enactment of other separate legislation, the National School Lunch Program (NSLP) operated without basic change through 1959. The first amendment to the

NSLA in 1952 changed the apportionment of funds between States and Territories to serve needy children better (2). The Special Milk Act of 1954 replaced the Type C lunch under the NSLP. The Act enabled USDA to reimburse schools for milk served in addition to that available with the Type A lunch (3).

Two pieces of separate legislation dealing with agricultural commodities have been vital to the expansion of the NSLP. In 1935, prior to the passage of the NSLA, the Department of Agriculture acquired the authority to purchase agricultural commodities through Section 32 of P.L. 74-320. Funds for the purchase of commodities were provided from 30 percent of the U.S. customs receipts from duties collected under customs legislation during each calendar year (4). The authority of the Secretary of Agriculture was expanded again in 1949 with the passage of P.L. 81-439. Section 416 of the Agriculture Act provided for the Secretary of Agriculture to donate commodities purchased under the price support of the Commodities Credit Corporation. Priority was to be given to the school lunch program (13).

Chapter II  
1960's Through Early 1970's:  
Socially Motivating Forces  
Behind New Legislation

Introduction

During the 1960's and early 1970's the school lunch program became very closely aligned with the growing social concerns of that period. No longer was the primary purpose of the NSLP to improve the quality of future U.S. soldiers or to relieve farmers' surplus commodity problems. The NSLP became a major weapon in the war on hunger and malnutrition.

Hunger and malnutrition became an issue of moral and pragmatic concern to all Americans. United States with its abundant food resources had no excuse for not assuring that all American children have an adequate diet. Legislators felt that because strong and healthy people are more productive, it would be in the national interest to assure an adequate diet for all American children. The youth of America were viewed as its most precious resource (14). Priorities were set on reaching all needy children with free and reduced-price meals -- making school lunches available to all children in all schools (15).

In the early 1960's legislative emphasis was on expanding participation in the school lunch program. In 1962 an amendment to the NSLA changed the Federal assistance to states serving free and reduced-price

lunches (16). The added Section 11, Special Assistance, allowed Federal assistance to be based on each state's need and school lunch participation rather than the state's need and school-aged population (17). Higher cash reimbursements would go to needy areas to assist these schools in serving lunches to students unable to pay the full cost of the school lunch. At the end of the 1961-62 school year, 270 especially needy schools were benefiting from the legislation. Approximately 25,000 children were served free and reduced-price lunches (18). Also in 1962, Congress authorized the annual National School Lunch Week. The week of ceremonies and activities were designed to begin on the second Sunday of October each year (19).

Four years later, P.L. 89-642, the Child Nutrition Act, as signed into law on October 11, 1966, made the first major additions to the Federal child nutrition programs since the inauguration of the Special Milk Program in 1954. The original 1966 Act contained major provisions which expanded the concept of nutrition for needy children. The Special Milk Program was extended and made a part of the Act. Funds were provided for a two year pilot breakfast program in economically poor areas or in schools where children had to travel long distances to school. A permanent program of non-food assistance was established where Federal funding was made available for the purchase of equipment for the child nutrition programs (20).

In the late 1960's a combination of events catapulted hunger into the public spotlight. T.V. documentaries, nutrition surveys, people's



marches, and nutrition conferences made the nation conscious that hunger and malnutrition existed in this country. These factors helped to create the most widespread awareness and interest in human nutrition in any period in history (9).

Whatever complacency U. S. citizens had was shattered by widely publicized reports of hunger among many large sectors of the United States' population. Several of the major and sweeping changes that have occurred in school food service and those changes being made today, can be attributed to the following motivating forces.

Hunger first gained national notoriety in April, 1967, when Senators Robert Kennedy of New York and Joseph Clark of Pennsylvania went to Cleveland, Mississippi, to study poverty programs. Their visit prompted the first congressional hearings on federal food programs outside the confines of the agriculture committees (21, 22).

Although the discovery of hunger and malnutrition in the South commanded national attention, citizen's groups were already concerned about hunger in America. Both the Citizen's Crusade Against Poverty and the Field Foundation were involved in projects to help hungry poor. The Citizen's Crusade Against Poverty had been created in 1965 in support of poverty legislation. In 1967, the Citizen's Crusade formed a special "Citizen's Board of Inquiry into Hunger and Malnutrition in the United States" with the objective of focusing national attention on the problem of hunger. Teams of researchers went into the ghettos of Boston and New York, to Indian Reservations, to Appalachia and other rural pockets of poverty, to migrant camps, and to the Mexican-American barrios. The

Board was performing a function that Congress had long neglected. (22, 23). Their report, "Hunger, U.S.A.", was a study of the inadequacies of food distribution programs among the poor. The report charged that all institutions had failed the hungry poor (24).

The Field Foundation, financed by Chicago's Marshall Field Department Store family, which often invests money in risky, politically unpopular issues, found impetus in the Senators' visit to Mississippi. The Foundation sponsored a project for medical and food evaluations for Head Start children in the South (22).

The most dramatic presentation of malnutrition was the CBS network television program "Hunger in America" which first aired in May, 1968. Both the food-related professionals and lay people were shocked and alarmed to learn that the United States, an affluent country, had an apparent food shortage (22).

The Poor People's Campaign, sponsored by the Southern Christian Leadership Conference of the then recently assassinated Dr. Martin Luther King, Jr., took the elimination of hunger as one of its issues. They had an encampment in Washington and made the satisfaction of hunger one of its major demands (9, 22, 23). The Reverend Ralph Abernathy, President of the Southern Leadership Conference, testified before the Labor and Public Welfare Subcommittee on Employment, Manpower and Poverty on May 29, 1968, said "We cannot let Americans starve because the Agriculture Committees chose to dislike the poor." (23).

Privately conducted studies continued to highlight the need for better nutrition. "Their Daily Bread" (1968) by the Committee on School Lunch Participation, documented the failure of the National School Lunch Program to reach hungry children. They cited a need for more free and reduced-price meals (25). "Let Them Eat Promises" (1969) described the politics involved in Federal feeding programs (22). "Still Hungry in America" (1973), jointly sponsored by the Southern Regional Council, Inc. and the Robert Kennedy Memorial Foundation, made yet another mark on taxpayers and legislators (26).

#### Surveys Indicate Need

Between 1965 and 1972 four major nutrition surveys were conducted. The Department of Agriculture's 1965 Household Food Consumption Survey of food intake and nutritive value of family diets in the United States showed a drop in the quality of diets as compared with the 1955 survey. During that ten year period, there was an increase in the consumption of snack foods, bakery products, and other processed foods, and a drop in vegetable consumption. Nutrient intakes were lower, with a substantially higher percentage of families failing to meet the Recommended Dietary Allowances in 1965 as compared with statistics compiled in 1955 (29).

The Ten State Nutrition Survey was the largest, most comprehensive ever conducted in the United States and focused on the lower income populations in ten selected states. The Survey found a significant proportion of this population either malnourished or at risk of developing nutritional problems. Children in the 10-16 year old group had the

worst nutritional patterns. As educational levels rose, nutritional inadequacies diminished. Inadequate diets were found largely due to poor food choices. School lunches were found to provide a substantial percentage of recommended nutrients, contributing at least one-third of the calories, calcium, iron, and vitamin A for children participating in the lunch program (28).

The Preschool Nutrition Survey, comprised of a random sample of the U.S. preschool-aged population, was designed to determine the nutritional status of a cross-section of preschool children. Researchers hoped to ascertain how various programs, particularly federally supported ones, influenced childhood health and nutrition. Their results, like those found in the USDA Household Food Consumption Survey and the Ten-State Nutrition Survey, indicated that the nutritional quality of the diet correlates poorly with socioeconomic status (29).

The most recent survey, the Health and Nutrition Examination Survey (HANES), also found that nutritional problems were not isolated to lower income populations. Samplings of individuals spanning the socioeconomic spectrum demonstrated frequent iron inadequacies and for significant numbers of persons, low intakes of calcium and vitamins A and C (30).

These major surveys tend to support one another. The inevitable conclusion of these reports and surveys was that the eating habits of Americans leave much to be desired. The problems of inadequate nutrition exist in the suburbs as well as in the ghettos. Many children simply are not eating properly, nor are they developing good life-long food/nutrition habits.

### Legislative Action

The House Agriculture Committee issued a "Hunger Study", June 16, 1968, in response to the Citizen's Board of Inquiry's report. Statements made in the Agriculture's study were highly critical of the Board's report. According to the Agriculture Committee, there was very little actual hunger in the United States. However, they agreed that wide-spread malnutrition existed, but it was largely caused by ignorance as to what constitutes a balanced diet (21).

The Senate Select Committee on Nutrition and Human Needs was established by Senate Resolution 281, July 20, 1968. Legislators recognized the need for Congressional response to the major governmental and privately conducted studies on hunger. The purpose of the Select Committee was to study the food, medical and other related basic needs among people in the United States and report their findings to appropriate Committees of the Senate. Senator George McGovern, (D.-S.D.) was appointed as chairman of the newly formed committee (19).

President Johnson signed P.L. 90-302, an amendment to the Child Nutrition Act in 1968, which extended and expanded food service programs to children. The Special Food Service Program for Children authorized lunches for children in day care centers, centers for handicapped children, settlement houses and summer day camps for three years. The new program applied to children from impoverished areas or those areas with a high percentage of working mothers (23, 31, 32).

President Nixon, in a message to Congress May 6, 1969, directed that the Urban Affairs Council consider the establishment of a new Agency, the Food and Nutrition Service. Nixon also called for a White House Conference on hunger and malnutrition to involve the private sector (33). The Food and Nutrition Service (FNS) was established on August 8, 1969, by the Secretary of Agriculture. The exclusive concern of the agency was administration of Federal food program. The creation of this agency was to permit greater specialization within the food program (34). The White House Conference on Food Nutrition and Health was called for December 1969. The Conference recommended that school lunch programs be expanded to include more free and reduced-price meals to all children through secondary schools (35).

Legislation passed in the early 1970's continued to expand the school lunch program as an anti-hunger program. In 1970, Congress passed four bills providing food to needy children. P.L. 91-248 established minimum national income eligibility standards for free and reduced-price lunches, mandating that children from families below that level "shall be served meals" (36). P.L. 91-207 authorized the transfer of additional money from Section 32 (customs receipts) during the fiscal year to provide more free and reduced-price lunches to children not already being aided by the existing program (37). P.L. 91-295 made the Special Milk Act a permanent one (38). P.L. 91-233 amended the Agriculture Act of 1949 to remove the elimination of dairy products supplied to the school lunch program through the Commodity Credit Corporation (39).

August 13, 1971, three weeks before most schools opened, the Nixon Administration recommended a reduction in the Federal reimbursements from 60 cents per lunch to 35 cents. The savings to the Federal government would have been nearly 300 million dollars. Theoretically, the States would have made up the difference in the reimbursement rates to individual schools. The cuts were called for by the Office of Management and Budget (40). The recommendation was not popular. Yielding to Congressional pressure, the Department of Agriculture increased spending on free and reduced-price lunches by 135 million dollars. However, it tightened the eligibility standards which eliminated a number of needy children from participating in the program. The new law established a minimum 40 cents per meal reimbursement for free lunches. All regularly priced lunches had a 6 cents reimbursement (41). That same year, P.L. 92-32 authorized the transfer of Section 32 funds of P.L. 74-320 to provide even more free and reduced-price lunches (42).

After the May 1970 enactment of P.L. 91-248 (36), which clarified responsibility for providing free or reduced-price lunches, the number of students eating such lunches increased from about 5 million to 8.1 million children in April 1972, a 60 percent increase. However, a Food and Nutrition Service survey showed that nearly 1.5 million needy children were not eating free or reduced-price lunches. The General Accounting Office (GAO) reviewed the administration of the NSLP to determine if the objectives of making nutritious lunches available to all school children and providing them at free and reduced-prices to needy children

were being achieved effectively. The GAO found many school officials were not interested in participating in the NSLP for many reasons, particularly because the schools preferred to operate their own lunch program or the schools did not have the facilities or equipment to prepare and serve lunches. The GAO noted administrative weaknesses in the implementation of the free and reduced-price programs (11).

Public Law 93-422 passed in 1972 increased the Federal reimbursement to schools to relieve schools of the inflationary cost of food by raising the "general assistance" reimbursement to 8 cents per meal. It authorized free lunch eligibility standards at 125 percent of the federal minimum standard. Minimum levels of funding were made available for non-food assistance, to be used solely in schools without food service who were determined to be especially needy. Those schools determined to be especially needy would not be required to supply matching funds for the non-food assistance (43).

In 1973, almost two million so called "economically needy" children did not receive lunch - a step backwards from 1972, when 1.2 million needy children did not receive lunch. These figures only cover eligible children in public and private schools that were participating in the NSLP. There are about five million children attending approximately 17,000 schools that have no food service. Supposedly, about 15 percent of these children are needy in economic terms (44). In other words, in spite of the fact that 80 percent of the children have access to school lunch on a national average and 50 percent participate, i.e., get lunch,



there are 15 million children who have access to a school lunch program and 5 million who don't have access to a lunch program, who could be in nutritional jeopardy (45).

