CHANGES OBSERVED IN THE HABITS AND ATTITUDES OF HIGH SCHOOL STUDENTS

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INTRODUCTION

Americans have long been proud of the democratic tradition of their nation; that is, that people themselves have an opportunity to determine the conditions under which they live, and that everyone may have an opportunity to develop to his fullest capacities. In a democracy, civil liberties, legal justice, and economic independence are traceable to the doctrine that every individual must be given a full and free opportunity to develop his capacities, to explore his interests, and to meet his needs without the hampering influences of political institutions.

The democratic state must rear citizens infused with this democratic ideal and willing and able to share responsibility in such a state. It must become aware of the part it plays in molding the character structure of its members and make clear the kind of citizens it requires to carry on its work. Are there some outstanding demands which a democratic state makes on its members, and, if so, how should that knowledge influence the kind of training to which young people are subjected?

Democracy means emancipation of the individual for independent effectiveness; that he be free to make his own decisions on the basis of his own experience and his observation of others. Even in a matter involving life itself, the individual must make his own decision. But, the individual must have the necessary wisdom, the ability to reason correctly, and certain goals of intrinsic worth, or his freedom to make decisions and act independently may clearly lead to disaster. There is danger in freedom without a capacity of thought to direct it. Where balance is maintained, and when the proper knowledge and understanding

are combined with it, then the individual is free to make decisions and choices and take his place in a democratic society.

The democratic state must develop citizens who are able to exercise that control over their actions which entitles them to freedom. Education, then, must teach them the relation between freedom and control. Good citizenship comes through living and doing in the light of the highest good of the group. Control means that many transitory attractions and possible satisfactions are sacrificed for the sake of greater end satisfactions. Through practicing this control the individual grows toward optimum development upon which a democracy is dependent. Among other characteristics, the Progressive Education Committee suggests the following as criteria by which to judge a democratic individual:

1. The ability and zeal to use the method of reflective thinking in meeting the problems of living
2. The ability and zeal to act cooperatively in solving problems of common concern
3. The cultivation of the attitude of social sensitivity.[1]

The school should act as a center to which individuals, young and old, may bring these problems of living in order to obtain helpful guidance to intelligent decisions in directing their activities. Only in this way can it aid each person to build a socialized creative individuality which is the basis of American democracy.

In such a society the person constantly is faced with basic human needs which when satisfied will enable him to live happily in the world around him. Spafford describes these needs as follows:

> The individual should have work that is worth while, individually satisfying, and socially useful; recreation that is recreative and relaxing; food, shelter, and clothing that meet

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[1] Progressive Education Committee, Progressive Education - Its Philosophy and Challenge, p. 8. New York: Progressive Education Association, 1941.

> the physical and esthetic demands of the individual; normal and satisfying sex life. He should live under conditions and should practice health habits which contribute to optimal health for him. He needs to have a feeling of security - physical, social, and emotional; to see worth in himself and to have that worth recognized by others. The values in life which mean most to him, for which he is willing to work and sacrifice, should be clear to him, and life should be seen as a dynamic, challenging, and joyful experience.[2]

If a democracy is dependent upon the optimum development of each individual, it is important that the school and family transmit democratic ideals and practices to young people. Democratic experiences in the schools and in the family are powerful influences in developing citizens who use intelligent procedures in solving their problems.

It is difficult to define what constitutes optimum development, but it is certain that good food, clothing, medical care, healthful living conditions, and the opportunity to develop one's capacities and interests influence both physical and mental development. One must at all times keep in mind the consequences of such development upon others. Growth comes as a result of working and sharing with others, and a democratic school must provide for ever increasing participation by all, and at the same time provide for individual growth.

In recent years it has become increasingly possible to implement this concern for individual well-being because we have been building an extensive body of scientific knowledge about how the individual grows and develops. This knowledge has given us a deeper insight into the physical and cultural requisites for healthy growth and satisfying self-realization.

The child is constantly growing and developing through function, and becomes what he is through both physical and mental activities. Food and

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[2] Ivol Spafford, A Functioning Program of Home Economics, p. 49.

certain other physical conditions greatly influence his growth. If education is striving to build an international democratic society, it must strive to develop individuals who are competent to live in and manage such a society. Democracy requires on the part of the people intelligent understanding of their conditions and their problems. People cannot attain the highest fulfillment of their aspirations and hopes unless they are physically and emotionally able to do so. Children cannot be expected to learn and put into practice the things they learn if they are mentally and physically fatigued and lack the proper food for optimum health. Surgeon General Thomas Parran has said:

> We are wasting our money trying to educate children with half-starved bodies. They cannot absorb teaching, they hold back classes, require extra time of teachers, and repeat grades. This is expensive stupidity, but its immediate cost to our educational system is as nothing compared to the ultimate cost to the Nation. Something like 9,000,000 school children are not getting a diet adequate for health and well-being. And malnutrition is our greatest producer of ill health. Like nearly fresh fish, a nearly adequate diet is not enough. A plan to feed these children properly would pay incalculable dividends.[3]

A well-nourished, happy, healthy child is in a much better position to profit by the educational program of the school than a malnourished, sickly child. We know that no matter how fine and costly the school plant and its equipment, no matter how superior the qualifications of teachers, nor how carefully selected the teaching materials, methods, and techniques used by these teachers, the success of the educational program must be measured by what happens to the individual child. What happens to the individual child will depend largely upon his physical and emotional status.

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[3] Dr. Thomas Parran, Surgeon General of the United States Public Health Service. From the article "Nutrition Education And The School Lunch Program," School Life, XXVI. 1941, p. 13.

The United States has been the foremost country in the world in the research showing that food can do more than keep people alive - food can make them healthier, happier, and longer-lived. Even in 1918, the world knew that food makes a difference to the health and well-being of the individual. This is shown by the following paragraph which was written at that time:

> For years now the people of Europe and America have been reading about diet, studying nutrition, practicing cookery, talking about food, and wondering about the food supply as never before. Is there a bounteous future ahead of us? The food supply is the first necessity of mankind; and a satisfactory food supply is a necessity of advancing civilization.[4]

That paragraph might have been written very recently; but actually it was written nearly thirty years ago and published in 1919. Furthermore the food patterns recommended then were not startlingly different from those recommended now, even with all our newer knowldege of minerals and vitamins and the many aspects of nutrition.

With this knowledge at hand, even though many questions in nutrition remain unanswered, it is natural to find that the last thirty years have seen a great increase in the interest taken in nutrition. Some of the phases of nutrition that have been stressed during these years are as follows:

> All aspects of feeding mothers and babies for better health have been re-emphasized in recent years, and it is generally agreed that this is important.
>
> School lunches for all school children have been set as the goal in many countries, although unfortunately many school lunch programs are not very well organized or supported. Many nutrition programs are improved by a school lunch program both for the example of good food habits, and for the use that can be made of

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[4] L. B. Pett, "A New Outlook for Community Education," Journal of American Dietetics Association, XXIII. (January, 1947).

the school lunch in teaching.

> Factory cafeterias and the feeding of workers on the job have made a distinct contribution to the health and morale of employees, as well as to production and efficiency.
>
> New interest in the value of adequate feeding in hospitals has resulted from findings that convalescence can be materially hastened, and the patients stay in the hospital lessened by better feeding. In these days of crowded hospitals this may be a highly important factor.
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> Classes for housewives, and all forms of adult education, have been conducted in large numbers for many years. All kinds of educational material have been used to inform the public of the United States, as well as other countries.

International food problems have been receiving more and more attention. In the midst of the war, the Hot Springs Conference on Food and Agriculture dared to think of a time when all people on earth could be adequately nourished. This was followed by the formation of the Food and Agriculture Organization which has recently moved toward the creation of a World Food Board.[5] During the war, food was such a strategic commodity that many other international boards and committees functioned to help its better use as a common resource for the immediate problems. Food has also been an important item in the relief work of the UNRRA. Mr. Norris E. Dodd, Under-Secretary of Agriculture in the United States, new Director-General of FAO, emphasized the need for concrete, practical action by and within each nation, in combating the world's food problems:

> Freedom from want is the most fundamental of the freedoms which mankind demands, and the most elemental want today is food. I do not think FAO can provide the world with a better and more secure food supply. I do believe FAO can help. Food alone will not bring order, decency, and peace into the

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[5] L. B. Pett, op. cit.

> world, but I am convinced that there can be no peace in a hungry world.[6]

Sir John Orr, past Director-General of FAO, declared that nations must cooperate or drift into war; that through FAO large and small nations are cooperating in a basic principle for preserving peace by providing more food for the people of the world. If food is necessary for peace, then our efforts have been in the right direction.

If these efforts have been so widespread, why have they not been more effective? It is apparent that nutrition education is one of America's most pressing problems. We have all heard about the "defects of the draft" - poor vision, impaired hearing, decayed teeth, and bad tonsils. At the present time we have much the same reports from school health officials regarding school-age children. Recent surveys show that there is an urgent need for undertaking to bring about some improvements in the eating habits of children in this country. Most appalling is the fact that as children grow older they, and their parents, become less and less concerned with maintaining high standards of nourishment. According to Rodgers, "Nearly one-third of the nation is inadequately fed."[7] The Department of Agriculture has estimated that many millions of men, women, and children do not get the foods which science considers essential.