Early in 1974 it was disclosed that the Nixon administration intended to phase out all commodity assistance to the NSLP by June 30, 1975. Replacing the commodity donations with cash payments would supposedly reduce the federal cost of aiding the school lunch program, especially when there were limited crop surpluses available for government purchases (46). P.L. 93-326 was enacted in 1974 to extend the Secretary of Agriculture's authority to purchase food commodities for school lunch programs at non-surplus prices through 1975 (47).

Congress enacted into law P.L. 94-105 (48) over President Ford's veto, a bill to amend and extend the school lunch and other child nutrition programs. It included major provisions that made the school breakfast program permanent and required breakfast be available in all eligible schools, extended the summer food program, revised eligibility for reduced-price meals, required schools participating in the NSLP to offer reduced-price meals to students, and extended the Secretary of Agriculture's authority to purchase agricultural commodities. States who had phased out their commodities distribution facilities could choose to receive cash in lieu of commodities (49).

Chapter III  
Congress Reevaluates Current Issues  
Of Importance To The National School Lunch Program

Introduction

In the middle 1970's Congress began a period of re-evaluating the so called "poverty programs" of the 1960's. One of these programs was the school lunch program. The scrutiny of the program was to be expected. Over thirty years had been spent developing, implementing and securing the program's operation. Both student participation and Federal support had increased since 1946. Nearly 26.6 million children were being fed annually at a yearly cost to taxpayers of over \$2.7 billion (50). School food service had become the third largest away-from-home food market in the United States (3, 5). It was the largest feeding program of its type in the world (3). It clearly had economic impact with a market value of \$4.2 billion in fiscal 1976. Total food expenditures alone were estimated at \$1.3 billion (51). Congress wanted to see that the program was functioning as intended (50). They wanted answers in terms of accountability (52).

Special government reports and investigations and private and university affiliated research, dealing with aspects of the NSLP are flourishing. The Subcommittee on Elementary, Secondary, and Vocational Education of the Committee of Education and Labor and the Subcommittee on Domestic Marketing, Consumer Relations, and Nutrition of the Committee

of Agriculture, both in the U. S. House of Representatives, and the Senate Select Committee on Nutrition and Human Needs have held hearings to obtain information on key issues related to the school lunch program. School food service directors, health department officials, representatives of school administration university professors, nutrition researchers and government personnel have given testimony identifying problems with the NSLP.

#### Plate Waste

Plate waste became the most explosive issue in the public and government arena. In February, 1975, Congressman William Goodling (D-PA) voiced concern on the food wasted in the lunch program, "it is the most wasteful program I have ever seen in my life." As a former school administrator, he noted a lot of food going into the garbage cans, and "we are wasting food simply because we have not learned that we can try to improve the nutrition, try to improve the diet of a youngster, but we cannot force them to eat that food." (53).

The problem of food preference and food quality as it affects acceptance and plate waste gained notoriety. A project taken on by reporters of the Chicago Tribune had far-reaching impact. The purpose of the investigation was to determine the effectiveness of the NSLP in Chicago, by determining the quality of the lunches as served and as eaten. In all schools in the investigation, the calories as served, were considerably less than the standard. The average caloric value was only two-thirds of the selected standard of 933 calories. The amount of

food consumed by the children was very low in comparison with the Recommended Dietary Allowances (RDA's) for children ages 11-14. In one case, less than one-third of the RDA was consumed by elementary students (54).

The results of investigations by the reporters, together with data obtained by interviews with school personnel and a review of literature, were reported in a four day series of articles. The articles received prominent front page space three out of the four days (55 - 58). Other publications soon followed suit (59, 60). An investigation into the New York Public School's lunch program made serious charges about the nutritional content of their school lunches (61).

The National Advisory Council on Child Nutrition said in their 1976 annual report that "more experience is needed before valid conclusions could be reached" on the problem of plate waste. The report noted that, given a choice, most students took the complete Type A lunch. Suggestions were made to serve more fruit than vegetables because vegetables get thrown away more often, that girls reject more food than boys, and that buffet lines cause less waste (62).

Dr. Paul LaChance, former Director of the Rutgers School Food Service Effectiveness Research Project, done in cooperation with U.S.D.A., the Office of Economic Opportunity, and the State of New Jersey, identified problems which play a role in plate waste in school lunches in oversight hearings (63). Among those cited were: portion size for younger children; familiarity of the food; time of day for lunch; the actual time available for eating; and the lunchroom environment. In his

judgment, remedial action included: food quality specifications which meet the nutritive needs for specified ages of children; food preferences testing; food and nutrition education for teachers and nurses in cooperation with the school food service directors; improved and innovative lunchroom environments; and establishment of the school district as a health delivery center in each community (45).

The Department of Agriculture contracted for a literature review of food waste in the NSLP. The review was to specifically address food waste relative to: degree and severity, influencing factors, impact of nutrition education, and recommendations for the NSLP. The review revealed that the literature on school plate waste is sparse, anecdotal, journalistic and not up to scientific standard. The data, in their view, was inadequate. The literature review did identify primary factors affecting plate waste which were summarized: food preparation methods; type of delivery system - ranging from on-site food preparation to preplated meals delivered to the schools; commitment of school administration and community to the program; availability of nutrition education; personal and social aspects affecting food consumption - which includes ethnic background, family practices, and peer pressure. According to USDA, appropriate means of minimizing plate waste in school lunch programs would include: increasing the understanding of food service personnel in subjects of good menu planning, quality food preparation, and imaginative techniques for merchandizing school lunches; development of materials to assist school food service personnel in menu planning and writing specifications for pre-prepared foods as

well as food handling techniques and serving methods for these foods; implementing a revision of the Type A meal pattern to provide more flexibility in serving size according to age group; extending the use of a nutrient standard method of menu planning as an alternative to the Type A pattern; nutrition education; student involvement in the lunch program; making school lunch a part of the total education program; giving choices within each component of the school lunch; and encouraging schools to eliminate the sale of "snack" foods during the lunch period (64).

#### Avoiding Plate Waste

##### Offer vs Serve

The offer vs serve provision, implemented October 1975 as a part of P.L. 94-105, is to be a flexible approach to menu planning, which will increase student participation and decrease plate waste (48, 65, 66). The American Dietetic Association however, does not support the rewording of the NSLA which allows all the components of the Type A lunch to be "offered" rather than "served" in secondary schools. It is their belief that it is scarcely possible for the school meal to meet one-third of the daily nutritional needs of the students when two of the five menu items can be eliminated at the choice of the student (67).

Others do not feel the Type A lunch and offer vs serve are competitive. "The Type A lunch, when properly prepared and appetizingly merchandized, will be fully consumed," testified William Hartenstein, coordinator of Food Services North Penn School District, Pennsylvania at

oversight hearings on school lunch. In his opinion, a result of the rewording might enable some school lunch directors to stop serving spinach and cauliflower and substitute more popular nutritious foods (68).

The Maryland School Task Force, mandated by Maryland State legislatures by a joint resolution, to study the serving of empty calorie or non-nutritive foods in Maryland schools, has made a recommendation that elementary grade school children have a choice of foods of comparable nutrient value within the Type A meal pattern to provide an opportunity to learn good nutrition skills by practice (69, 70). But many state and local officials contacted through the Comptroller General's office disagreed. They felt that although offer vs serve at the high school level does reduce plate waste, it would have adverse effects on the young children and the overall school lunch program. Those surveyed said that elementary school students have not had enough experience and nutrition education to allow them to select balanced meals, the children would not try new foods, and they would be slow in making selections, causing bottlenecks and long serving lines (71).

#### Fast Food Approach

Some school districts have dealt with plate waste by simulating a fast food restaurant in the school cafeteria (72). Nutrition educators feel this practice creates, reinforces, and perpetuates bad eating habits. Some find it a "lousy" excuse to serve hamburgers and french fries, just to get the students to eat everything. The nutritionists find themselves in a dilemma - Do you serve nutritious foods that students throw away, or

do you serve them hamburgers and other similar foods, which may be less nutritious and may reinforce poor eating habits (65)?

Analysis of Nutritional Value  
of Two School Lunch Meal Patterns

Type A Meal Pattern

The Type A meal pattern for school lunches has been utilized since 1946 with periodic changes to adapt to revisions in the RPA. The meal pattern is based on the "Basic Four Food Groups" to provide approximately one-third to one-half the 1968 Recommended Dietary Allowances (RDA) for major nutrients and calories for children 10-12 years of age. Schools must serve the Type A lunch to meet requirements for Federal cash reimbursements (8).

School lunches can be planned to meet the literal requirements of the Type A pattern and yet fall short of providing one-third of the nutritional recommendations for 10-12 year old children (45, 54). The nutritional quality of the lunch depends on the knowledge of the person using the pattern in planning food combinations that are acceptable to children (45). The nutritive value of the Type A school lunch has been investigated by analyzing the lunches as served to students, analyzed as eaten by students, and in comparison to the alternative to school lunch, the bag lunch or that brought from home.

A pilot study in Iowa, during the 1948 school year, was conducted in a small rural school. The nutritive value of school lunches were calculated by food composition tables. The findings revealed that the adequacy of the lunches decreased as the age of the students increased (73).



Later investigation by the Bureau of Human Nutrition and Home Economics focused on the nutritive value of the school lunch available to the majority of children. Little difference was found between the average calculated values and average analyzed value in the lunches for calories, protein, calcium, riboflavin and fat. Thiamine and ascorbic acid values were both below the RDA's, two-thirds and one-half of the time, respectively (74).

In 1966, a nation-wide study was conducted by the Agricultural Research Service to determine the nutrient content of school lunches as served to students. Three hundred schools participated in the study and it was concluded that the Type A meal pattern, used as designed, could provide sufficient quantities of most nutrients (75 - 78).

In a study of school lunches in Honolulu, the Type A lunch was meeting at least one-third of high school students' recommended allowances except for calories, iron and calcium (79).

In research carried out in North Carolina, meals were chemically analyzed as served to students. All meals were low in calories and a high proportion were low in ascorbic acid and iron (80).

But the Type A regulations do not specify that students like or eat the foods served. The nutritional adequacy of school lunches is more reliably evaluated by the amount of food eaten, rather than the amount of food served. Studies of nutrients actually consumed by students are less common than nutrient analysis of meals served.

In a study conducted in Louisiana, tenth grade students consumed approximately 82 percent of the calories and 84 percent of the protein

served. Data of nutrient intake was obtained by calculating estimated amounts served minus the amount left on plates (81).

Investigators during the 1968 school year categorized the amount of school lunches as "all eaten," "part eaten," and "none eaten". The results revealed that fruits and vegetables were consumed in the lowest proportions by all students. Girls ate less starchy foods than any other food group (82).

A follow-up study to the North Carolina study which investigated school lunches as served analyzed the nutrient consumption of school lunches. Nutrients served and nutrients in the plate waste were determined by laboratory analysis. Nutrients consumed were determined by difference. With a few exceptions, students consumed 80 to 90 percent of the various nutrients which were served (83).

One alternative to school meals, that is lunches brought from home, has been compared to school lunches. Early work found that even with the addition of milk, which may be purchased at school, the quality of packed lunches was low (84). A survey of lunch habits of 80,000 Massachusetts public school children in 1969, revealed that almost three-fourths of the children buying Type A meals in school ate an adequate lunch, while nearly two-thirds of the children not eating Type A lunches had an unsatisfactory meal (85, 86). In a study where the contributions of the school lunch and bag lunches were determined by dietary recall, it was determined that children obtained a significantly higher level of nutrients from school lunches than bag lunches, except for calories

and niacin equivalents. The data showed that students obtained sufficient amounts of protein, calcium, vitamin A, riboflavin, and niacin from the school lunches (87).

These studies reconfirmed that the Type A pattern delivers the nutrients needed by school-aged children. While some lunches failed to meet the goal of one-third the Recommended Dietary Allowances for each nutrient, they should not be automatically classified as poor, since the allowances include margins of safety for most nutrients (45). Determining the nutritive contributions of the school lunch, based on meeting the RDA's for 10-12 year olds has been complicated by the 1974 revisions of the RDA's. There is no longer a separate category for 10-12 year old children (54). Furthermore, obesity and iron deficiency continue to be major problems of school children (10, 88). Consequently, the Type A meal pattern was reevaluated and it was found that, in comparison to other types of lunches standards the Type A:

- ... appears relatively ineffective in achieving the program's nutritional objective. The Type A lunch, as a standard meal served to all participants, does not appear to deal well with diverse nutritional problems. The nutritional impact of the program may be improved by an alternative meal standard, one with more flexibility in the content.
- ... may increase the cost of program lunches which could discourage paying students.
- ... is often presented in a manner which discourages student participation and contributes to food waste (10).

### Nutrient Standard Approach

The nutrient standard menu for school lunches, designed to require minimum levels of nutrients to be present in the meal, was pilot tested because it could offer the following advantages over the Type A: (a) greater menu planning flexibility, (b) increased menu acceptability and less waste, (c) crediting nutrient content in both regular and fortified foods, (d) greater assurance that menus meet nutrient requirements, and (e) reduced cost (89).