According to data gathered by General Mills, Inc. in nine cooperating school communities in Minnesota in 1945, it was shown that 47.2

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[6] "FAO Council Recommends New Food Measures," United Nations Bulletin, (May, 1948), pp. 375-377.

[7] James F. Rodgers, M. C., "Nutrition Education Throughout the School Program", School Life, Reprints from Volume XXVI, 1941.

per cent of the high school pupils and 29.3 per cent of the elementary pupils ate poor breakfasts; 43.5 per cent of the high school pupils and 25.9 per cent of the elementary pupils ate good breakfasts. Data on the lunches showed that high school students eating poor to fair lunches made up 82.8 per cent of those studied, while 17.2 per cent ate good lunches. Of the elementary students 67.8 per cent had poor to fair lunches and 32.3 per cent had good lunches. These figures were taken from a week long survey of eating habits in nine elementary and high schools in midwest rural, suburban, and rural communities, and show that the elementary students are getting much better meals than the high school students. However, the need is shown for nutrition education among students of all ages and of all economic conditions.

Contrary to general belief, it has been found that a good income does not necessarily guarantee an adequate diet. Studies have been made which show that there are dietary inadequacies among children from all types of socio-economic groups.[8] However, the teacher should not come to any conclusion about the nutrition of a particular group until she has studied the habits and characteristics of that group. Some parents may not be able to buy the essential foods, but many a mother with little money keeps her children well-fed by means of skillful management.

In the United States, we have sufficient food supplies to export large quantities, yet our surveys find children too malnourished to take their true place in life. We have known for many years how to prevent rickets, pellagra, scurvy, and other deficiency diseases; yet

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[8] Martha C. Hardy, "Nutritional and Dietary Inadequacies Among Children from Different Socio-Economic Groups", Journal of the American Dietetics Association, XIX, No. 3, (March, 1943), p. 181.

we still find these diseases prevalent in certain sections of the country and in other countries. Although several factors seem responsible for the decay of teeth, we have been told that the teeth are better if during the prenatal period and childhood, diets have included the right foods. O'Rourke says that:

> "There is inadequate appreciation of the fact that dental care for children frequently must be based on consideration of the problems of nutrition, health, growth and development, and in general of the whole child. Furthermore, the dental need of children must be defined not only in terms of dental disease or deficiency alone, but also on the basis of their implication with regard to food habits, newer standards of nutrition and a positive definition of health."[9]

Along this same line, Klatsky tells us:

> "For many years it has been realized that there is a close relation between the food that one eats and the state of health of the masticatory organs. It is true that living tissue must be nourished properly in order to remain healthy. It also has been established that a diet lacking certain key nutritional elements may give rise to pathologic change in the human mouth. But, it is erroneous to claim that dental abnormality and incidence of caries among civilized communities are caused mainly by nutritional deficiencies... The refined texture of the food we eat and the sophisticated methods of its preparation and consumption are the most important contributing factors in dental degeneration."[10]

It has been shown in the United States that food makes a difference in mental alertness and the ability to learn in school, yet in many sections, school lunch programs are not making the contribution they could. In an experiment with forty undernourished children, it was discovered,

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[9] J. T. O'Rourke, "Dental Care for Children", Journal of American Dental Association, XXXIV, (May, 1947), p. 603.

[10] Meyer Klatsky, "Studies in the Dietaries of Contemporary Primitive Peoples," Journal of American Dental Association, XXXVI, (April-May, 1948), p. 385.

following an eight-month period of health teaching during the school year, that the mean per cent of underweight had been reduced from twelve to seven per cent. Teachers reported a reduction in the degree of excitability of the children and in the frequency of colds. Scholarship improved in 53 per cent of the cases, attentiveness in 56 per cent, and posture in 66 per cent.[11]

At the present time, national and international interest is focused on the present food emergency and proposed ways to meet it. Recognizing that nutrition is a social and public health problem of general concern various governmental agencies, service organizations, and many business firms have for some time been offering assistance to improving the eating habits of the American people. The war gave impetus to this movement, as did also "winning the peace," and helping other nations with their food problems. Many school systems in the United States are giving greater emphasis in their curricula to nutrition education, and this is as it should be. If good health is one of the major objectives in education, then nutrition is an important subject for instruction.

Just as every teacher in the school systems of America has a responsibility for teaching pupils the principles of democracy, so must every teacher be, to a degree, a teacher of nutrition. Whether the teacher works in town or country, she works with some children whose poor health renders much of her effort futile. Whether she works in a slum area or in a wealthy suburb of a large city, she works with some children whose undernourished condition makes it difficult for them to

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[11] "Results of Nutrition Demonstration are Studied," Everybody's Health, XXIV, (December, 1939), pp. 4-5.

concentrate upon their work or even to feel much interest in the activities going on about them. Every one of these children should be given assistance in developing a strong, healthy body able to perform all the tasks, mental and physical, of which he is capable.

There should be no delay in making a drive to raise the dietary standards of the people of our nation and of the whole world. The school is an existing institution already organized for the sake of public service, and has a constant opportunity to influence a large proportion of American youth; therefore, the schools can and should develop a program of nutrition education.

Although knowledge about nutrition does not guarantee the practice of good eating habits, educative experiences with food have led to substantial improvement in diet. It seems more difficult to correct bad habits in older children than it is to establish good habits in small children; therefore, nutrition education should be started early. However, nutrition education is as essential at one age as another, and should be a part of health education in all grades in which instruction may be given.

Although the application of the principles of nutrition should start at birth, teaching of nutrition facts and principles begins when the child enters school. In some regions this may be nursery school. To defer nutrition teaching until junior or senior high school years is like trying to build a house before the foundation is put in. There is nothing upon which to build, and by this time food habits are well established.

There are two points of view with regard to nutrition teaching in the primary and intermediate grades. First, some teachers want to

integrate it with various school activities, rather than teach it as a separate unit. Second, many believe that nutrition experiences at the primary level may be informal, but that beginning with the intermediate grades, work should be definitely organized in the form of separate units.

The aim of nutrition teaching in the elementary grades is to develop the habits of eating foods which are "good for him", and to develop in the child a feeling that he is responsible for his health.

Phases of elementary teaching in many successful nutrition programs are described in the following paragraphs.

Children learn to like food by eating it under favorable conditions. The classroom may provide such conditions. For example, food served in the classroom and eaten by the children and the teacher takes on a party aspect. If it is also prepared in the classroom with the aid of the children themselves, its acceptance is assured. Children want the social approval of their classmates and their teacher, and they receive personal satisfaction from participation in an interesting and satisfying activity.

In the earlier grades children learn through actual experience. They may see the effect of food upon growth most easily through experiments with plants and animals both in the classroom and at home. In these grades children are interested in pets and wish to take the best care of them. Animals may be used for testing purposes to show various results, but weight gains and physical appearance of the animal impress the children with the value of the foods for growth which can never be duplicated with words or by rules. The children draw their own conclusions regarding the value of the food for growth and apply the information gained to themselves. This direct transfer is probably due to the

fact that animals do not seem like experimental tools to children of these ages. In this stage children still learn to like new foods, but the emphasis is on food for growth rather than on food for flavor. Also, in the lower grades, the emphasis is on food rather than on the nutritive properties of the food.

In the upper elementary grades an appropriate theme might be "Why Food Makes a Difference." The children may begin to learn the nutritive value of foods. This can also be done through animal feeding experiments, but activities used should be within the realm of the children's experiences in order to develop good food habits and to show children why these food habits are important.

Nutrition workers quickly observe one fact: actions of the majority of people in producing, preparing, and selecting food is evidence enough that there is a need for change in the educational approach, if the food habits of the entire population are to show improvement. This does not mean that the food habits of people in general have not improved in the last decade. It merely recognizes the fact that there are still many people who reserve land for money crops rather than for vegetable gardens and pastures; people who continue to prepare food as grandmother did even though its nutritive value may be destroyed; and people - well-educated people - who profess to believe that wise food selection is an essential factor in the maintenance of good health for everyone, except themselves. The assortment of habits, ideas, food fads, and superstitions found both in urban and rural sections furnish basis for careful study.

Studies have been made, and federal and state nutrition agencies have been developed which distribute vast quantities of information of all

kinds. Much of this material is valuable and makes a definite contribution toward solving the problem; but, it seems that the great need is for an evaluation of the problem in each region and local community effort to solve it. Many people are more concerned with problems about bringing adequate nutrition to the children in foreign lands than in how the school children in their own town can be adequately nourished. This international concern is commendable, but it should include unfortunate persons at home as well as abroad.

There are many reasons why people are still underfed. One is the economic factor - some families in some regions, even now, do not share in the national income sufficiently to be well-nourished. Though most salaries in the United States are higher than usual, the rising cost of food makes it difficult for many families to buy the needed foods and in sufficient quantities for good health. Even more important right now, is the fact that many families do not spend their extra money on food or on the right foods.[12] This may be due to indifference, poor management, habit, or ignorance; yet most people have access to an enormous amount of food and nutrition information.