Type A supporters have attacked the premise that the meal pattern lacks flexibility in menu planning. In their view, the lunch may take either a hot or cold form. Some schools serve a hot-type dish, a soup and sandwich combination, or even a salad plate lunch that all meet the Type A standard. They maintain that the choices within the Type A pattern give students an opportunity to learn to eat a variety of foods and that adoption of a nutrient standard would do little to solve the problems of plate waste (90 - 92).

Supporters for the development of a nutrient standard for school feeding programs believe the single most important benefit is the direct concern the food manufacturer must have for the nutritive value of the product. With the Type A pattern, most food has been purveyed on the basis of acceptance and/or cost. The burden and responsibility for nutrition has been on food combinations as made by the menu planner, which leaves room for error (45).

To avoid error, one approach to the nutrient standard technique of menu planning involves computer-assistance. This technique would be applicable for those schools having computer services. It optimizes lunch costs within the nutritional requirements of the child nutrition programs (93 - 95).

A second approach to the nutrient standard menu does not require computer assistance at the local level. This technique was developed and tested by Colorado State University and uses an abacus-like device to tally nutrient contributions of the menu. During field tests of this method, food and labor costs were not found to be significantly different from the Type A meals (96). Although differences were small in calculated nutritional value of Type A school lunches and nutrient standard meals, the nutrient standard menus were consistently higher in nutrients (97). Additionally, food service employees and managers preferred the nutrient standard menus because of time saved in ordering, recipe extension, and decreased error (98).

The American School Food Service Association Executive Board has endorsed the nutrient standard approach "as an alternative to menu planning for those school food service programs that have nutritionally trained staff and computer abilities to implement the system". The Board viewed the Nutrient Standard Method as one which could increase the effectiveness of nutrition education efforts and one which could decrease plate waste (99).

### Student Participation

Approximately 25 million school children were participating in the school lunch program in 1972 (31). More current estimates range as high as 26.6 million children (50). The school lunch program is available in almost 93,000 schools (100) yet, the number of children participating represents only 50 percent of all eligible elementary and secondary students (101). Of all school lunches prepared, 30-40 percent of them are free or reduced-price lunches (51).

Participation in the NSLP has been declining slightly or remaining constant, depending on the statistics utilized. Between 1971 and 1975, participation increased among low income children due to an expansion of the reduced-price and free lunches (3). Much of the increase was off-set by a decline in participation of regular priced students. Student participation may be declining due to downward trends in enrollment and the current shift of students from elementary to secondary schools. But shifting enrollment patterns is not the sole reason for students not participating in the lunch program. Many other factors, such as program availability, attractiveness of the lunch program, and changes in lunch prices must be considered (10).

The cost of school lunches increased by as much as 27 percent during the 1972-73 school year (102). Increased food and labor costs were primary reasons for the increased cost of producing school lunches. These increases may have resulted in fewer paying students participating in the program because price increases for food and labor are passed along (103).

Many authorities have expressed a desire to improve participation, but the question remains as to how this can best be achieved. One method for improving participation would be to lower the price of the lunch. However, price is not the sole factor influencing participation; daily participation levels are also affected by non economic factors such as : competitive foods, attitudes of school administration, menu choices, and food preparation (9).

#### Effect of Commodity Distribution on School Lunch

According to legislation dealing with donated commodities, commodity purchases are made to remove temporary surpluses of commodities from the market to help stabilize prices to farmers, to find useful outlets for surplus commodities that might otherwise be wasted, and to widen the market for farm production by encouraging domestic consumption (1, 17). Although it could not be determined by the General Accounting Office (GAO) how the program affected the farm and market price of food, or if the NSLP was effective as a price support mechanism, the lunch program was believed to have "probably strengthened the overall demand for farm products". At the same time, indications were found that the lunch program's agricultural emphasis may conflict with the effective achievement of the program's nutritional objectives. Most of the dissent surrounding

the agricultural impact of the lunch program dealt with administrative practices rather than legislative requirements (10).

In a separate study by the Comptroller General it is stated that the "purchase and distribution of commodities for the school lunch program by the Department of Agriculture goes a long way toward meeting the needs of school districts. However, some improvements are needed in commodity purchases and distribution to make the school lunch program more effective." School districts in the study felt they were being offered commodities that "had limited appeal, were in amounts excess to their needs, were not in desired form or size, and were delivered at times unsuitable to district needs." Others felt that utilizing commodities in the school lunch program was an extra burden and increased plate waste because of the food's limited appeal (71).

Kansas is the only state that receives cash in lieu of commodities. As of November 1974, Kansas school districts are paid a cash payment per meal served. Cash payments are updated annually to reflect changes in the Consumer Price Index. Officials at the state and local levels of the school lunch program in Kansas favor the cash over commodity donation. The cash program has eliminated inconveniences, reduced non-food costs, eliminated the need to deal with foods of limited appeal, and allowed more food variety (71).



In a comparison study between Kansas and Oklahoma, no significant difference in cost of producing a Type A lunch was found between cash-in-lieu of commodities or use of federally donated commodities. However, Oklahoma, in this case, had the additional expenses incurred in handling, shipping, storage, and procurement costs which were not incurred in the cash-in-lieu of commodities program in Kansas (104).

Concern has been expressed over the quality of nutrition provided to children when commodities are not utilized in the school lunch. There is also the economic impact to consider if all states adopted a cash program and if the cash-in-lieu of commodities would benefit rural and urban school districts alike (105).

Presently, the commodities program is usually handled at the state level by a different agency than the one which administers the school food service program. New methods of administration seem feasible. Researchers contracted by the United States Department of Agriculture (USDA), have a two-fold proposition: (a) the commodities be distributed to contract vendors who in turn decrease food costs to the schools they serve, and (b) contractual arrangements be made between state agencies and/or school district and food companies to process the commodities into readily usable or shelf-stable products such as bread, pasta, and mayonnaise with subsequent distribution to schools (106). Another similar concept is for the commodity distribution agency for a state or a multi-state regional area to serve as a centralized broker for individual school districts (107).

### Lack of Nutrition Education

When the NSLA was introduced in Bill form it contained two titles. Title I was approved and it is the basic legislative structure for the school lunch program. Title II of the Bill contained provisions for nutrition education. This second title was deleted in conference before final passage of the Act in 1946 (108).

Since 1946, there have been proposals before Congress which would have authorized nutrition education as a part of the National School Lunch and Child Nutrition Acts. None of these received much serious attention (108).

Despite Congress's refusal to fund nutrition education, nutrition professionals have continued to speak out for the need. Recommendations to improve nutrition education have appeared in numerous professional and public documents, including: The White House Conference on Food, Nutrition, and Health (35), the Senate Select Committee's Dietary Goals (109), the National Advisory Council on Child Nutrition (62), the American Dietetic Association (110, 111), and the National Nutrition Consortium (112).

The Nutrition Foundation conducted surveys in every state and territory in mid-1977. Results indicated that nutrition had not been given a clearly delineated role in the standard curriculum in many states. Responsibility for nutrition education had not been assigned to any one office in several cases (113).

Bertlyn Bosley, in a presentation before the American Association for the Advancement of Science, felt nutrition education was a relatively new field in 1946. In her view, the goal of nutrition education is a simple one: to establish good food habits which will result in intelligent food selection day by day, throughout life. She cautioned nutritionists and educators that they "should not lose sight of the real goal of nutrition education in their eagerness to disseminate information" (114).

According to E. Neige Todhunter, of Vanderbilt University, nutrition education is universally needed regardless of income, geographic location, cultural, social or economic background. There is no instinct that guides man to select those foods which meet the nutritional needs of the body. Nutritional awareness is not inherited. People of all ages must be taught what foods to eat and why (115).

Helen Ullrich, Executive Director of the Society for Nutrition Education, maintains that survival food and nutrition education should be considered an investment in the productivity of our nation. Nutrition education is a preventive health approach, where the individual has an understanding of the basic nutrition principles and is willing to put that understanding to work in making wise food choices (116).

There is general agreement among nutritionists that the earlier nutrition education is introduced to children at the elementary grade level, the better (117-121). This premise is based on the belief that dietary practices established during childhood influence life time food habits (122). Even though a school aged child is not at the most critical stage in terms of physiological need, he is at the most crucial stage

in cognitive development. Therefore, the school system is not only a logical starting point, but it represents a critical stage when education in making nutritionally healthy food choices should be introduced (118).

The relationship of nutrition education to the school's lunch program has been repeatedly identified (92, 108, 121, 122-125). The lack of nutrition education has been cited as a major factor in plate waste (108). According to the American School Food Service Association, "Nutrition education is the weakest link in the chain of activities needed to make school food service a part of the educational team." A team approach to nutrition education, involving school administrators, students, teachers, school food service personnel, allied health professionals, and industry has been called for by the Association (92).

#### National School Lunch and Child Nutrition Act Amendments of 1977

Congress passed H.R. 1139 on November 10, 1977. It was signed by President Carter and is now called P.L. 95-166, the National School Lunch and Child Nutrition Act Amendments of 1977. It should not be surprising that plate waste, student participation, nutrition education and commodity foods were issues dealt with by Congress in amending the Act. Public Law 95-166 amends the Acts by revisions of the special milk program and school breakfast program, expanding of the "offer vs serve" system to junior high schools, authorizes USDA to purchase school lunch program agricultural commodities at market price without regard to surplus or

price supports and allows schools to have the option of refusing up to 20 percent of their donated foods and receive other items in their place when available, and authorizes the Secretary of Agriculture to carry out a program of nutrition education as a part of food service programs for children conducted under the Act and authorizes pilot projects in school food service programs. Section 10 and 19 are of particular interest (126).

#### Section 10

This section authorizes pilot projects having potential to improve the child nutrition programs by making them more "efficient, helpful, economical, and reliable." Three types of projects were specifically mandated: (a) to provide testing of cash-in-lieu of commodities, (b) to experiment with the use of Federal extension agent conducting nutrition education in the schools, and (c) to test new procedures for streamlining or reducing federal paperwork involved in the school food service program (126).

USDA's Food and Nutrition Service published proposals requiring states to establish school commodity advisory councils as a requirement of P.L. 95-166. The state level panels are intended to help improve the selection and distribution of commodities to schools. Among other things, the proposed rules would require the councils to meet annually and make recommendations to the state education agency. Membership would have to include representatives from a large urban school, a small rural school, a private school, the Parent-Teachers Association (PTA), plus a high school student (127).

### Section 19

For the first time, funds have been made available to states for nutrition education coordinated with the school lunch program. These funds were appropriated primarily because it was thought that nutrition education could ease the problems of "plate waste". With these newly approved funds, nutrition education programs are to be designed to result in less plate waste and increased participation by school children in the school lunch program (52, 128). Funds to implement this program will be available to each state on the basis of 50 cents per school child per year. No state will receive less than \$75,000 per year. The funding is available under approval of P.L. 95-166 through the 1979-80 school year. In 1980, funds will be appropriated by the Congress, according to the needs and accomplishments of the previous two years of funding (126).

The purpose of Section 19 is to encourage the development of comprehensive nutrition information and education programs to be made available to children who are participating or eligible to participate in the school lunch program. The nutrition education programs are to use the school lunch room as a learning laboratory. Funds are to create opportunities for children to learn about the importance of the principles of good nutrition in their daily lives and how these principles are applied in the school cafeteria. The nutrition education programs shall include, but not be limited to, (a) student nutrition education, (b) training of school food service personnel, (c) teacher inservice and instruction in sound nutrition practices, and (d) development and use of

classroom materials and curricula (126).

Congressional sponsors of the nutrition education provisions asked the Department of Agriculture to hold a conference to consult with persons in the field before regulations were issued. President Carter was emphatic that as many people as possible should be involved in the decision-making. The "nutrition conference" was initially scheduled for early December, one month after the bill's passage. The conference was postponed until January 5 and 6, 1978. About sixty USDA officials, private nutritionists, school food service representatives and state and federal education agency officials met in Washington to help sift through difficult issues involved in implementing Section 19 (129).

One of the main points agreed upon by those attending the two day USDA workshop was the need to focus the program quickly and effectively, establishing a respectable record in time for Congressional review for funds for 1980. Concerns voiced at the workshop include: (a) the problem of targeting funds, should monies be appropriated to a few strong programs that could be carefully tracked, administered, and evaluated or should monies reach all school children; (b) qualifications for state nutrition coordinators; (c) state needs assessments; (d) state plans; (e) evaluations of state plans; (f) advisory committees to the state committees in making plans, and (g) state administration of the program (129).

USDA officials published interim regulations in the March 24, 1978 Federal Register. It enabled states to receive start-up funds, hire nutrition education coordinators, and begin state needs assessments and annual plans. Nutrition coordinators were responsible for budgeting and conducting the needs assessment, developing the state plan, evaluating its implementation, coordinating nutrition education with related state programs, and working with parents and the "community at large" (130).