Why do people fail to use this information and why do we still have no appreciable amount of improvement? Pett says that our nutrition work is too general and has consisted of a "blunderbuss" approach.[13] We have tried to tell people all about everything, regardless of what nutrition faults were evident, or what particular food habits or food products were commonly used in the region concerned. We dealt with national

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[12] Pett, loc. cit.

[13] Ibid.

averages; thus, everyone was told to use more milk because the national average needed to be raised, and this was told to people in dairying communities where milk consumption was well above average. However, people can live in dairying communities and still not use enough milk.

Recently there seems to be a necessity to emphasize anew the community approach; that is, a diagnosis of the situation in a region as a basis for action. Regional differences can be shown as a result of surveys and other appraisals which result in a better evaluation of the problem, with real community effort focused at its solution. In practice, this means finding one or more groups needing help and seeing that they get it in good practical form. Instead of trying to cover everything called nutrition, the worker can devote more time to inspiring people to apply the facts they need. People should know what it means to be well-nourished, and what the consequences will be if essential foods are omitted from the diet. One of the most satisfactory methods of obtaining a picture of the food pattern of any particular locality is the dietary survey. It is desirable to know not only what the child has eaten during the day, but also the approximate amounts. Tabulation of the foods eaten by the child gives a good indication of the general dietary pattern for the school at large. It is probably safe to assume that the habits of the child reflect the habits of the family. The results of these food habit studies direct the nutritionist's plan of work and serve to arouse the interest of the school, home, and community in the nutritional welfare of the children.

Because of the concern over this problem of nutrition in the community of Ripley, Oklahoma, steps were taken to analyze the situation in order to see what could be done toward improving the dietary habits of

the high school boys and girls, and incidentally of the whole community. Work on nutrition had been stressed in homemaking classes, but there seemed to be a need to reach other students and adults as well as the girls enrolled in homemaking.

THE PROBLEM AND THE PROCEDURE

Before any program of improvement can be successfully under taken, one must know the total situation - the needs and desires of the community. Familiarity with the accepted food habits of the people is a requisite for an appropriate educational approach both for school children and adults.

The school lunch program in Ripley was begun in September, 1946, and has been in operation for two years. In order to understand the problem, however, it will be necessary to explain the situation prior to the inauguration of the lunchroom. Ripley had a population of 414 according to the 1940 census, while the population of the consolidated school district was much larger, amounting to approximately fourteen hundred. The district is an agricultural community with farming as the principal occupation. However, four oil companies have employees living in or near town, and others live in Ripley and commute to neighboring towns.

Most of the students, in fact 87 per cent, rode to school by bus from the surrounding territory, while 13 per cent lived in the town itself. Very few of the students could go home for lunch, so it was necessary for most of them to make some arrangement for the noon meal. About half of the students brought lunches from home while the remaining ones ate lunch in a cafe down town.

In the fall of 1945 a check of the school lunches was made by the writer, and it was found that 80 per cent of the lunches brought from home consisted of sandwiches. The students preferred this type of lunch because it could be brought in a paper sack which could be discarded each day. Only two per cent brought milk in thermos bottles.

A soft drink machine was in the school hall at this time and most of the students had a cold drink at lunch time as well as at other times during the day.

For five months, the lunches eaten at the cafe down town were observed by the writer. By these observations and also through the study of diet lists made by ninety high school students, it was found that only two per cent chose plate lunches consisting of meat, two vegetables, salad, and dessert; about 50 per cent ate a lunch consisting of a hamburger and a soft drink; approximately 40 per cent chose pie and a drink, sometimes adding ice cream to the pie; while the remaining eight per cent bought the ingredients and made their own ice cream sodas. The exact number was not determined, but many ate candy bars with their lunches or with soft drinks. A number of the students took their home-packed lunches to the cafe where they bought bottled drinks; but not one student chose milk as a part of his lunch.

These foods may have their place in the diet, but serious consequences result from the exclusive eating of these foods for lunch daily, omitting essential foods. The meals were unbalanced and were all high in carbohydrates. Generally speaking, it is difficult to have a balanced daily dietary unless care if given to balance every meal. Because a large number of different foods contain essential nutrients, the many available lists of foods that will supply each day's nutritive requirements vary a great deal. In all lists, however, the importance of leafy green and yellow vegetables, tomatoes or citrus fruits, milk, fish, or eggs, and enriched or whole grain bread, flour, and cereals is emphasized.[1]

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[1] Basic Food Chart, U. S. Department of Agriculture, Washington, D. C. See Appendix, Exhibit I.

During the same year, as a part of a county-wide Better Breakfast Campaign, a survey was made of the breakfast habits of the entire student body, both elementary and high school. Twenty per cent of all the Ripley students reported that they ate no breakfast at all; 10 per cent of the high school boys regularly omitted breakfast, while 27 per cent of the high school girls reported never eating breakfast.

The results of these surveys caused much concern on the part of the administration, faculty, and others over the health and dietary habits of these students; and plans were made to inaugurate a program for improvement of the nutrition among the students. A program for nutrition improvement may be divided into two phases, action and education, both of which may be carried on in the school. It seemed that the simplest and most direct attack on the problem was through action - by providing for all the students at school. This feeding could best be done at noon, and it was decided to investigate the school lunch program and determine its possibilities in Ripley. The traditional school lunch has been demonstrated in many communities and over many years to produce improvement in the growth, health, school attendance, discipline, and learning of many children.

On a national scale school feeding was much slower in this country than abroad,[2] but the depression gave cause for increasing interest in the problem. Federal aid for school lunch feeding was begun in 1933, and as a part of the Works Progress Administration, the W.P.A. school lunch program was initiated as a means of providing employment. In this

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[2] E. N. Todhunter, "Child Feeding Problem and the School Lunchroom", Journal of American Dietetic Association, XXIV, (May, 1948), p. 422.

period, also, there was the problem of agricultural surpluses. In order to aid the farmers, the federal government purchased quantities of food and distributed them to school lunch programs. By 1943, food surpluses under this plan had disappeared, and the W.P.A. was also abolished. The National School Lunch Act, passed in June, 1946, gave a more permanent basis to federal aid for school lunches. However, in many instances today, the school lunch is considered only as a service to provide food for children who do not have time to go home for lunch. It must fulfill a greater function than this.

The school lunch offers a means of improving health and nutrition. Through it, the child has an opportunity to learn to know and to like new foods and a wide variety of foods, and simultaneously to develop desirable food habits. Other learning experiences in cleanliness and health habits, table manners, conversation, and social behavior may be acquired in the natural situation of eating lunch. If the lunch room is properly supervised these learning experiences may extend to more students and be of more value to all.

If there is to be improvement in food habits and a gain in good nutrition for all children, the school must recognize its responsibility for making the school lunch not a service feature, but an integral part of the educational program. Through the schools it is possible to reach larger groups than in any other way. Children are more adaptable and more willing to learn and to acquire new habits than their parents, and there is also the possibility that children may carry back into the home some of the interest in new foods, new ways of preparing foods, and new knowledge of nutrition in relation to health.

In a study carried on in Florida for a five year period beginning

September, 1940, the effectiveness of the school lunch in improving nutritional status of rural school children was measured.[3] The children were given physical examinations, hemoglobin and red blood cell counts were made, and height and weight were determined three times during the study. The lunch which was provided daily supplied one-half or more of the recommended allowance for each nutrient. At the end of the fourth year of the study, there was a marked decrease in the number of children with clinical signs of nutritional deficiency. There was an increase in the hemoglobin values during the school year and a decrease during the vacation period. Height and weight measurements showed definite advance in the developmental level. The authors of the study concluded that when adequate lunches are prepared under trained supervisors, such lunches offer an effective means of raising the nutritional status of school children.

After discussing the local situation, a committee of three teachers was appointed to investigate lunchroom programs in other schools of the county. They were to bring back information concerning space and equipment, government regulations, lunchroom employees, and the success of programs already in action.

Five lunchrooms in the county were visited and after a thorough investigation, the committee was convinced that the addition of a school lunch program would at least partially solve the problem. Such an undertaking required much preparation in advance, and this was done during the summer months. The soft drink machine was removed from the hall.

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[3] O. D. Abbott, R. O. Townsend, M. B. French, and C. F. Ahmann, "Effectiveness of the School Lunch in Improving the Nutritional Status Of School Children." University of Florida Agricultural Experiment Station Bulletin, No. 426, 1946.

Two rooms to be used for the lunchroom were remodeled, and the furnishings and equipment were selected by a committee of three, consisting of the superintendent, the homemaking teacher, and one of the lunchroom employees. It was essential that arrangements be made with the proper officials, and all preparations were completed to serve Type A lunches[4] to the students when school opened in the fall.

The lunchroom soon became popular with the students who took advantage of it, and it was approved by the parents; and a special effort was made to make the menus well-balanced and attractive to the students. A majority of the grade students ate in the lunchroom, but many of the high school students insisted on going to town for the usual lunch of hamburger, pie, and soft drinks. However, both faculty members and students observed that those who did eat in the lunchroom were leaving food on their trays, and were rejecting certain foods entirely.

Since it is not what is on the menu of the school lunch but what the child eats that counts, an educational opportunity was seen to correlate teaching with experience in the school lunchroom. Lunch at school was not enough. Supplying of food alone did not bring the desired results. The homemaking teacher discussed the problem with the faculty and with students in homemaking classes. Both agreed that much could be done to improve the nutrition practices of the students, and were willing to put forth an effort to make an improvement in their own as well as other's eating habits.

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[4] Type A lunches include two ounces of meat, or meat substitute; vegetables and/or fruit; bread, enriched white or whole wheat; butter or fortified margarine; and whole milk. See Appendix, Exhibits 2,3.

Any attempt to change food habits must be accompanied by a knowledge of why people eat what they do. These habits, like any other habits of human beings, can be understood and modified only when they are seen as a part of the total culture of a community. Some cling to the idea that if people eat what they like they will be eating the food that is best for them. During a discussion one girl remarked, "My father doesn't like many foods. He eats mostly biscuits and potatoes and he is healthy enough." This brings out the point that numbers of people fail to realize what good health really is. How can they, when they know only what they have experienced? Good health to them is the best they have felt at any time during their knowledge. Also, to many, body weight is an indication of the health status. This is shown by the remark a mother made, "My child is fat, so I know she's healthy." Food habits are quite complex and they are usually unconscious. Like most habits, they tend to persist even when it is demonstrated that failure to abandon them may injure their possessor.

The question of why people eat what they do has economic aspects such as family income and the availability of foods. In some parts of the United States and in many parts of the world, lack of purchasing power and limited food supply are primary causes of poor nutrition. However, many families with adequate incomes fail to show much discrimination in their selection of food, and many with large and varied supplies of food are subject to dietary inadequacies. Therefore, food choices are governed by many factors.

These factors are both cultural and psychological. Food habits may be racial, national, religious, or traditional in origin, and it is tradition that insures their survival. Most resistance to the intro-

duction of new foods in the diet can be traced to family customs. If one or both parents have an aversion to certain foods, the child may not eat those foods. Every school child will be found to like certain articles of food more than others, and many of his preferences will have had their inception at the family table. Early emotional reactions have much to do with the creation of attitudes toward food. If a child has a satisfactory emotional relationship to his parents, he may unconsciously look upon them as models and follow whatever example they set. Children tend to identify themselves with their parents and with other adults whom they admire and to accept or reject food in imitation of them. One little girl said, "I don't like old yellow carrots! My daddy doesn't like them, and I don't either." In the same way many children adopt the attitudes of older brothers and sisters whom they long to resemble. If a child's emotional relationship to his parents and to other adults is not satisfactory, he may refuse food either as a method of self-assertion against them or as a device for gaining attention from them. He will probably build up a strong aversion to food that is refused for these reasons.

When working with students, it is not difficult to trace the effect of parental instruction or lack of instruction in relation to eating habits. Some parents show an intelligent concern with this very important phase of child training, but many, unfortunately, have little understanding of the psychology of diet. Knowing the life history of the individual throws light on the problem. Battles which parents wage with children over such issues as "drinking milk", "eating vegetables", "finishing everything that is on your plate", and "not eating between meals", may

express themselves in the food habits and therefore in the nutritional status of a whole generation. When the small child rejects the green vegetable or cereal or egg yolk that for some reason seems distasteful to him, the impatient parent is all too likely to resort to threats of punishment or promises of reward. Foods that are eaten in childhood out of fear or in expectation of being given other foods, such as sweets, are not likely to be eaten in later life with much pleasure. Moreover, bribery has the bad effect of giving a child the impression that foods presumably good for him are unpleasant and foods less good for him pleasant.

Nowhere in all the world, perhaps, are food habits so varied as in the United States of America. Immigrants from every European country, as well as from other parts of the world, have had a share in molding the eating habits of Americans. Any nutrition instruction, therefore, should be planned with reference to customs peculiar to the locality.

Most eating habits, then, are formed in childhood and tend to become fixed as the child grows older. Before they enter school most children have acquired, as a result of parental training and unconscious emotional reactions, a number of clearly defined ideas and habits with regard to diet. If childhood influences have not given them a taste for certain necessary foods, they may suffer throughout life from inconvenient and detrimental food aversions. For example, surveys of the eating habits of soldiers training in United States army camps during World War II revealed that a great many steadfastly refused to eat fresh fruit and vegetable salads and a variety of important vegetables.

If the nutrition worker is to modify, or destroy and replace

undesirable habits, she must have a great deal of ingenuity and patience, as well as a knowledge of the basic facts of psychology. Not only is one's behavior in regard to food affected by such factors as hunger, appetite, and habit, but he is also sensitive to taste, smell, and sight. It is now generally recognized that "in any practical attempt to improve nutrition status.....use should be made of instincts, appetites, habits, and any other devices to condition man favorably to desirable food choices."[5] Most people are so constituted that they do not derive the greatest value from food unless their emotional needs are satisfied along with their physiological needs.

Pleasure and pain are psychological factors to which recognition should be given in nutrition education. The normal, healthy child should have a good appetite at meal-time and enjoys eating if the food is palatable and if it is served in agreeable surroundings. Dinner time especially, often coming at the end of the day when some members of the family may feel fatigued, should be an occasion for pleasant conversation in an atmosphere of calm and complete contentment. One's pleasure of eating is always enhanced by the sight of a carefully laid table, an attractive centerpiece, and the smell and taste of well-cooked food. Because there is such a close relationship between emotion and digestion, strong emotion of any kind - even pleasurable emotion -- may dull or destroy the appetite. Worry, fear, anger, and other upleasant emotions are likely to have an inhibiting effect upon the appetite. If all food preferences and aversions could be traced to their origin, it would probably be found that

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[5] Human Nutrition, Yearbook Separate No. 1668, Reprint of Part 1 of the Yearbook of Agriculture, 1939, United States Department of Agriculture, 1940, p. 135.

many of the foods people like were first eaten on occasions they remember with pleasure, and many of the foods they dislike on occasions that they can recall only with pain. One obvious way of establishing good habits of food selection, therefore, is to provide opportunities for children to eat food under pleasurable circumstances.

From the foregoing discussion, one may conclude that any attempt to alter food habits is attended by many difficulties. What retards the spread of nutrition knowledge and its acceptance by people? Many homemakers, even though the factors of family background, culture patterns, early associations, fashions in foods, social and economic conditions, and indifference are operating, are able to provide adequate food for their families. Why, then, are not more families better fed? The inertia of habit is strong, particularly with adults, and they make changes slowly. Many Americans, however, have a compelling impulse toward self improvement, and are receptive to change if that change is demonstrably for the better.

It is believed that the greatest hope of getting people to make an intelligent selection of foods from those that are available to them lies in a comprehensive program of nutrition education. Although that program will generally be centered in schools, it must extend into the home and the community. Much can be done to improve the dietary practices of parents and other adult members of the community through general selection and education on a broad scale. The average person does not want or need highly technical information about nutrition. He needs to be given insight into his own attitudes toward food; he needs to be assisted toward understanding his nutritive requirements; and he needs to be provided with practical means of modifying his food habits, some of which may be deeply rooted.

Brigadier General Hershey, addressing the National Conference for Defense, said that at least one-third of the men rejected by the Selective Service Boards for physical causes had obvious defects resulting from either undernutrition or wrong nutrition.[6] These have been characterized as "hollow hunger" and "hidden hunger". Hollow hunger is that which results from starvation; hidden hunger results from a lack in the diet of substances necessary for health and growth. At this same conference President Roosevelt said, "We do not lack, and we will not lack, the means of producing food in abundance and variety. Our task is to translate this abundance into reality for every American family."[7] It was assumed that most of the families in the community studied had the food, or the means of obtaining it, for good nutrition, but needed guidance in proper food selection.

Believing that the attitudes toward food and the eating habits of the high school students could be improved by a planned nutrition program, the Homemaking III class, composed of junior and senior girls, took the initiative in this study and planned with the writer how the project could be best carried out. Educators have advanced the theory that if a service is to be really useful, those who want and need the help should assist with the organization of the project. This theory was put into practice in the four homemaking classes working on this project, and all helped formulate their plans for study. Although the leader of any group should guard against presenting a ready-made plan which must be

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[6] Editorial on Nutrition, Hygeia, July, 1941.

[7] Ibid.

followed, the teacher, in advance of the first class planning, made out a list of desirable objectives to be used as a basis for planning.

In planning the program, the following questions were first discussed: How can one find out what the real needs are? How can one get everyone working together to help meet them? What goals or aims should be set?