A second set of regulations, appearing in the June 9, 1978 Federal Register, listed requirements for conducting a state-wide needs assessment and for preparing and submitting a state plan to spend the 1978 fiscal monies, which had to be obligated by September 30, 1978. The detailed needs assessment was to identify "not only data on current activities but also a description of the problems and needs in 15 areas and whether training or materials would help alleviate the identified problems." The categories included: (a) nutrition education and training needs of children, teachers, and school food service employees; (b) existing government and privately funded activities and their successes or failures; (c) agencies responsible for nutrition education; (d) available funding for such activities; (e) the competency in nutrition of teachers and school food service workers; (f) "major child nutrition-related health problems" in each state; (g) and problems encountered by teachers and food service staff in teaching nutrition education, preparing nutritious meals, and coordinating the two areas.



The regulations emphasized the use of existing and available information for the assessment (131).

Final regulations for implementing the nutrition education and training program for schools appeared in the May 15, 1979 Federal Register. The rules will govern the program through its current expiration date of September 30, 1980. The final rules changed the state plan requirement from a one-time annual needs assessment to an ongoing needs assessment to be used to "evaluate how effective (state's) activities are in reaching their goals and objectives." (132)

State plans for fiscal 1980 were to be submitted by May 15, 1979. This May 15 deadline gives planners only two month's time from the final submission date for fiscal 1979 plans. FNS said they would accept the state plans until August 31, 1979. However, officials will not be able to give final approval to the fiscal 1980 plans until Congress indicates how much it will appropriate for the program (132).

State education agencies had until September 1978 to conduct a needs assessment and submit plans to USDA. South Dakota, Montana, Wyoming, Vermont, New Mexico, Missouri, and Oregon did not submit 1978 applications in time to be funded. Hawaii received funds for hiring a nutrition education coordinator and conducting a needs assessment but lost the rest of its entitlement (133).

Applications for fiscal 1979 allocations were due in USDA's Food and Nutrition Service's Regional offices on March 15, 1979. Hawaii and Montana joined the program for the first time. South Dakota, Wyoming, Vermont, New Mexico, Missouri, and Oregon bowed out of the optional program for the second year in a row (134).

Chapter IV  
Doubts About Implementation  
And Effectiveness of The  
Nutrition Education Program

Introduction

Nutrition education interests are "beginning to worry" about funding for the nutrition education programs made possible in Section 19 of P.L. 95-166. Funding for the program after the initial two years is subject to the regular Congressional appropriations process (135). Nutrition educators find themselves in an "era of accountability", where tax-supported programs must demonstrate their worth (136). Dr. Paul Lachance, Rutgers University, foresees utter chaos in the spending of the nutrition education entitlement funds and feels the result will be a "catastrophic fiasco." (137). Joan Gussow, with the Nutrition Program, Teachers College, Columbia University, is not optimistic either. In her view, there is very little likelihood that nutrition education efforts, confined to the schools, will do much to produce broad dietary changes, including the reduction of plate waste in school lunch program (138). It may seem theoretically simple to combine the nutritional knowledge with the nutritional needs of school children and to utilize the school lunch program as a means of bringing the two together. But what is theoretically possible may be indeed difficult to put into practice (115).

### Elimination of Plate Waste:

The immediate goal of the federal nutrition education entitlement funds is to eliminate plate waste in school lunch programs (52, 128). The ultimate goal of nutrition education is to change eating habits in such a way as to improve health (139). Nutrition educators, in order to show the effectiveness of school nutrition education programs, have been evaluating school children's eating habits in school lunch programs. Evaluation of eating behavior of students who have participated in nutrition education programs, be it a food group or a nutrient based approach, are not showing significant application of information gained in food selection or consumption (140-144).

It has been shown that while nutrition knowledge is influential, it is not the only factor associated with food choices. Children acquire attitudes and food preferences from a wider social environment than just nutrition education at school (140, 145-150). Nutrition education in the classroom or school cafeteria, by itself, is not going to produce the outcomes of reduced plate waste or increased student participation in the school lunch program. Student attitudes toward the lunch program are powerful determinants in either outcome. The "eat it, it's good for you" image of school lunch carries a negative connotation for today's school children (82). Students in a 1973 survey did not feel that the school lunch had much impact on their nutritional well-being or health (151).

In addition to the attitudes that students may have towards the school lunch program, school lunch officials may be trying to utilize an eating pattern that is outmoded and not re-inforced at home or in the outside community (110). Eating habits in the United States are changing. New lifestyles are changing food consumption patterns (152).

Furthermore, researchers in California have reported that school lunch participation has little validity as a measure of nutrition education. They found that the employment status of the mother and the perception of a friend's food perception related more closely to school lunch participation (153). To be successful in meeting Congressional intent for Section 19, those factors which influence eating habits which in turn influence plate waste and school lunch participation, and those which are specifically associated as outcomes of nutrition education must be identified.

Student involvement in the school lunch program and food of acceptable quality will probably be determined to influence the outcome of student participation and plate waste. Legislation will do little to effect either issue as it related to food quality, food merchandising, and lunchroom environment. Local school districts can solve their own declining school lunch participation by involving their students in the program (154-159). In a study conducted at USDA, it was concluded that when an effort is made to improve the quality of food, cater to student preferences, provide pleasant surroundings, and make the food

more attractive, the results always show a rise in participation (151).

Improved Health: Community and  
Parent Reinforcement

Improvement of nutritional well-being and overall health is the outcome which should be specifically associated with the success of a nutrition education program. Ultimately, this means a change in current eating habits. The role of the home and community environment in reinforcing food behavior has been identified (140, 145-150). The long term effectiveness of an educational effort, where classroom nutrition education skills are carried over into daily living skills, depends on the reinforcement in the students daily lives. Pressures in the home and in the outside world will continue to influence food habits, despite educators' best efforts.

Regardless of the extent of legislation passed effecting nutrition education and the NSLP, the success of either program, jointly and individually, rests with the local community (101). One of the most important developments in the next decade will be the direct involvement of parents in the educational process (160). Accordingly, parents, community members and school administrators must recognize the school lunch program and the corresponding nutrition education component not only as having educational value but one which contributes to the health and well-being of their children.

Parent interest in schools is not new. Citizen participation in education had a come back in the mid-1960's with the creation of Federal programs like Title I and Head Start that required parent advisory councils in order for local programs to receive funding (161). A 1974 Gallup Opinion Poll of Public Attitudes Toward Education showed that 64 percent of the parents of public school children wanted more information about their school and how to become involved (162). In a survey conducted in 1976 by Gallup pollsters, 82 percent of the respondents were willing to serve on a citizen advisory committee dealing with their school's needs. Sixty-seven percent of the respondents would like to see the local school board have a greater responsibility in running the schools with less emphasis from state and federal authorities (162). There is widespread acceptance that parents should work closely with the schools if students are to reach their full educational potential (160).

The Institute for Responsive Education supports and encourages community participation in educational decision-making for two reasons. First is their belief that people affected by decisions of institutions and government agencies should have a voice in making those decisions. The second is that lasting and constructive change is most likely if those who are affected by the change are involved in the planning and decision-making. Better collaboration between schools and communities is the way to increase the likelihood of significant, purposeful change. Their simplified message is: Parents and community members working with the school can make a difference (164).

Most of the money for schools comes from local property taxes (164). Federal funds currently pay about 33 percent of the total cost of the school lunch program. State and local governments contribute roughly 23 percent, and the remaining 44 percent comes from student payments (3). Monitoring of an educational program, such as school lunch, supported by local tax dollars and children's lunch cost, is appropriate for parent and citizens groups.

Three categories of parent/citizen involvement in schools can be identified: (a) a single issue group (crisis oriented); (b) school affiliated groups (Parent-Teacher Associations); and (c) special interest groups that operate independently of the school. No single approach for involvement is best for all communities, nor is one approach sufficient. A variety may be needed to reach the goals. The community can become involved in their schools at the request of the school board, by citizen initiated groups, or through volunteering (161).

The climate is favorable for parent and public interest in nutrition. If properly tapped, this interest could develop into involvement into the school children's nutrition education, reinforcement of the principles therein, and support for their school lunch program. A study conducted by Yankelovich, Skelly, and White, Inc. reported that public interest in food, diet, and health is growing (165). A similar theme is echoed in a survey conducted in 1979 for General Mills. Over half those responding wanted more emphasis on eating three meals a day. Forty-one percent want a decrease in snacking. Forty-five percent wanted more emphasis on eating a good breakfast. Twenty-five percent

of the respondents claimed they were trying to eat more nutritiously and watch their caloric intake more than they did in the previous year (166).

The Children's Foundation, a national, non-profit, anti-hunger organization, monitors federal child nutrition programs and offers technical and organizing support to community groups, parent groups, and individuals who wish to implement or improve local programs for school food service. The Foundation makes suggestions for involvement: public information campaigns, public service announcements for local radio and television, special meetings, and advisory committees (167). Such community-based, multi-media campaigns and community outreach have been shown to be both cost effective and efficient in reaching a mass audience in Ecuador (168).

Communities can make major changes in their school lunch program without large federal or state grants (169, 170). Such changes not only bring about increased student involvement and participation in the school lunch program but can act to reinforce nutrition principles being taught in classrooms. Parents have become involved in classroom nutrition activities, too. In some schools parents actively promote and participate in the school lunch program. Some school parents are important in monitoring plate waste (171-176).

Parent and community attitudes toward nutrition education and the need for a viable school lunch program can substantially effect the operational characteristics of the school food service program and the educational priorities it receives (45). Furthermore, when parents support the school lunch program it is probable that attitudes of the



students would be more supportive. A good school lunch program is an excellent opportunity to positive public relations. Such a program creates an impression that affects the way children approach their school work and the way their parents feel about the school system (167, 176).

A possible starting point for community involvement in the school lunch program and nutrition education would be working with groups already affiliated with the schools. The National Congress of Parents and Teachers (PTA) for most of its existence, has shunned controversy. Local PTA groups used to devote their energies to bake sales and carnivals to raise money for school equipment, and they left running the school to professional educators. Since 1972, the by-laws of the PTA have required the organization to "seek to participate in the decision-making process establishing school policy." (101). At the 1978 convention in Atlanta, the National PTA resolved to encourage its members to urge nutrition education in the schools. It also recommended that the PTA encourage schools to offer nutritional meals and involve students and parents. Despite federal and state activity, it was thought that the most effective way for citizens to insure that their children received the nutrition they need, was to work directly with their local school (177, 178).

USDA has awarded \$98,000 to the National Congress of Parents and Teachers for a joint campaign to improve and expand school feeding programs. Twenty states will be targeted for grants to develop cooperative model programs aimed at upgrading school food service facilities, conducting nutrition education, and making other improvements. The 6.2 million-

member PTA will provide the volunteers for the programs (179).

Improved Health: Assessment to Validate  
Nutrition Education and School Lunches

Defining the significance or impact of the lunch program within the school district relies on measurable results. The impact of the programs on the children's health is vital for public support of the program.

Presently there is no evaluation of the school lunch program's effectiveness concerning the health of school-aged children (10). Assessment of the nutritional status of children has several components: (a) clinical signs; (b) anthropometric measurements; (c) biochemical and (d) clinical tests. The use of three screening tests, height and weight, hemoglobin or hematocrit, and dental checks might be made for planning the school food service program(s) and nutrition education (180).

The mechanics of assessing food habits and health status must be dealt with calmly. Every child should be seeing a physician or public health official prior to the entrance into school for immunizations. Questionnaires or interviews with the parent(s) at that time could be done to determine the food habits and attitudes of the children and families. If anemia is a health concern which needs attention in the school district, hematocrit or hemoglobin tests could be performed during the same visit.

School nurses or public health officials already take height and weight measurements in most school districts. Perhaps at that same time

dental screening could be performed by dental hygienists. Again, parents, or community members could be involved in the mechanics of getting children in the right place at the right time and charting the results of the screenings.

According to the GAO report, "The School Lunch Program - is it Working?" an evaluation of the school lunch program, as it influences the health and well-being of school children, should focus on the diet variables which are considered to be the most strategic to the NSLP goals. In addition, the GAO has recommended that the evaluation process should monitor the influence of the program on selected health conditions. Examples suggested included the incidence and duration of illness, hypertension, and tooth decay (10).

The 1977 Food and Agriculture Act gave USDA the lead agency responsibility for the conduct of agricultural and human nutrition research. The newly created Human Nutrition Center, further emphasizes USDA's recognition of the need to assess the impact of nutrition intervention programs, such as school lunch. Current research priorities of USDA include issues closely aligned with those individual and school district-wide lunch programs must consider. The research will include determining what people are actually eating and how their eating habits influence their health, and how the government intervention program and nutrition education program affect health, nutritional status, and performance (181).

Three other variables, other than the elimination of plate waste, will make it difficult to show positive results of Section 19 funds within

the short time frame of two years. State coordinators and their staffs may find inadequate curriculum materials. Secondly, there is a lack of agreement on teaching approaches. These two factors alone could undermine the solidarity of a state's plan, resulting in sporadic implementation of programs based on two or three schools of thought, rather than a unified approach. Thirdly, a decision must be made as to whether nutrition should be taught as a separate and equal educational component or whether it should be integrated into an already existing curriculum.

#### Curriculum Materials

State planners have been urged in interim regulations to make use of those nutrition education materials that are already available (139). They will face a nearly impossible task in selecting a course of action that can be validated and found successful. Critiques of a few curriculum guides and a government investigation have made it clear that states will have difficulty implementing currently available materials "as is".