Basically our major aim was in harmony with the aim of the program of nutrition education in the United States, which is to improve the health of the people as a whole by promoting sound dietary practices among both children and adults.[8] This, of course, was the major aim; but eventually, the following list of goals and desirable outcomes was worked out by the high school group:

> To make a survey of the food habits of the high school boys and girls, in order to help determine the needs of the community concerning nutrition education.
>
> To survey the food resources of the community in an effort to learn whether the community had an adequate food supply, and if so, why students were still malnourished.
>
> To study trays returned in the lunchroom, to learn what foods are rejected.
>
> To learn why, if possible, certain foods are accepted or rejected, both in the lunchroom and at home.
>
> To help teachers, students, and parents realize that for the good of our total society, everyone, regardless of means, should be well-nourished.
>
> To bring students and parents to an understanding as to what constitutes an adequate diet; and create in them a desire to practice good nutrition habits so that the following may be realized:
>
> > Adequate daily diets including foods from the Basic Seven for each person

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[8] A Food and Nutrition Program for the Nation, National Planning Association, Planning Pamphlet No. 46. Washington 6, D. C., May, 1945.

A safe and sufficient milk supply for the community

Regularity of meals and the observance of other health habits

Adequate time allowance for all meals

The above objective may be realized, at least partially, by carrying the following activities:

Special work on nutrition in all homemaking classes

Assist all teachers with finding materials and planning for food study; also assist the grade students with their nutrition study

Integrate the study of nutrition in other subjects

Make periodic checks of food habits to note improvements, and use as a guide for further study

Make nutrition pamphlets and bulletins available to all families

Distribute newsletters on survey and nutrition facts

Put up posters in the lunchroom, study hall, halls and classrooms

Plan and carry on meetings for parents

Call in specialists to talk to study groups and parents

Show films on foods and nutrition

Prepare exhibits in classrooms and elsewhere

Discuss nutrition during home visits

Invite parents and encourage visits to school

To make the school lunch an educational feature of the entire school program.

To provide experiences that will develop a liking for essential foods.

To increase interest in food production and preservation.

To build an awareness in students and parents as to the importance of:

Sanitation in the handling of food

Well-planned meals which are adequate, palatable, and which have a variety of food

Proper cooking methods for attractive appearance and preservation of food values

Planned, economical buying to insure an adequate diet on a limited budget

To help students and their parents appreciate the fact that good food selection is an important phase of the total health program.

To help the community plan procedures for providing adequate diets for families unable to bear the financial responsibility.

To enlist the aid of teachers, students, parents, and citizens in carrying out the nutrition program.

In any program for improving the nutrition of children, the regular classroom teachers can play a vital part; but since eating is a complex process, the major part of which is performed in the home outside the classroom, improvement in nutrition is a home-community-school enterprise. Knowing that nutrition studies at school are unlikely to bring about substantial changes in food habits of pupils without the cooperation of parents, plans were made to acquaint the parents with the work and to secure their interest and cooperation. The education of parents is indispensable whether their children happen to be well or ill-nourished, but particularly if the family income is restricted.

In many schools parents participate actively in various phases of the school program, but in the community studied, such participation is passive and carried on principally through home visitation and occasional visits by parents to the school. To work cooperatively with parents on the food and nutrition problems of students, teachers need to become acquainted with parents, in their homes when possible, and also to keep them informed about what their children are learning. Fortunately, most

parents are readily interested in everything that affects their children's health, and for this reason may be expected to take a special interest in their nutrition studies and experiences.

Consequently, a newsletter explaining the program was planned, prepared, mimeographed, and distributed to parents. In this newsletter was a special plea to parents, asking their cooperation, and entitled, "Do You Want to Give Your Child A Priceless Gift?"[9] Home Economics newsletters were sent out from time to time. These contained further explanations of the work being done, ways in which parents could help,[10] special recipes and balanced menus, and improvements that had been made in food habits.

After informing the parents of the work to be carried on, one of the first steps in the program of nutrition was to investigate the nutrition and general health status of the children involved. The nutritionist sees the results of poor feeding, but it should be realized that other health factors, such as sleep, rest, exercise, sunshine and fresh air, and emotional habits, may cause various degrees of malnutrition among children. Anyone responsible for the health and well-being of children should be familiar with the outward physical manifestations of good nutrition and also with early signs of malnutrition.

After some study, the students found that healthy, well-nourished children differ a great deal in physical appearance; that among children of exactly the same age, for example, there was a great deal of variation in height, weight, coloring, and other physical characteristics. But, however much they differ, healthy, well-nourished children according to

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[9] See Appendix, Exhibit 4.

[10] See Appendix, Exhibit 5.

Roberts, are likely to display the following general characteristics:

An air of contentment, vigor, and interest in life
Bright clear eyes
An alert and happy facial expression
A good appetite and good digestion
Regular elimination
Sound, wholesome, and refreshing sleep
A strong, well-built skeleton
Firm, light pink gums
Strong, well-developed muscles
Erect posture, symmetrical chest, flat shoulder blades
Moderate padding of fat
Firm, healthy looking skin[11]

The students further learned that a poorly nourished child may also be suffering from disease or from some functional disorder of the body, but that there were signs of malnutrition that were readily apparent to teacher, parent, or student. These were:

Lack of appetite
Failure to eat an adequate breakfast
Failure to gain steadily in weight
Loss of weight
Aversion to normal play
Loss of strength
Chronic diarrhea
Poor sleeping habits
Nervousness and irritability
Lassitude and chronic fatigue
Muscle and joint pains
Backwardness in school
Lack of mental application
Repeated respiratory infections
Burning or itching of eyes
Burning, prickling of skin
Abnormal intolerance of eyes to light
Abnormal discharge of tears
Spongy, bleeding gums
Bad posture
Sores at angles of mouth[12]

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[11] Lydia J. Roberts, The Road to Good Nutrition, Children's Bureau Publication No. 270, Revised, U. S. Department of Labor, Washington 25, D. C., 1944, pp. 1-7.

[12] "Recognition of Early Nutritional Failure in Infants, Children Adolescents, and Adults." Prepared for the Subcommittee on Medical Nutrition, Division of Medical Sciences, National Research Council. Journal of the American Medical Association, CXVIII, (February 21, 1942), pp. 615-616.

After studying these signs of good nutrition and of malnutrition, each girl checked her own physical status, that of her family, and that of the students in general. This check revealed that there was a need for exact information which would be simple, clear-cut, direct, and specific. It was agreed that time should not be wasted in gathering facts already available, but that there were some questions that needed a special investigation. Observation of students in the classroom, in the lunchroom, and of conditions in their homes, may give a general impression of their nutritional and health status, but more objective methods of gathering information were desired.

Through class discussion it was found that there were four special causes of poor nutrition prevalent in the community, namely: irregularity of meals; inadequate meals; the extensive use of soft drinks and candy; and between-meal eating. Many students came to school without breakfast; and study revealed that the number who go to school without breakfast is considerable, although no specific figures for the country were available. The number varies with the region and with the socio-economic conditions of the family. Where the mother works, she often does not have time to prepare an adequate breakfast or to see that the children eat breakfast before starting to school. It is likely that the housing shortage and the resultant crowded living conditions of families today are contributing factors to meals that are missed. In many homes where more than one family is living, too many persons are using the kitchen at one time, and there is inadequate space for food preparation. In rural areas, children frequently travel long distances on school buses without having had any breakfast, or with only something to eat on the

way. Thirty miles each way to and from school is not infrequently the distance traveled by such children.

Keeping in mind the four problems mentioned above, it was believed that the diet survey or check sheet would best reveal the information needed in order to carry on an effective program in nutrition education. Consequently, four types of survey sheets were developed: [13]

1. A survey of food production in the Ripley community
2. A food check sheet for the first day of the survey containing questions that might give insight into specific food habits
3. A food check sheet for the second and third days of the survey
4. A check sheet for use in checking foods returned on trays in the school lunch room.[13]

The first survey was made in an effort to find out about the local production and conservation of foods. What types of foods were being produced and in what amounts? Were food conservation programs being carried on, and were they adequate for each family? It was hoped to gain from this survey some understanding of community food problems that might hinge upon local production, conservation, and distribution.

The food check sheet for the first day showed all foods eaten during the day, whether or not the student had eaten breakfast, foods eaten between meals, the consumption of special essential foods, and special likes and dislikes. The check sheets for the second and third days were identical and showed only the foods and amounts eaten each day. The main purpose of this survey was to discover such weaknesses of food intake as inadequate consumption of specific food groups, consistent skipping of

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[13] See Exhibits 6, 7, 8, and 9 in the Appendix.

meals or the same meal, indulgence in too many snacks between meals, little or no variation in meal patterns, and poor selection of foods for lunch when eating at the cafe in town.

The fourth check sheet was used to determine what foods were accepted or rejected in the school lunchroom. These trays, a total of 630, were checked three days in succession at three different times in order to find out if certain foods were habitually left untouched, as was suspected.

Special care was taken in explaining to the students how and why the records were to be made. No names were to be put on the food check sheets, but the sex was checked in order to discover differences in the food habits of boys and girls. The students were told that the records were not tests and they were assured that what they put on their records would not affect any grades given in any subject. On the record blanks there were no lists of foods to be checked; the children wrote in the foods eaten. All participants were told that their cooperation would make available certain valuable information which otherwise would be unknown.