From a sampling of curriculum guides used to teach nutrition, it was concluded that there are weak links between the nutrition concepts, lesson objectives, and learning activities. Seventy-seven percent of the time, lesson objectives were not written in measurable or observable terms. Curricula lack sufficient practice and only "occasionally" were learning experiences application or problem solving exercises. Teacher-dominated instruction was utilized in 86 percent of the guides,

with lectures and class discussion utilized 73 percent of the time. Evaluation procedures were excluded from 44 percent of the guides and many guides suggested only very general evaluative ideas, with specific procedures not being included. Ironically, Section 19 stressed that the school cafeteria should be used as a learning laboratory, a place to practice and reinforce nutrition education in the classroom. Yet in the guides evaluated, only 14 percent cited the school food service as a resource (182).

Reports prepared for the Subcommittee on Domestic Marketing, Consumer Relations, and Nutrition of the House of Representatives by the Library of Congress, the American Association of Advertising Agencies, and the US General Accounting Office (GAO), provided evidence that while there is a profusion of pamphlets and brochures available, most have limited circulation and, according to the critics, have low appeal. In their opinion, Federal nutrition publications need to be made more graphic, persuasive, motivating and understandable (183).

In the General Accounting Office (GAO) report, "Informing the Public About Nutrition: Federal Agencies Should Do Better", it was noted that few nutrition materials developed by the federal government had been formally evaluated before or after distribution. "In general, HEW and USDA have little knowledge of the effectiveness of their nutrition information activities in terms of the audience reached, message retention, or changes in eating habits" (184).

### Teaching Approaches

There is agreement that nutrition education is a worthwhile activity. Beyond that, differences arise in the most appropriate methods and approaches (154). The majority of nutrition educators are currently using either a food groups or a nutrient based approach to teach nutrition.

The Four Food Groups have been used as a basic teaching tool by nutrition educators for the past fifty years (185, 186). The guide currently in use is the Basic Four Food Grouping system which was published by the United States Department of Agriculture in 1956 and was based on the 1953 Recommended Dietary Allowances (187). The minimum number of servings from each of the food groups provide a "foundation" for an adequate diet (188). The intent of the Four Food Groups is to promote good nutrition by eating specified amounts of food from each group - and if such food selections are made (and eaten) - the result is an eating pattern capable of assuring adequate nutrition (189, 190).

In a series of nutrition programs by the Dairy Council of California, utilizing the Four Food Groups, students have been successful in mastering basic nutrition skills. Learners achieve success at the A or B grade level. The "Big Ideas" series is learner-focused and provides the learner with survival nutrition skills. The lean programming is based on giving the students only the information needed to acquire the desired skill: how to plan and evaluate a day's food intake based on the Four Food Groups criteria (191-196).

A film series, "Mulligan Stew," is another Four Food Groups approach of teaching nutrition. In an evaluation of the film series, "Mulligan Stew" was found to be an effective approach in teaching students about nutrition. The film series, suitable for viewing on television, has been compared in quality to "Sesame Street" and "Electric Company" (141).

The Four Food Groups have been criticized as outmoded and ineffective (139). It is also criticized as inadequate because it is so totally "undiscriminating" in its classification that anything can masquerade as a part of any group (138). Other nutritionists feel the food grouping system: "Over simplifies" food decisions, is inadequate when considering ethnic foods, places too much emphasis on animal source products, is ill-designed in meeting current nutritional problems, and most importantly, the Four Food Groups are boring" (197). Moreover, educators are concerned that students aren't applying the factual information to their actual food choices (198). It has been reported that students are "turned-off" by the Four Food Groups and that their learning capacities are not fully utilized. Many have cited the need for a new teaching approach, or one with more flexibility (185, 186, 198-200). It has been suggested that since many people are familiar with the Basic Four, that it be modified, rather than develop a totally new guide (201).

The nutrient based teaching approach became more popular in the early 1970's when results from a household food consumption survey indicated a decline in nutrient intake (190). Other recent trends which indicate a need for new or redesigned nutrition education approach

include: (a) changes in scientific knowledge of nutrition and food-diet-health interrelationships; (b) changes in foods available to consumers, and (c) increasing diversity of lifestyles, values and food practices (152).

A nutrient based, rather than a food group approach, is viewed by many as an effective way to teach students to make responsible food choices, given contemporary eating patterns and the increased ability of students to cope with scientific knowledge (202). According to researchers of Colorado State University, the abacus-centered nutrient based approach "awakens" the students interest in learning good nutritional practices. It is colorful, unique, and allows for student initiative and decision-making. Furthermore, it can be integrated into biology or other curricula (190).

But not all nutrition educators feel an all-nutrient based approach is appropriate or better than a food group approach. The greatest problem with food groups is the emphasis focused on the number of groups rather than reasons why the foods were grouped in a particular manner. The shortcoming of teaching nutrients is that in the marketplace, people buy foods, not nutrients (189). Therefore, a more suitable alternative might be a food and nutrient approach. A working knowledge about nutrients and an understanding of foods results in a rational basis for making food choices (137, 202).

Research being conducted at Pennsylvania State University is an attempt to design and implement a nutrition education program with total impact. Phase I was the process of identifying, validating, and setting of



priorities for learner objectives to be used in establishing the nutrition content for the curriculum (203). Phase II attempted to determine if there was a consensus among a large group of nutrition educators for the competencies identified in Phase I. Results indicate the primary focus of the nutrition curriculum should be in the area of personal decision-making for one's own health (204). Curriculum guidelines based on this research are being tested.

#### Integrated Curriculum

State nutrition coordinators will also face implementing the nutrition curriculum once it is selected. An integrated or interdisciplinary approach has been advocated (170, 205-207). The philosophy is that schools have limited resources available to initiate new programs, therefore it is cost effective. Integrating nutrition into an already established area of study maximizes existing materials and professional resources without major re-scheduling changes for the school. Many of the curricula evaluated by the Society for Nutrition Education were interdisciplinary (182).

All nutrition educators are not elated with integrated nutrition education. When nutrition is taught in another skill area, are students practicing nutrition skills or are they working on arts, crafts, spelling, or math? Are the needed nutrition skills getting lost under the guise of another subject? Katherin Cooper, (208) feels that nutrition is competing for learner time, therefore, that time should be used efficiently and nutrition should be taught.

## Chapter V

### Future of School Lunch

#### Introduction

The National School Lunch Program (NSLP), is a joint venture of the Federal government, State governments, schools, children and their parents (101). The legislative history of the NSLP shows that federal assistance is a supplement, rather than a substitute for state and local efforts. Congressional reports and hearings emphasize the prime purpose of the NSLP is to encourage states to assume increasing financial and administrative responsibility for the program (209). Even though the future of the school lunch program is dependent on legislation, when speculating on the future of the NSLP, to consider both the community support and the possible legislative changes.

#### Community Support

Five limiting factors constrain school districts from participating in the school lunch program. First is the political acceptance of the program by school administrators and the community. Probably the stereotyped application of school lunch being a "welfare or poverty program" has had the most negative effect on public attitude (17, 210). Secondly, is the lack of a management tool for school districts to base their decisions on in selecting the most appropriate food service(s) compatible for their particular existing facilities, or in planning new

facilities. Thirdly, is the cost of running a school lunch program. Fourth is the resistance to the lunch program by teachers who resent the supervision demands of the program (69). And fifth is the lack of concrete data on the educational value of the program and how it relates to school performance (211).

#### Legislative Changes Affecting School Lunch

The school lunch program is that of an ever-changing program, depending entirely on the legislation passed next. Lobbyists, representing food products from the potato growers to carbonated drink vendors, the American Dietetic Association, the National Restaurant Association to the American School Food Service Association will plead yearly for changing or maintaining the direction of school lunch.

The school lunchroom is one of the most underdeveloped areas in American education (6, 92). Dr. Paul LaChane, former Director of the Rutgers School Food Service Effectiveness Research Project, has suggested that a national trust fund be established to rebuild decayed U. S. schools that would include suitable and distinct food service dining rooms and separate physical education facilities (107). A New York State school administrator feels a re-examination of the entire NSLP is so vital that a White House conference, "Nutrition for Youth", be called with cafeteria managers, school administrators, teachers, students, and experts in nutrition contributing to put the school lunch program in proper perspective (212).

#### Meal Pattern Changes

On a less dramatic scale, the Type A meal pattern will be undergoing changes. New school meal patterns were first proposed in 1975 to

bring school meal patterns into conformance with the 1974 version of the Recommended Dietary Allowances. Interim regulations were published in the August 22, 1978, Federal Register to give schools the option of using the proposed meal patterns during the 1978-79 school year (213).

USDA contracted with the National Institute for Community Development of Arlington, Virginia, for analysis of the results of the school testing of the meal pattern done by the Department (213). USDA's controlled test included (a) an evaluation of the effect of the proposed changes in the school meal pattern requirements; (b) demonstration projects for students, faculty, and parent involvement in the school lunch program; (c) demonstration projects for controlling sugar, fat, and salt in school lunches; and (d) demonstration projects for providing one-third of the RDA for energy in school lunches (214).

Final regulations will be published in two parts for a variety of reasons: (a) results from the USDA field tests are not completed; (b) significant changes are to be made in the 1979 revisions of the RDA, which may in turn affect the regulations; (c) school food service personnel will need training to fully implement the new regulations and to guarantee compliance with meal requirements; and (d) the areas of administration and cost impacts need more investigation. Schools will be required to implement provisions in the August 17, 1979 Federal Register at the beginning of the 1979-80 school year. The regulation amends the school lunch program regulations which effects several changes including (a) expansion of the list of bread alternates; (b) requiring schools to serve lowfat milk, skim milk or buttermilk; (c) requires that school food authorities promote activities to involve students and parents and (d)

recommendations were made in menu planning which included serving iron rich foods, vitamin A foods at least twice a week, limit eggs to three a week, inclusion of vitamin C rich foods, and keeping fat, sugar, and salt at a moderate level and for schools who do not offer a choice of foods no one form of meal or meal alternate more than three times a week. In addition, USDA is removing the term "Type A" from the lunch pattern (214).

### Banning of Competitive Foods

A second proposal deals with competitive foods in the school. USDA's Food and Nutrition Service proposed rules in the April 25, 1978 Federal Register, which would implement a provision of the 1977 National School Lunch and Child Nutrition Act. USDA finds that "the sale of low nutrient per calorie density food prior to, or during meal periods may contribute substantially to increased plate waste, reduced student participation, and a general decline in the consumption of nutritious foods in schools." (215)

While comments submitted on the proposed rules are supportive, many food industry and vending machine interests oppose them. Opponents argue that the federal government has taken away rights of the state and local authorities to make their own choices. USDA postponed the final rules banning the sale of competitive foods so that they could "take the time necessary to consider thoroughly all the points raised." (216). Even though USDA withdrew the proposal, it announced three public hearings on the issue to be held January 6 at Nashville, Tennessee, February 6, at Detroit, Michigan, and February 13, 1979 at Seattle, Washington (217).

July 6, 1979, USDA published its first official definition of "junk food" that is, "foods of minimum nutritional value". USDA moved to ban the sale of these foods until the last lunch is served. Foods fitting into

the competitive foods or "foods of minimum nutritional value" category contain less than 5 percent of the recommended daily allowances for any one of eight basic nutrients in one serving or a portion of 100 calories. The standard definition of "foods of Minimal nutritional value" would eliminate soft drinks, most frozen ice desserts, gum and such candies as sourballs, jellies, and licorice. The regulations would not eliminate the sale of potato chips, ice cream, or chocolate bars. However, food manufacturers can circumvent the 5% U.S. RDA requirement by increasing the serving size or fortifying the product with enough of any of the eight basic nutrients to meet the 5% U.S. RDA requirement for at least one of the eight nutrients. The proposed standard could, unwittingly, encourage indiscriminate fortification of foods (218). The regulation would take effect in roughly 98 percent of the schools that serve federally subsidized lunches on January 1, 1980. USDA officials are hoping schools and vending machine distributors will offer more fruits, vegetables, fruit juices, and nuts to children as snacks (219).

Possible Influences of  
Future Legislation  
Concerning Nutrition Education

"Nutrition Education: Directions for the 1980's"

A national invitational conference, "Nutrition Education: Directions for the 1980's" was held in Bethesda, Maryland, September 27-28, 1979. Sponsors for the conference were the Departments of Agriculture and of Health, Education, and Welfare, the White House, the Federal Trade Commission, and the Society for Nutrition Education. Drafts of recommendations for future nutrition education needs were developed prior to the conference in four target audiences, including pregnant women, children and adolescents. It

was recommended that nutrition education should promote attitudinal behavioral changes rather than merely disseminate information. Furthermore, all nutrition education curricula for preschool through secondary school must be redesigned and refocused around the target audiences' level of understanding. Evaluations mechanisms must be built into the curricula and the results used to improve future programs.

#### NET Programs to be Evaluated

USDA has awarded a contract for \$449,929 to Abt Associates of Cambridge, Massachusetts to assess the Department's Nutrition Education and Training (NET) Program. The company will determine what factors are associated with successful nutrition education projects. A data base will be compiled describing NET-funded and other nutrition education and training activities (221).

## Chapter VI

### Conclusion

#### Introduction

Public Law 95-166 (126), with the inclusion of Section 19, began a new era for the NSLP. The service portion and the education portion were to become integrated. Not only are school children being offered a nutritious meal but they should be learning to apply principles of sound nutrition through practice and reinforcement in the school cafeteria.

#### School Lunch: A Public Relations Problem

USDA and the FNS have a public relations task before them. Those factors which limit the effectiveness and acceptance of the NSLP, ie: political and social acceptance (17, 210), the need for an adequate management or decision-making tool (69), the cost of running the program (69), resistance to the program by teachers (69), and the lack of concrete data on the educational value of the program and how it relates to school performance (211), must be addressed. In addition, school districts and individual schools must work to solve their own plate waste and low student participation in the school lunch program. Even if USDA finds the literature on plate waste in the NSLP anecdotal, journalistic and not up to scientific standards, it is, in part, the literature to which parents and community members are frequently exposed. Regardless of the attitudes or opinions held by USDA or the FNS, school districts must deal with the problems that concern the public. And to deal effectively with plate waste and low student participation, it will mean student, teacher,



parent, and community involvement, high quality food, reasonable catering to the food preferences of children, and appetizing and welcoming cafeteria environment and merchandizing of the school lunch program.

#### Nutrition Education

The administration of a successful nutrition education curriculum for a school district requires a close liaison with classroom teachers and school food service personnel. Implementing a nutrition education program into the school district that shows measurable results as demonstrated through improved clinical screening, anthropometric measurements, and changes in eating habits to the betterment of the children's health will be more challenging.

Nutrition educators will be challenged to account for their program. Nutrition education programs, funded as they currently are in Section 19, under the amendments to the National School Lunch and Child Nutrition Acts of 1977 (126), must be proven worthwhile if they are to receive additional funding.

It is vogue these days to say that a nutrition education curriculum is comprehensive, integrated, multi-disciplinary, coordinated, and sequential. However, it seems that the majority of newly developed filmstrips, singing cassettes, graphic posters, and colored boxes stuffed with a menagerie of materials are being produced without solid educational technology. Educational material suppliers should be able to show valid and reliable testing data for their nutrition materials which show to what

extent the objectives of improved health and wise food choices are being achieved by the children.

The state and federal nutrition educators, who are responsible for implementing the nutrition education programs mandated by P.L. 95-166 (126) have an ominous task. They are responsible for implementing nutrition education programs which would produce measurable results in terms of decreased plate waste and increased student participation in the school lunch program. Unfortunately, nutrition education by itself, will not cure those problems. In addition, their time was limited in selecting and implementing the nutrition education materials, many of which do not show measurable results in changing food behavior. Therefore the emphasis might have been during the first two years of the program to spend the money rather than getting the taxpayers money's worth.

Nutrition educators have a challenge before them. Nutrition education concerns must develop and endorse a shared philosophy and teaching approach. The process of developing learner-verified nutrition education materials that show measurable results, with motivational features for changing food habits built-in, needs serious attention. There is a need for nutrition education which is targeted at specific audiences or grade levels which is not too sophisticated and presented in a manner that is intelligible and appropriate, i.e.: less focus on nutrients and more emphasis on food choices. Attention must be focused on the quality of nutrition education rather than the quantity. Creating such a nutrition education technology that shows measurable results in wise food choices, i.e.: developing nutritionally healthy lifestyles, will require the combined

talents of nutritionists and behavioral scientists.

School Lunch and Nutrition Education:  
Meeting Community Needs

The positive impact of a community based school lunch program and nutrition education program on the health and well-being of school children will be changes in eating habits and improved nutritional status and overall health. The school lunch program and the corresponding nutrition education component must be planned to meet the specific needs within a school district and be reinforced by the families and community. The program should meet the national standards and objectives, but the initiative and content must be localized. District planners must consider: (a) providing an opportunity through the school lunch program for children to have adequate food intake to allow them to grow normally and to avoid hunger so that they can concentrate on their studies and allow opportunities for practice and reinforcement of nutrition skills learned in the classroom; (b) providing nutrition education in a manner so that children develop good food habits and adequate knowledge and initiative to change food habits as needed through their lifetime; (c) involving the community and students' families in the program to increase their support for school lunch and to reinforce nutrition education at home, and (d) programs must be planned considering the related health and nutritional status conditions in the community.

Two primary factors need to be assessed at the local level to design a school lunch program and nutrition education curriculum that meets the specific needs of the school district or community. These are the assessment of food habits and attitudes of the children and their families and the nutritional status and overall health and well-being of the children.

### Cited References

1. Cronan, M. 1962. The School Lunch. Chas. A. Bennett Co., Inc. Peoria, Ill.
2. Gunderson, C. W. 1971. The National School Lunch Program - Background and Development. FNS-63. Food and Nutrition Service, USDA. Washington D.C.
3. Van Egmond, D. 1974. School Foodservice. AVI Publishing Co., Westport, CT.
4. P.L. 320, 74th Congress, August 24, 1935. 641 Stat. 750-793.
5. Food and Nutrition Services, 1971. USDA. National School Lunch Program - 25 Years of Progress. U.S. Govt. Prtg. Ofc. Washington, D.C.
6. Bard, B. 1968. The School Lunchroom: Time of Trial. John Wiley and Sons. New York.
7. Natl. Res. Council. 1943. Recommended Dietary Allowances. Reprint and Circular Series., No. 115, Washington, D.C.
8. P.L. 396, 79th Congress, June 4, 1946, 60 Stat. 231.
9. Farley, V. 1971. We've come a long way. Sch. Lunch J. 20(6):10.
10. U.S. Comptroller General. 1977. The National School Lunch Program - Is It Working? Report to Congress. U.S. General Accounting Office. Washington, D.C.
11. U. S. Comptroller General. 1973. Progress and Problems in Achieving Objectives of the School Lunch Program. Report to Congress. United States General Accounting Office. Washington, D.C.
12. USDA. 1972. Food Buying Guide for Type A School Lunches. Prepared by Nutrition and Technical Services Staff, Food and Nutrition Service, and Consumer and Food Economics Research Division, Agriculture Research Service and the National Marine Fisheries Service, U. S. Dept. of Commerce, Publ. No. 0100-1454, Supt. of Documents. U. S. Govt. Prtg. Office, Washington D.C.
13. P.L. 439, 81st Congress, October 31, 1949, 792 Stat. 1051-1062.
14. Talcott, B. L. 1975. Prepared statement before the Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor, House of Representatives. 94th Congress. 1st session. H.R. 3736. The National School Lunch and Child Nutrition Act Amendments of 1975. March 4. U. S. Govt. Prtg. Ofc., Washington, D.C. p. 147.

15. Jones, F. 1975. Prepared statement before the Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor. House of Representatives. 94th Congress. 1st Session, H.R. 3736. The National School Lunch and Child Nutrition Act Amendments of 1975. March 4. U. S. Govt. Prtg. Ofc. Washington, D.C. p. 92.
16. P.L. 823, 87th Congress, October 15, 1962, 76 Stat. 944-947.
17. Congressional Quarterly, Inc. 1965. Congress and the Nation. Vol. 1, 1945-1964, Washington, D.C. p. 929.
18. U. S. Senate. Senate Select Committee on Nutrition and Human Needs. 1976. Compilation of the National School Lunch Act and Child Nutrition Act of 1966 with Related Provisions of Law and Authorities for Commodities Distribution. U.S. Govt. Prtg. Ofc. Washington, D.C.
19. P.L. 780, 87th Congress, October 9, 1962. 76 Stat. 779.
20. P.L. 642, 89th Congress, October 11, 1966, 80 Stat. 885-890,
21. U.S. Senate. Senate Select Committee on Nutrition and Human Needs. 1976. Legislative History of the Senate Select Committee on Nutrition and Human Needs. Committee Print. Washington, D.C.
22. Kotz, N. 1969. Let Them Eat Promises: The Politics of Hunger in America. Prentice Hall. Englewood Cliffs, N.J.
23. Congressional Quarterly, Inc. 1969. Congress and the National Vol. II, 1965-1968. Washington, D.C. p. 587.
24. Citizen's Board of Inquiry into Hunger and Malnutrition. 1968. Hunger, U.S.A. Beacon-Press, Washington, D.C.
25. Fairfax, J. ed. 1968. Committee on School Lunch Participation. Their Daily Bread. McNely-Rudd Printing Service, Inc., Atlanta, Georgia.
26. Coles, R. 1973. Still Hungry in America. New American Library. New York, New York.
27. Agric. Res. Serv. 1969. Dietary Levels of Households in the United States, Spring 1965. USDA Household Food Consumption Survey. 1965-66. Report No. 6.
28. U.S. Dept. of Health, Education and Welfare. 1972. Ten-State Nutrition Survey in the United States, 1968-70. Publications Nos. HSM 72-8129 through 72-8134. Govt. Prtg. Ofc., Washington, D.C.

29. Owen, G. M., Kram, K. M., Garry, P. J., Lowe, J. E., and A. H. Lubin. 1974. A study of nutritional status of preschool children in the United States. 1968-70. Pediatrics 53(4-Part II supplement): 507.
30. U. S. Dept. of Health, Education and Welfare. 1974. Preliminary Findings of the First Health and Nutrition Examination Survey. United States. 1971-72: Dietary Intake and Biochemical Findings. Publication No. HRA 74-1219-1. Govt. Prtg. Ofc., Washington, D.C.
31. U. S. Senate. Senate Select Committee on Nutrition and Human Needs. 1973. Dollars for Food. Committee Print. 93rd Congress, 1st session. Govt. Prtg. Ofc., Washington, D.C.
32. P.L. 302, 90th Congress May 8, 1968, 82 Stat. 117-119.
33. Nixon, R. 1971. Special message to end hunger in America. No. 187. May 6, 1979. Public Papers of the Presidents of the United States. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 350.
34. General Services Administration. 1971. Office of the Federal Register and Records Service. United States Government Organizational Manual. Supt. of Documents, Govt. Prtg. Ofc., Washington, D.C. p. 261.
35. White House Conference on Food, Nutrition and Health 1970. Final Report. U.S. Govt. Prtg. Ofc., Washington, D.C.
36. P.L. 248, 91st Congress, May 14, 1970, 84 Stat. 207-214.
37. P.L. 207, 91st Congress, March 12, 1970, 84 Stat. 51.
38. P.L. 295, 91st Congress, June 30, 1970, 84 Stat. 336.
39. P.L. 233, 91st Congress, April 17, 1970. 84 Stat. 199.
40. McGovern, G. 1971. Senate Select Committee on Nutrition and Human Needs. U.S. Senate. 93rd Congress. Part 7 - Crisis in the School Lunch Program. Opening Statement. September, p. 1747.
41. P.L. 153, 92nd Congress, November 5, 1971, 85 Stat. 419-420.
42. P.L. 32, 92nd Congress, June 30, 1971. 85 Stat. 85-86.
43. P.L. 422, 92nd Congress, September 26, 1972. 86 Stat. 724-731.
44. Lukazer, M. 1973. The National School Lunch Program in 1973: Some Accomplishments and Failures. Nutr. Rev. 3(12):385-388. Dec.
45. Lachance, P. 1976. Prepared statement and related material presented before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Oversight Hearings on the School Lunch Program. June 30, U.S. Govt. Prtg. Ofc., Washington, D.C. p. 336.

46. Congressional Quarterly, Inc. 1975. Congressional Quarterly Almanac. Vol. 30, 1974, Washington, D.C. p. 503.
47. P.L. 326, 93rd Congress, June 30, 1974. 88 Stat. 286-287.
48. P.L. 105, 94th Congress, October 7, 1975, Stat. 511-530.
49. Congressional Quarterly, Inc. 1976. Congressional Quarterly Almanac. Vol. 31, 1975, Washington, D.C. p. 669.
50. Perkins, D. C. 1976. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Oversight Hearings on the School Lunch Program. June 24. Govt. Prtg. Ofc., Washington, D.C. p. 273.
51. Heimstra, S. J. 1977. Economic impact of the national school lunch program. Sch. Foodservice Res. Review. 1(1):11.
52. Miller, G. 1976. Legislation for nutrition: it depends on you. J. of Nutr. Educ. 8(1):8.
53. Goodling, W. 1975. Testimony before the Subcommittee on Elementary, Secondary, and Vocational Education of the Committee on Education and Labor. House of Representatives. H.R. 3767. The National School Lunch and Child Nutrition Act Amendments of 1975. March 4. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 25.
54. Voichnick, J. 1977. School lunch in Chicago. J of Nutr. Educ. 9(3):102.
55. Mullen, W. 1977. School lunches: Why Johnny won't eat. Chicago Tribune. Feb. 20. pp. 1, 14.
56. Mullen, W. 1977. Schools can lead the kids to food but can't make them eat. Chicago Tribune. Feb. 21, pp. 1, 8.
57. Mullen, W. 1977. School lunches: prescription for malnutrition. Chicago Tribune. Feb. 22, pp. 1, 8.
58. Mullen, W. 1977. School lunches nutrients based on outdated U.S. handbook. Chicago Tribune. Feb. 23, p. 5.
59. Bonventre, P. and E. Sciolino. 1977. Why Johnny "doesn't" or "won't" eat. Newsweek. March 21. p. 52.
60. Brenton, M. 1978. Special report on school lunch. It's twelve o'clock. Do you know what your child is eating? Redbook, May, p. 45.
61. Liquor, P. and P. Ravich. 1977. The food fiasco: nutritional neglect in the New York City lunch program. In conjunction with the Nutrition Program, Teachers College, Columbia University and the Food Law Project, Community Action for Legal Services. Washington, D.C.