Records were kept for three days after which the sheets were checked according to the Basic Seven chart, and for other information needed. A count was made to determine the frequency with which certain protective food groups were eaten. Each student was encouraged to write down each day the foods which he ate the previous day for breakfast, dinner, and supper, as well as between those meals. These were then evaluated on a group basis by the use of a simple score card which gives a point value of one for each serving of protective foods. If a diet record averaged a daily point value of 14 or more, representative of basic food groups, the diet was rated as "good"; if its point value was 13 to 8, the diet was rated as "poor". The food groups considered were: milk, eggs, meat,

whole grain cereals and bread, green leafy vegetables and other vegetables, fruits, both citrus and other, butter or margarine, and potatoes. A breakfast was considered adequate if it contained an average serving of egg, a cereal or breadstuff, and milk.

A study of the completed diet survey forms was very enlightening for the students, parents, and teachers, and provided a basis for planning the classroom instruction. For the purposes of this study, class work was divided into two phases, (1) actual nutrition study in homemaking classes, and (2) outside activities carried on by students as a part of classroom study.

Nutrition facts and the need for instruction in this field are not new. It has long been a concern of the schools, especially in homemaking classes, but the present emphasis given to it and the progress made by it are new. Special emphasis was placed on actual experiences so that there would be gains not only in nutritional knowledge but in nutritional practices.

In the Eighth and Ninth Grade classes, the students were concerned with personal fitness, and the information they would need to know in order to help make themselves healthy and attractive. The Homemaking II and III classes composed of tenth, eleventh and twelfth grades, carried on their study on a broader level. In its broadest sense, nutrition education in school is concerned with the whole business of food getting, production, storage, conservation, selection, preparation, serving, and consuming, and even with digestion and assimilation. It entails the problems of obtaining sufficient funds to buy food, using available funds in such a manner as to obtain the best nutritional results, planning meals economically, serving them under pleasant and clean circumstances, forming

regular eating habits, and securing proper rest and sleep.

Because of space, the content of units cannot be given here, but some suggestions for activities which help to vitalize the work may be in order. Some activities which students enjoyed and which brought results were as follows:

They determined their own and assisted in determining the nutritional needs of others; they analyzed these needs and decided upon plans of action; they studied the food practices in their own and others' homes, to recognize ways through which people provide for their food needs, some of them satisfying personal tastes as well as nutritional requirements; they worked to become skillful in planning, preparing, and serving meals, and in conserving valuable food elements; they worked on food buying problems, using current news services which keep household buyers aware of foods that are plentiful, and good buys suited to restricted family incomes; and they learned to plan and purchase supplies for meals from allotted amounts.

The lunchroom program was emphasized continuously in order to encourage good food habits on the part of teachers and students. Foods wasted and rejected in the lunchroom were analyzed, and ways of meeting these problems were planned and carried out. Effort was made to cooperate in the national conservation program by having a "clean plate" campaign in the lunchroom and at home. Posters were put up and flowers placed in the lunchroom so that students might have attractive surroundings in which to enjoy the company of fellow students, and have an opportunity to practice the fine art of living together. One advantage of the school lunch is that it reaches nearly all the pupils in school.

The diet check list was a good device to stimulate better nutrition practices. Not only were the meals of all the high school students checked three times during the year, but the girls frequently scored individual meals or daily diets by a special score card.[14] Each girl worked daily to improve her score.

Nutrition education was also approached through guidance of students in home project programs. Several girls had the responsibility of planning and preparing the daily meals for their families, and meeting the nutrition needs of such varied groups formed the basis of their home projects. Other types of food problems were also solved through guidance of home project work, such as planning, preparing, or eating an adequate breakfast daily.

Food production and food conservation, as well as food storage, were other phases of work stressed both at school and at home and in home projects.

The second phase of the program was carried on in outside activities. This was done in an effort to improve the nutritional status of all those in the school, the home, and the community. Bulletins, pamphlets, and leaflets stressing good nutrition were distributed to the homes of all high school students, and when possible, to all the homes in the district; aid was given other teachers in giving instruction to elementary children, with units on health and nutrition; articles were published in the newspaper; posters were put in the lunchroom, study hall, and classrooms; an assembly program on good food habits was presented; demonstrations were

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[14] See Appendix, Exhibit 10.

prepared for students and adults on the use of fresh fruits, vegetables, and low cost meats; also on the canning of fruits and vegetables; adults were invited to school where food exhibits were shown; students made out balanced menus and collected recipes for booklets which were typed and taken home; and a library of materials on health and nutrition was developed which was available to all who cared to use it.

Home visits by the instructor helped to gain the cooperation of the parents, and brought parents into closer contact with the school. In this way parents learned what the school was trying to do for their children, and in many instances, parents were helped with individual and family food problems.

Few films were used during the program because a projector was not available until late in the school year; but films are excellent teaching aids if they are previewed and evaluated by the teacher who is considering using them for specific purposes. A teacher who tries to guide her students through carefully planned learning experiences will not show a film just because it is available, but will show only the film which suits the purpose.

Since evaluation is important in any improvement program, effort was made to measure progress from time to time. The students were encouraged to judge their own achievement and the fact was stressed that the only true measure is a measure of what they do rather than of what they know. They were urged to help gather information for measuring progress, recording it for analysis, and interpreting results. Participation in the capacity of helpers intensified their interest in the whole program, and their enthusiasm grew as each evidence of improvement came to light.

Improvements were checked from time to time, and the whole process of evaluation gave pleasure and guidance to both student and teacher, as well as to parents and adults in the community.

FINDINGS

The completed survey forms were very carefully studied in order to gain the information needed as a basis for planning the program. The first survey checked was that on food production in the community. This type of survey sheet was distributed to 55 town and farm families, and 51 sheets were returned. Of the 51 families reporting, it was found that 96 per cent had gardens. Furthermore, the average family consisted of five persons and when the amounts raised were checked with the number in the family, it seemed that gardens supplied adequate amounts of vegetables. In fact, many vegetables were sold on the market.

Several types of fruits were grown in the community. Quantities of wild blackberries and sand plums were also to be found, and many strawberries were grown. About half of the families raised enough fruit for the use of their families, part of which was used fresh, and the rest canned or frozen or sold to others. It was estimated that ten per cent of these families placed strawberries, peaches, and blackberries in frozen food lockers for future use. Both strawberries and blackberries were sold by contract to markets in other towns.

Of these reporting, 69 per cent raised cattle for beef which they put in frozen food lockers or canned for future use. The same percentage raised hogs and produced their own pork, much of which was kept in lockers. About ten per cent reported the addition of fish and wild game, such as quail, rabbits, and wild ducks, to their meat supply.

Milk cows were owned by 90 per cent of those who lived on farms and by 50 per cent of the people in town. Eighty-five per cent of the farmers sell milk, and five per cent sell cream. Approximately ten per cent sell

large quantities of milk to Grade A dairies. There seemed to be a plentiful supply of milk, but 30 per cent of the families were using very small amounts.

Every home surveyed, or one hundred per cent, had chickens, and 10 per cent raised turkeys; a few raised ducks and geese. Most of the turkeys were raised for the market, while the chickens were kept for egg production and home consumption. In many homes, chickens, and sometimes turkeys, were put in frozen food lockers for winter use. Eggs seemed to be plentiful and many were sold on the market, but there did not seem to be many used in the homes. The farmers produced the greater portion of feed for their poultry and livestock.

Native black walnut trees and pecan trees produced an abundance of nuts, many of which were sold on the market. Peanuts were also grown for food and as a cash crop.

A previous survey made by the writer revealed that 82 per cent of the families had pressure cookers which they used both for food preparation and food preservation. Refrigerators were owned by 68 per cent of those living on farms and by 87 per cent of those living in town. In both cases about half of the refrigerators were mechanical and the remaining ones were ice refrigerators. Eighty-two per cent of all the homes surveyed had cellars in which they stored much of their vegetables and fruits, both fresh and canned.

According to the survey sheets, every family which raised a garden or fruit, carried on a food conservation program. Many of the mothers belonged to Home Demonstration Clubs and as a part of this program were encouraged to can adequate amounts of fruits and vegetables for their families. Most of the families stored large quantities of Irish potatoes,

sweet potatoes, and onions for winter use.

As a result of this survey it was found that most of the families in the community had access to dairy products, poultry and eggs, meat, and fresh vegetables, and fruits in season. Many food products were canned, stored, or frozen, and used when fresh products were not available.

The food check sheets of ninety-eight high school boys and girls when tabulated, revealed that the breakfast habits of the boys were far superior to those of the girls. Seventy-five per cent of the boys ate regularly some type of breakfast, while only 47 per cent of the girls ate breakfast regularly. Only 7 per cent of the boys omitted breakfast entirely, while 23 per cent of the girls never ate breakfast. However, only 45 per cent of the boys and 28 per cent of the girls had adequate breakfasts.

TABLE I

BREAKFAST HABITS

Breakfast Habit	Boys		Girls		Combined	
	No.	%	No.	%	No.	%
Ate breakfast regularly	37	75	23	47	60	61
Occasionally ate breakfast	9	18	14	30	23	24
Never ate breakfast	4	7	11	23	15	15
Ate adequate breakfast	22	45	13	28	35	36

Figures combined for boys and girls showed that sixty students ate breakfast regularly, 23 ate breakfast occasionally, and fifteen never ate breakfast. However, of the 98 students reporting, only 35, or slightly more than one-third, were getting adequate breakfasts.