62. The National Advisory Council on Children. 1977. 1976 Annual Report. Food and Nutrition Service, USDA.
63. The Rutgers Conference. 1973. Sch. Foodservice. J. 27(1): 25.
64. Ostenso, G.L. 1977. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1977. March 17. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 405.
65. Options in Education 1977. Food in the schools Part 1. Program No. 75. George Washington Univ. Institute for Educational Leadership. Natl. Public Radio. April 26. Washington, D.C.
66. Offer vs serve: Take it or leave it. 1977. Sch. Foodservice J. 31(10):49.
67. American Dietetic Association. 1977. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch Program and Child Nutrition Act of 1977. March 17. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 434.
68. Hartenstein, W. J. 1976. Testimony before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1975. January 30. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 327.
69. Nutrition task force makes recommendations. 1977. Sch. Foodservice J. 31(1):20.
70. Hall, R. L. 1977. Testimony before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1977. March 17. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 450.
71. U.S. Comptroller General. 1977. The Impact of Federal Commodity Donations on the School Lunch Program. Report to the Committee on Education and Labor. House of Representatives.
72. Type A served fast foods style. 1977. Sch. Foodservice J. 31(8):19.
73. Augustine, G., McKinley, M. K., Laughin, L., James, E. L., and E. Eppright. 1950. Nutritional adequacy, cost and acceptability of lunches in an Iowa school lunch program. J. Am. Dietet. A 26:654.



74. Meyer, F. L., Brown, M., and M. Hathaway. 1951. Nutritive value of school lunches as determined by chemical analysis. J. Am Dietet. A. 27:84.
75. Murphy, E. W., Koons, P. C., and L. Page. 1969. Vitamin content of Type A school lunches. J. Am Dietet. A. 55:372.
76. Murphy, E. W., Page, L., and P. C. Koons. 1970. Lipid components of Type A school lunches. J. Am. Dietet. A. 56:504.
77. Murphy, E. W., Page, L., and B. K. Watt. 1970. Major mineral elements in Type A school lunches. J. Am Dietet. A. 57:239.
78. Murphy, E. W., Page, L. and K. Watt. 1971. Trace minerals in Type A school lunches. J. Am Dietet. A. 58:155.
79. Maretzki, A. N., Chung, C., and S. Doucette. 1971. An Evaluation of the School Lunch Program of Five Public High Schools in Honolulu, Hawaii: Part I. Attitudes of High School Students Toward Their School Lunch Program. Part II. Beyond the Federal Regulations for the Type A School Lunch: Nutrients and Plate Waste. Am. Sch. Food Serv. Assn. Denver, CO. 34 p.
80. Head, M. K., Weeks, R. J., and E. Gobbs. 1973. Major nutrients in the Type A lunch program. J. Am Dietet. A. 63:620.
81. Lewis, H. 1972. Paper presented at annual meeting. Am. Dietet. Assoc. October.
82. Douchette, S. W. 1971. What's wrong with school lunch? School Lunch. J. 25:42.
83. Head, M. K., and R. J. Weeks. 1975. Major nutrients in the Type A lunch. II. Amounts consumed by students. J. Am. Dietet. A. 67:356.
84. Boysen, S. C. and R. A. Ahrens. 1972. Nutrition instruction and lunch surveys with second graders. J. Nutr. Educ. 4:172.
85. Callahan, D. L. 1971. Focus on nutrition. You can't teach a hungry child. Part I. Sch. Foodservice J. March p. 25.
86. Callahan, D. L. 1971. Focus on nutrition. You can't teach a hungry child. Part II. School Foodservice. J. Sept. p. 26,
87. Emmons, L., Hayes, M., and D. L. Call. 1972. A study of school feeding programs. II. Effects on children with different economic and nutritional needs. J. Am. Dietet. A. 61:268.
88. White, P. L. 1976. Why all the fuss over nutrition education? J. Nutr. Educ. 8:54.
89. Frey, A. L., Harper, J. M., Jansen, G. R., Crews, R. H., Shigetomi, C. T., and B. J. Lough. 1975. Comparison of Type A and nutrient standard menus for school lunch. I. Development of a nutrient standard method (NSM). J. Am. Dietet. A. 66:242.

90. Moss, M. A. and B. Sheahan. 1970. Meal requirements for lunch offer flexibility. Sch. Foodservice. J. 25(8):50.
91. Baton, M. 1971. Seven choices for lunch. Sch. Foodservice, J. 25(8):57.
92. DeZeeuw, M. L. 1977. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1977. March 15. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 333.
93. Ostenso, O. 1972. New concepts in child nutrition programs: Nutrient standard for school feeding, computer-assisted meal planning. In proceedings of the National School Food Service Conference, Rutgers Univ., New Brunswick, N.J. p. 45.
94. Harper, J. M. and G. R. Jansen. 1973. Nutrient standard menus. Food. Technol. 27:48.
95. Jansen, G. R., and J. Harper. 1974. Nutritional aspects of nutrient standard menus. Food Technol. 28:62.
96. Frey, A. L., Harper, J. M., Jansen, G. R., Crew, R. H., Shigetomi, C. T. and J. B. Lough. 1975. Comparison of Type A and nutrient standard menus for school lunch. Part II. Management Aspects. J. Am Dietet. A. 66:249.
97. Jansen, G. R., Harper, J. M., Frey, A. L., Crews, R. H., Shigetomi, C. T. and J. B. Lough. 1975. Comparison of Type A and nutrient standard menu acceptability. J. Am Dietet. A. 66:254.
98. Shinn, J. E. and J. N. Loyd. 1977. Comparison of Type A and computer assisted nutrient standard menus. School Foodservice Res. Rev. 1(1):30.
99. Bulletin. 1976. Sch. Fd. Serv. J. 30(5):4.-
100. Lunch at School. 1979. Food and Nutrition 9(3):6.
101. National Dairy Council. 1974. Child Nutrition Programs. Dairy Council Digest. 45:1. January-February.
102. Rising cost threatens school program. 1973. Education Daily. 6(199):5.
103. Hansen, S. 1976. Testimony before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives Oversight hearings on the school lunch program. June 30. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 334.

104. Erickson, D. B. 1977. Cost analysis of providing Type A school lunches. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1977. March 10. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 114.
105. Gephardt, R. 1977. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1977. March 10. U. S. Govt. Prtg. Ofc., Washington, D.C. p. 43.
106. Castillo, J. D. and E. Ries. 1972. Processing contracts for donated commodities. In proceedings of the National School Food Service Conference. Rutgers Univ. New Brunswick, N.J. p. 36.
107. Lachance, P. 1977. The U. S. school food service program - successes, failures, and prospects. Annuals of the New York Academy of Sciences. 300:411.
108. Martin, J. 1977. Statement before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor. House of Representatives. Hearings on the National School Lunch and Child Nutrition Act of 1977. March 15. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 318.
109. Senate Select Committee on Nutrition and Human Needs. 1977. U.S. Senate. Dietary Goals for the United States. 2nd Edition.
110. American Dietetic Association. 1973. Position paper on the nutrition education for the public. J. Am. Dietet. A 62(4):429.
111. American Dietetic Association. 1978. Position paper on the scope and thrust of nutrition education. J. Am. Dietet. A. 72(3):302.
112. National Nutrition Consortium, Inc. 1974. Guidelines for a national nutrition policy. Bethesda, Maryland.
113. Stanley, R. W. 1979. Nutrition education efforts: Survey findings. J. Nutr. Educa. 10(1):10.
114. Bosley, B. 1947. A practical approach to nutrition education. J. Am. Dietet. A. 23:304.
115. Todhunter, E. N. 1969. Approaches to nutrition education. J. Nutr. Educ. 1(2):1.
116. Ullrich, H. D. 1974. Nutrition education is survival education. J. Nutr. Educ. 6(3):84.
117. Sipple, H. 1971. Problems and progress in nutrition education. J. Am. Dietet. A. 59:18.

118. Hill, M. M. 1972. School lunch--a tool for nutrition education. *Wld. Rev. Nutr. Dietet.* 14:257.
119. Cooper, K. and C. Go. 1976. Analysis of nutrition curriculum guides at the K-12 level. *J. Nutr. Educ.* 8(2):62.
120. Mayer, J. 1977. Prepared statement before the Senate Select Committee on Nutrition and Human Needs. Trends in the school lunch program. U. S. Senate. Hearings on Food Quality in Federal Food Programs. Sept. 30. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 66.
121. Gershoff, S. 1977. Testimony before the Senate Select Committee on Nutrition and Human Needs. U.S. Senate. Hearings on Food Quality in Federal Food Programs. Sept. 30. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 66.
122. Hinton, M. A. 1964. School lunch: a laboratory for developing good food habits. *Sch. Lunch. J.* 18:38.
123. Scheuer, J. 1977. Statement before the Subcommittee on Domestic Marketing, Consumer Relations, and Nutrition of the Committee on Agriculture. House of Representatives. Hearings on Nutrition Education. Sept. 27. U.S. Govt. Prtg. Ofc., Washington, D.C. p. 37.
124. Mayer, J. 1977. Statement on Nutrition Education. Hearings before the Subcommittee on Domestic Marketing, Consumer Relations and Nutrition of the Committee on Agriculture. House of Representatives. 95th Congress. 1st Session. Sept. 27. p. 37.
125. Todhunter, E. N. 1970. School feeding from a nutritionist's point of view. *Am. J. Pub. Health.* 60(12):2302.
126. P.L. 166, 95th Congress. November 10, 1977. 91 Stat. 1325.
127. Federal Register. 1979. Dept. of Agric. FNS, 7CFR Part 210. National School Lunch Program. State Advisory Councils. 3410-30-M. Vol. 44(4):1379.
128. Vaden, A. 1978. Editorial Comment. *School Foodservice Res. Rev.* 2(2):71.
129. Community Nutrition Institute. 1977. USDA seeks help on nutrition education. *CNI Weekly Report.* 7(50):4.
130. Federal Register. 1978. Dept. of Agriculture. FNS. Subchapter A - Child Nutrition Program Part 227 - Nutrition Education and Training Program. Regulations for P.L. 95-166. 43(58):12297-12299.
131. Federal Register. 1978. Department of Agriculture. FNS, Title 7, Chapter 2, Subchapter A - Child Nutrition Program. Part 227, Nutrition Education and Training Act. Interim Regulations. 43(112):25132-25135.

132. Community Nutrition Institute. 1979. FNS publishes regs on nutrition education. CNI Weekly Report. 9(25):7.
133. Community Nutrition Institute. 1977. Ten states lose funds for nutrition education. CNI Weekly Report. 7(39):3.
134. Community Nutrition Institute. 1979. Community groups hit nutrition education plans. CNI Weekly Report. 9(13):5.
135. Community Nutrition Institute. 1978. FNS moving on nutrition education. CNI Weekly Report. 8(45):2.
136. Ullrich, H. D., 1978. The era of accountability. J. Nutr. Educ. 10(4):148.
137. Lachance P. 1977. U.S. School foodservice: problems and prospects. School Foodservice Res. Rev. 2(2):73.
138. Gussow, J. 1979. Can industry afford a healthy America? CNI Weekly Report. 9(22):4.
139. Ullrich, H. D. 1977. Goals for nutrition education. J. Nutr. Educ. 9(4):148.
140. Hendel, G. M., Burk, M. C., and L. A. Lunch. 1965. Socioeconomic factors influencing children's diets. J. Home Ec. 57:205.
141. Jenkins, S., Stumo, M., and J. Voichnick. 1975. Evaluation of nutrition film series "Mulligan Stew." J. Nutr. Educ. 7(1):17.
142. Baker, M. A. 1973. Influence of nutrition education on 4th and 5th graders. J. Nutr. Educ. Spring. p. 55.
143. Head, M. K. 1974. A nutrition education program at three grade levels. J. Nutr. Educ. 6:65.
144. Shovic, A. M and G. Jennings. 1979. Effects of nutrition education on nutrition knowledge, vegetable acceptability and plate waste. Sch. Foodservice Res. Rev. 3(1):21.
145. Hinton, N. and E. G. Eppright. 1963. Eating behavior and dietary intake of girls 12-14 years old. J. Am. Dietet. A. 43:233.
146. Litman, T. 1964. The views of Minnesota school children on food. J. Am. Dietet. A. 45:433.
147. Robison, R. H. 1971. Changing food habits of Canadian children. J. Can. Home Ec. 21:14.
148. Emmons, L. and M. Hayes. 1973. Nutrition knowledge of mothers and children. J. Nutr. Educ. 5:134.
149. Bayer, N. R. and P. M. Morris. 1974. Food attitudes and snacking patterns of young children. J. Nutr. Educ. 6:131.

150. Schwartz, N. E. 1975. Nutrition knowledge, attitudes and practices of high school graduates. J. Am. Dietet. A. 66:28.
151. Sheabeck, A. 1974. Why won't some teenagers eat? Sch. Foodservice. J. 28(1):52.
151. Light, L. 1978. Nutrition education: policies and programs. Nutrition Program News. USDA. Jan.-April. Washington, D.C.
153. Yperman, A.M. and J. A. Vermeersch. 1979. Factors associated with children's food habits. J. Nutr. Educ. 11(2):72.
154. Chedwidden, G. 1971. Ideas for promoting participation. Sch. Foodservice. J. 25(10):48.
155. Community Nutrition Institute. 1973. Selling Type A lunches. CNI Weekly Report. 3(30):1.
156. Florida Dept. of Citrus. 1978. The YAC 'How to' Kit of Materials. Lakeland, FL.
157. Jenkins, D. 1976. Student restaurant provides golden opportunity. Sch. Foodservice J. 39(7):31.
158. Garret, P. and A. Vaden. 1978. Influence of student-selected menus on participation, plate waste, and student attitudes. Sch. Foodservice Res. Rev. 2(1):28.
159. Garvelick, R. H. 1978. Kids: the school lunch customer. Schl. Foodservice Res. Rev. 32(9):73.
160. The Gallop Poll - Public Opinion. 1978. Vol. II. 1972-77. Scholarly Resources, Inc. Wilmington, Delaware, p. 1199.
161. National School Public Relations Association. 1977. Linking Schools and the Community. Education U.S.A. Special Report. Arlington, VA.
162. The Gallop Poll - Public Opinion. 1978. Vol. I. 1972-77. Scholarly Resources, Inc., Wilmington, DE. p. 500.
163. The Gallop Poll - Public Opinion. 1978. Vol. II. 1972-77. Scholarly Resources, Inc. Wilmington, DE 866.
164. Davis, D. ed., 1976. Schools Where Parents Make A Difference. Institute for Responsive Education. Boston, MA.
165. Yankelovich, Skelly, and White, Inc. 1978. Presentation tables: Nutrition. A study of consumer attitudes and behavior. A national probability study conducted for Woman's Day. April 1.
166. Yankelovich, Skelly, and White, Inc. 1979. Family health in an era of stress. Conducted for General Mills, Inc. Minneapolis, MN.
167. The Children's Foundation. 1978. Barriers to School Breakfast. Washington, D.C.



168. Mannoff International, Inc. 1975. Using Modern marketing techniques for nutrition education: Ecuador. Manoff International, Inc., New York.
169. Farm fresh produce from field to plate. 1977. Sch. Foodservice. J. 31(4):42.
170. Rich, L. 1978. How MUNCH changed lunch at Oakham. Am. Educ. 14(8):24.
171. Jensen, D. D., and Killmer, D. and C. T. Jenson. 1976. School lunch and the community. Food and Nutrition News. 6(5).
172. Take a parent to lunch. 1978. Sch. Foodservice. J. 32(4):17.
173. Getting involved: school foodservice is reaching community. 1978. Sch. Foodservice. J. 32(8):72.
174. Nutrition week opens community doors. 1979. Sch. Foodservice. J. 33(4):22.
175. Parents can make a difference. 1979. Sch. Foodservice. J. 33(4):28.
176. Bettelheim, B. 1977. Food in the Schools. Part II. Options in Education. Program No. 76. May 2. National Public Radio and Institute for Educational Leadership. George Washington Univ. Washington, D.C.
177. Junk foods, additives, sugar...what do your kids eat at school? 1978. PTA Communicator. August. Chicago, IL.
178. PTA shares common child nutrition concerns with ASFSA, USDA. 1978. Sch. Foodservice. J. 32(10):14.
179. Community Nutrition Institute. 1979. PTA Campaign. CNI Weekly Report. 9(23):8.
180. Eisner, N. and L. B. Callan. 1974. Dimensions of School Health. Char. A. Thomas. Springfield, IL.
181. USDA. 1979. Food and Nutrition for the 1980's: Moving Ahead. Comprehensive Plan for Implementing the National Food and Human Nutrition Research and Education and Information Programs. Washington, D.C.
182. Go, C. 1976. National Nutrition Education Clearing House. Monograph No. 1. An Analysis of Selected Curriculum Guides Used for Nutrition Education in Grades K-12. Society for Nutrition Education. Berkley, CA.
183. Virginia Polytechnic Institute. 1977. Summary. An Analysis of the content and readability of nutrition publications. Submitted to the Subcommittee on Domestic Marketing, Consumer Relations and nutrition of the Committee on Agriculture. House of Representatives. Hearings on Nutrition Education. Sept. 27, October 6, and Nov. 7. U. S. Govt. Prtg. Ofc., Washington, D.C. p. 738.

184. Community Nutrition Institute. 1978. GAO faults agencies on nutrition education. CNI Weekly Report. 7(4):8.
185. Alhstrom, A. and L. Rasanen. 1973. Review of food grouping systems in nutrition education. J. Nutr. Educ. 5:13.
186. Hertzler, A. and H. Anderson. 1974. Food guides in the United States. J. Am. Dietet. A. 64:19.
187. Page, L. and E. Phipard. 1957. Essentials of an Adequate Diet, Facts for Nutrition Programs. USDA. Home Economics Research Report. No. 3, Washington, D.C.
187. Hill, M. and L. Cleveland. 1970. Food guides - their development and use. USDA. Nutrition Program News. July-October. Washington, D.C.
189. Lachance, P. 1972. A point of view. J. Nutr. Educ. 4(2):72.
190. Meyers, L. D. and G. R. Janson. 1977. A nutrient approach in the fifth grade. J. Nutr. Educ. 9(3):127.
191. Peterson, E. 1977. Little Ideas - an early childhood education program. Dairy Council of California. Sacramento, CA.
192. Neidermeyer, F. C. and M. H. Moncrief. 1975. Primary graders study nutrition. Elem. Sch. J. 75:304.
193. Neidermeyer, F. C. and M. H. Moncrief. 1977. Comprehensive nutrition instruction for upper elementary school children. Dairy Council of California. Sacramento, CA.
194. Neidermeyer, F. C. and H. Sullivan. 1977. Teaching nutrition to teenagers. Dairy Council of California. Sacramento, CA.
195. Shortridge, R. 1976. Learner success or failure. J. Nutr. Educ. 8(1):18.
196. Fisk, D. 1979. A Successful Program for Changing Children's Eating Habits. Nutr. Today 14(3):6.
197. Riggs, S. 1977. Consumers service notice: a new hunger for knowledge about nutrition. Institutions. 81(4):50.
198. Poolton, J. 1972. Predicting the application of nutrition education. J. Nutr. Educ. 4:110.
199. Leverton, P. 1974. What is nutrition education? J. Am. Dietet. A. 64:17.



200. King, J. C., Cohenour, S. H., Corruccini, C. G., and P. Schneeman. 1978. Evaluation and modification of the basic four food guides. J. Nutr. Educ. 10(1):27.
202. Brown, G., Wyse, B. W., and R. G. Hansen. 1979. A nutrient-density nutrition education program for elementary schools. J. Nutr. Educ. 11(1):31.
203. Sherman, A. R., Lewis, K., and H. Guthrie. 1978. Learner objectives for nutrition education curriculum Part I. Identification of priority ranking. J. Nutr. Educ. 19(2):63.
204. Barnett, J. J. and M. Barnca. 1978. Learner objectives for a nutrition education program. Part II. Factor analysis. J. Nutr. Educ. 10(2):65.
205. Sodowsky, J. D. 1973. Inservice - Nutrition education for teachers. J. Nutr. Educ. 5(2):139.
206. Grogan, J. 1978. Teacher in-service for nutrition education - an interdisciplinary approach in the school system. J. Nutr. Educ. 10(3):119.
207. Lyghtner-Kirckhofer, A. 1978. Nutrition education and research in a comprehensive health model for elementary schools. Sch. Foodservice Res. Rev. 2(1):41.
208. Cooper, K. A. 1976. Color the peas green? J. Nutr. Educ. 8(1):4.
209. Wells, G. O. 1958. Policies of the national school lunch program. J. Am. Dietet. A. 34:508.
2110. Paige, D. 1972. The school feeding program: an underachieved. J. Sch. Health. 42:392.
210. Pollitt, E. Gersovitz, M., and M. Gargiula. 1978. Educational benefits of the United States school feeding program: a critical review of the literature. Am. J. Pub. Health 68(5):477.
212. Lyman, L. 1979. The National School Lunch Program: boon or boondoggle? Phi Delta Kappan. Feb. p. 436.
213. Community Nutrition Institute. 1979. FNS again delays new meal patterns for school feeding. CNI Weekly Report. 9(18):1.
214. Federal Register. 1979. Dept. of Agric. FNS. 7CFR, part 210. National School Lunch Program; Nutritional Requirements. Final regulation. 44(161):48149-48157.
215. Community Nutrition Institute. 1978. USDA proposed junk food ban for school lunch rooms. CNI Weekly Report. 8(17):1.

216. Community Nutrition Institute. 1978. Junk food ban stirs comments. CNI Weekly Report. 8(21):6.
- 217 Community Nutrition Institute. 1978. USDA sets hearings on junk food issue. CNI Weekly Report. 8(50):2.
218. Federal Register 1971. Dept. of Agric. FNS. 7 CFR, Parts 210 and 220. National School Lunch Program and School Breakfast Programs. Proposed rules. 44(131):40004-40014.
219. Limit on schools' sale of junk foods proposed. 1979. Wall Street Journal. July 6. 64(4):21.
220. Federal Register. 197. Dept. of Health, Education and Welfare. National Nutrition Education Conference: Directions for the 1980's. 44(155):46928-46946.
221. Contract Award to Study NET Programs. 1979. SNE Communicator. 10(3):5. Sept.

AN ANALYSIS OF THE NATIONAL SCHOOL LUNCH AND NUTRITION  
EDUCATION PROGRAMS: A PROPOSAL FOR A COMMUNITY BASED APPROACH

by

BARBARA ANNE YENZER

B. S., Kansas State University, 1974

-

---

AN ABSTRACT OF  
A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Foods and Nutrition  
College of Home Economics

KANSAS STATE UNIVERSITY  
Manhattan, Kansas  
1980

In the United States, school food programs got off to a slow start in the early 1900's. Until the 1930's there was little federal involvement. During the depression, however, the federal government played a major role in the development and expansion of school lunch programs through donation of surplus commodities and providing funds for employment in school lunch related jobs. World War II brought this heavy federal involvement to a halt: all available cash, food and manpower sent into the war effort. Following the war, the National School Lunch Act (NSLA) was passed to relieve the post-war surplus commodities situation and, for reasons of national security, to produce healthier soldiers for the future. The Act set up the National School Lunch Program (NSLP). It provided federal assistance to states in terms of cash, food, food service equipment, and cash reimbursements funds for administrative expenses. In return, states were to keep good records and guarantee that meals would meet minimum nutritional standards. The NSLP underwent little change for twenty years.

During the 1960's interest in the NSLP became closely aligned with the growing social concerns of that period. Widespread awareness of hunger and malnutrition resulted in the passage of legislation which greatly expanded nutrition services to children.

In the mid-1970's the pendulum swung again as a result of news media exposed plate waste, food of low quality, and student dissatisfaction with school lunches. Congressional hearings and private and university affiliated research investigated the nutritional value of school lunches,

the decline in participation, rising prices, the effect of commodities distribution, the lack of nutrition education and sought to find solutions to these problems. Amendments to the National School Lunch and Child Nutrition Act of 1977 included a provision for nutrition education programs with the intent to combat plate waste and declining participation. However, nutrition experts believe a heavy reliance on nutrition education to solve these problems could be a serious error. They believe that other factors such as, food quality, attitudes of family and friends, cafeteria facilities, and student involvement contribute more significantly to these problems than ignorance of nutrition. Additionally, serious problems may arise in the implementation of nutrition education programs due to inadequate curriculum materials and lack of agreement on teaching approaches.

The NSLP and the nutrition education program, made possible by a 1977 amendment to the National School Lunch and Child Nutrition Acts, are beset with a number of serious problems, and the future characteristics are uncertain. Possible changes which will affect school lunch are an alteration of present meal patterns and banning of competitive food sales. Nutrition education efforts in the schools also face possible changes spurred by the conference, "Nutrition Education: Directions for the 1980's" and an evaluation on USDA's Nutrition Education and Training (NET) programs.

Perhaps the most significant factor in the future success of the NSLP and concurrent nutrition education is community involvement. Heightened general nutrition consciousness coupled with increased parent interest in the schools could result in better nutrition for all children.

Overall, the image of the NSLP needs to be improved. It needs to be seen as a valuable nutrition aid for every child, not just the poor. Nutrition educators also have a challenge ahead of them. Nutrition education concerns must develop and endorse a shared philosophy and teaching approach, one that is geared to school children's developmental levels and needs. Nutrition education programs, unless they are thoroughly researched and learner-verified, may be worthless. Nutrition educators, who plan and implement nutrition curricula, may find that school children need less factual knowledge of nutrients and more emphasis about developing nutritionally healthy lifestyles.