Other inadequacies, also were brought to light, and combined results of both boys and girls are given in Table II. Of the breakfasts scored, 22 per cent had no eggs; 47 per cent, or almost half, ate no fruit; and slightly more than one-third had no cereal. Other marked deficiencies in daily diets were as follows: fifty per cent showed a lack of citrus fruit; 48 per cent showed inadequate milk consumption; and 41 per cent showed a lack of fresh fruits and vegetables in the diet.

TABLE II

DIET INADEQUACIES SHOWN BY THE SURVEY

Type of Inadequacy	Boys and Girls	
	No.	%
No eggs for breakfast	22	22
No fruit for breakfast	46	47
No cereal for breakfast	34	35
Drank no milk during the day	26	26
Daily lack of citrus fruit	49	50
Daily lack of fresh fruits and vegetables	40	41
Inadequate milk consumption	47	48

After checking these food lists in terms of adequate diets, it was found that 26 per cent had "good" diets; 32 per cent had "fair" diets; and 42 per cent had "poor" diets.

When the first check was made, a number of the high school students were still going to town for lunch. The survey showed that 60 to 70 per cent ate in the school lunchroom while 30 to 40 per cent went to town. A check of these lunches eaten at town showed that 90 per cent were choosing lunches of hamburgers (or sandwiches), soft drinks, and candy. This

meant that 27 to 36 students still were choosing daily this high carbohydrate type of lunch in preference to the balanced meal in the lunchroom.

A study of the foods left on the trays in the lunchroom, checked on three successive days, revealed that fresh vegetables were rejected more often than other foods. On the first day, 25 per cent left the lettuce on their trays; the second day 33 per cent returned the raw vegetable salad; and the third day 30 per cent returned lettuce and tomato salad. Other foods such as spinach, peas, green beans, corn, and cooked tomatoes were rejected by many students. Pie and cake seemed to be favorite desserts while fruits, both cooked and raw, were not liked. The amounts of meat, potatoes, and gravy left on trays were negligible.

Of the total number of students, 92 per cent said they ate between meals. Of these, 47 per cent ate candy; more than one-fourth had ice cream, and soft drinks; about one-third ate fruit; and about one-third had pie, cake, cookies, or similar sweets.

Eating between meals was prevalent in this community, and reasons given for this practice were; (1) habit, (2) missed a meal, (3) hungry, (4) sociability, (5) something to do, and (6) like it. Soft drinks, candy, and other sweets or carbohydrate-rich foods were a predominant part of the pattern of undesirable food habits. However, it was noticed by teachers and others that the students consumed less of these after the lunch room was established. Store owners and clerks in town noted this fact, also.

After good nutrition had been emphasized for nine weeks, diet lists were again checked in order to note if any improvement had been made. At

this time, 40 boys and 30 girls were eating breakfast regularly, a gain from 61 per cent to 71 per cent. Seven boys and 10 girls occasionally ate breakfast, while only three boys and eight girls were omitting breakfast entirely. Forty per cent were eating adequate breakfasts, compared to the earlier figure of 35 per cent. (See Figure 1.)

It was found that 35 per cent had "good" diets which was a gain of nine per cent; 35 per cent had "fair" diets, a gain of three per cent; and 30 per cent had "poor" diets, which was 12 per cent less than the first check showed. Ninety per cent were eating in the school lunch room, compared to seventy per cent at the first check, and more students were eating the fresh and cooked vegetables. However, ten per cent of the students were still eating the high-carbohydrate meals at the cafe.

The number eating between meals was lowered from 92 to 82 per cent, and these reported eating more fruit and ice cream, drinking more milk and fruit juices, and less candy and soft drinks.

The third check given in the spring not long before the close of school, showed that more improvement was made in this interval, probably because the two higher classes, Homemaking II and III, had been stressing good nutrition, and because students, teachers, and parents were becoming more aware of the nutrition program. Eighty-five per cent were eating breakfast regularly, five per cent occasionally, and only five per cent omitting breakfast entirely. Of the 85 per cent who were eating breakfasts regularly, sixty per cent were getting adequate breakfasts, compared to 35 per cent at the beginning of the program. Figure I shows the gains made during the year in the breakfast habits of these students.

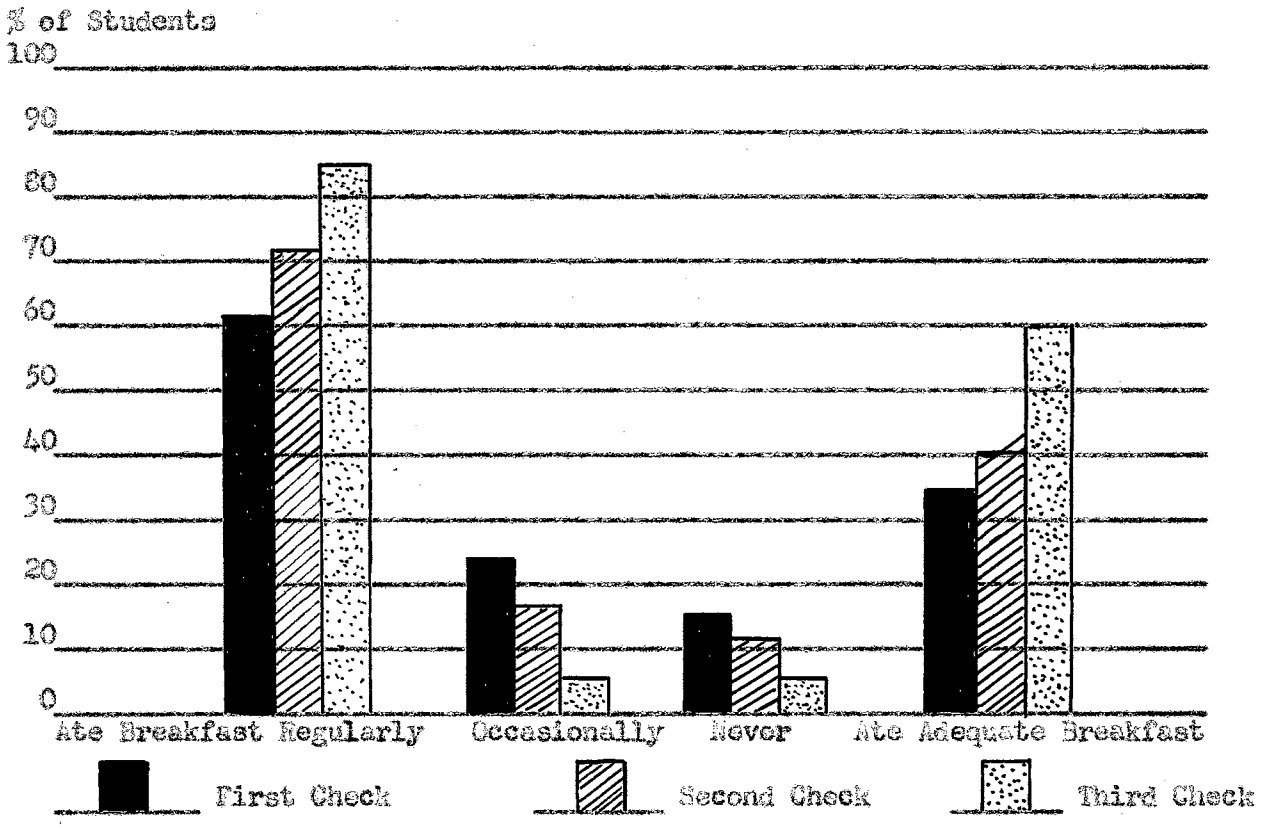

Figure I. Effect of One Year's Nutrition Emphasis on the Breakfast Habits of the High School Students.

Diet checks revealed that 53 per cent now had "good" diets compared to 26 per cent on the first check; 35 per cent had "fair" diets, which was no gain over the second check, but a gain of three per cent over the first; and only 12 per cent had "poor" diets, compared to 42 per cent in the beginning. The improvement made in the diets of the high school students after the year's emphasis on good nutrition are shown in Figure II.

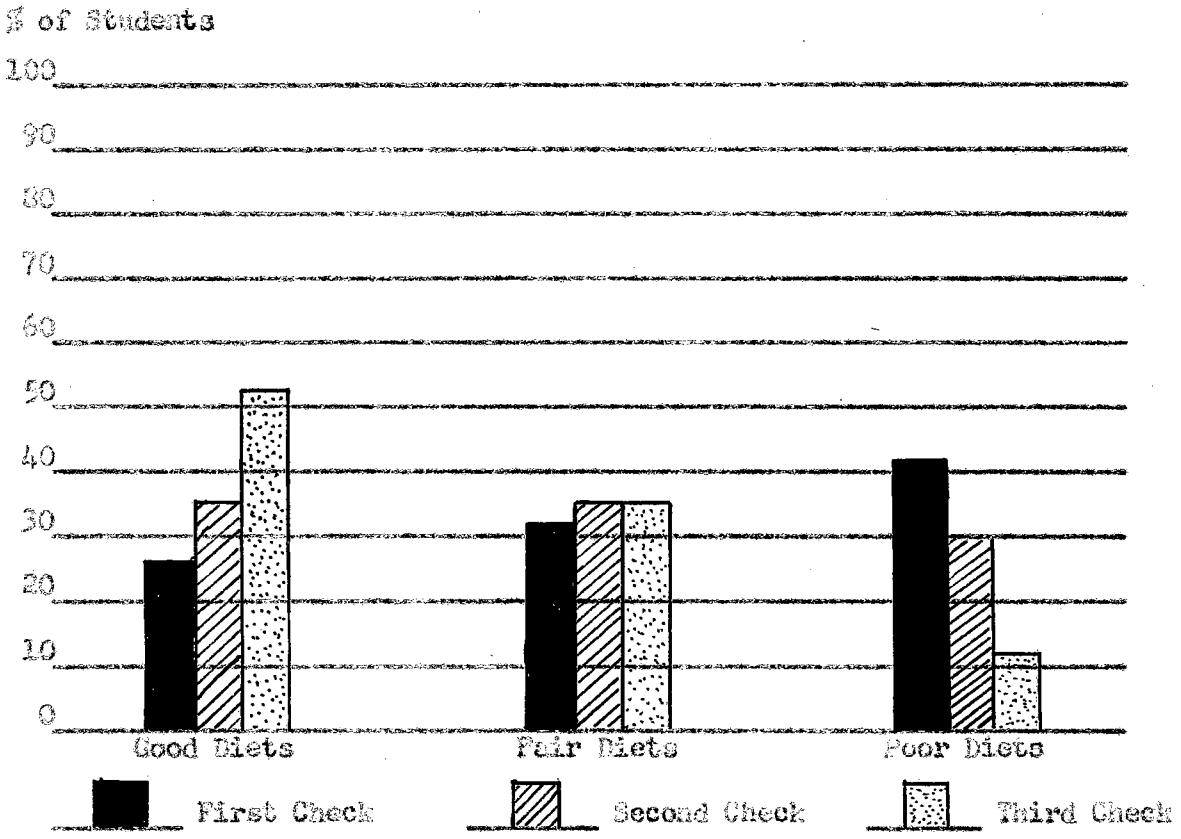

Figure II. Effect of One Year's Nutrition Emphasis on the Diets of the High School Students.

About 15 per cent of the high school students were now going to town for lunch, the five per cent increase over the second check probably coming as a result of warmer weather and because students wanted to go for the outing. There was also a slight increase reported in the number of soft drinks and in the amount of ice cream consumed which was, also, probably due to the warm weather; but there was a decrease in the amount of candy, pie, cake, and other sweets eaten between meals. In fact, only 70 per cent reported eating between meals, compared to 92 per cent earlier in the school year.

At the time of the third survey, 85 per cent of the high school students were eating in the school lunchroom. Some of them were still

leaving food on their trays, but this number was small. About 6 per cent rejected the fresh vegetables, and occasionally other foods were left if the servings were large, but the amounts were negligible.

Discussions with students disclosed the fact that some of them objected to the dressings used on the salads. When a different type of dressing was used, or omitted entirely, the students liked the salads.

All of the teachers ate daily in the lunchroom, and they became more conscious of the effects of good nutrition on the students and themselves. Menus and food values were discussed among themselves and with boys and girls. The lunchroom workers tried to improve menus and to make the meals more attractive.

Although no records were kept of the time spent in eating lunch, it was observed that students took more time for eating, and were more sociable and courteous than they had been at the beginning of the school year.

Many reasons for the poor food habits among the high school boys and girls were brought to light. For instance, reasons for omitting breakfast were:

"It will make me gain too much weight."
"I am not hungry."
"I don't have time before the bus comes."
"Breakfast isn't ready."
"I don't like the foods served for breakfast."

It was found that the child chose foods which he liked, and his "likes" were those with which he was familiar; that is, those foods that he was used to eating at home. The socio-economic background of the family and regional food habits were strong determining factors in what was served at home, and hence in the development of what the child liked. Many of the children had limited food experiences because of their home

backgrounds. Milk, for some of them, was an unfamiliar food, and choices of fresh vegetables were limited. Although most of the families had adequate supplies of food, poor habits were prevalent. For instance, many children missed meals, had inadequate daily diets, and ate too many carbohydrates between meals.

Problems peculiar to high school students were discovered. As the child grows older, the American parent tends to decrease his pressure on the child to "drink his milk," and eating what one wishes becomes a symbol of increasing personal independence. For example, a mother said, "I can't get Jim to drink milk any more. When he was small we were very careful to see that he ate what he should; but now he won't touch certain foods." American adolescents seem to assert their rights to break as many food rules as possible. They consider themselves adults and feel that they have a right to eat what they please. This fact should have important implications for any program to alter food habits.

Also, high school students tend to do what the "crowd" does; or they tend to follow some outstanding leader. Even when they have accurate information they will disregard it "because Mary does."

With the high school girls, the feeding problem was more difficult than with the boys. Many of the girls took a soft drink at the lunch period instead of eating the regular school lunch because they were "afraid of putting on weight." Lessons in caloric values of foods helped these girls in understanding how they could obtain essential nutritive value and yet keep calories at a minimum. Personal appearance was also a factor in gaining the cooperation of the girls. High school students are sincerely interested in self-improvement and this interest led the

way to understanding more of the "hows" and "whys" of nutrition than they learned in the grades. Individual guidance of students with such personal problems as adjusting body weight often stimulated them to practice food habits which helped them make that adjustment.

The high school boy usually presents the reverse of the picture of the overweight girl. All too often he is being starved because neither his parents nor the school lunchroom managers recognize his very high demand for calories, and they have no appreciation of the quantity of food, that he should eat. In the case of both the girls who are afraid of gaining weight and the boys who are not getting enough calories, the result is fatigue and inability to study and keep up grades. In Ripley, the boys who engaged in extra-curricular activities, such as basketball, baseball, and track, were given larger portions of food. However, other students could have additional food if they desired it.

The findings show that food habits can be changed, because the students improved their food practices when they learned what changes were needed, and were motivated to learn about foods and to apply this information to their own diets, and when they had access to right kinds and amounts of food.

Although it is difficult to measure, parents change their habits and attitudes toward foods. One mother said, "I ate breakfast with the children one morning and felt so much better that now I eat breakfast every day. I used to feel worn out by noon, but I've found that a good breakfast keeps me going. The children feel better, too." Evidences of increased interest on the part of parents and other members of the community in the nutrition activities of the school, are proof that something is being accomplished.

CONCLUSIONS AND RECOMMENDATIONS

Recent literature and surveys on nutrition imply that many families in the United States, as well as in other countries, are not well-fed. The percentages change whenever economic conditions change. Higher salaries may provide more money for food; but no matter how much is spent for food, nutrition does not improve unless money is spent intelligently, and unless food is properly prepared and eaten in adequate amounts for utilization in the body. Money is only important in diet if it is spent largely on protective foods. Nevertheless, studies show that the people of the United States need, as a nation, to consume more milk, more butter, more tomatoes and citrus fruits, and more leafy green and yellow vegetables.

When people are really starved, the signs and symptoms are obvious. The difficult cases of malnutrition are those which represent minor deficiencies of some of the essential elements. Now, two types of hunger, called "hollow" hunger and "hidden" hunger, are recognized. Hollow hunger in induced by the absence of enough food. Hidden hunger may occur in people who satiate themselves with vast quantities of food and fail to realize that certain minimal amounts of proteins, carbohydrates, fats, mineral salts, and vitamins are essential to health.

Here in America, most prosperous of all the nations in the world, both types of hunger are apparent. Again and again people have been told by experts in various aspects of the problems of nutrition, that nutrition is one of the greatest problems that confronts the nation today. These experts, who are physicians, dietitians, home economists, food

economists, and educators, have assembled the important facts, have indicated the needs for research, have undertaken research, and have attempted to bring this knowledge to all the people. The results have been apparent in newspaper articles, in magazines, radio announcements, in various bulletins and pamphlets, and in the reassembling of the curricula of various schools. Nutrition is the key word of the hour.

Considerable money has been spent each year in an effort to put nutrition education materials into the hands of classroom teachers and others. Even the casual observer is impressed by the formidable amount of such materials as pamphlets, posters, films, booklets, and pictures, both from governmental and industrial sources, which eventually reach nutrition workers. While there was little question concerning the amount of material available, the use to which it was put was a more valid criterion of its worth. It was assumed that if nutrition education material were used effectively there would be not only increased knowledge of nutrition facts, but also improved nutritional practices on the part of the individuals who used such materials.

Child health has improved, but not at the same rate nor in proportion to the increase in knowledge in nutrition. Application still lags far behind knowledge; communities are still confronted with malnutrition and, therefore, with the problem of improving the quality of the food intake, and in some cases the quantity of food eaten.

The nutritionist can see the results of poor feeding; however, no teacher should come to any definite conclusions about the food habits of the students until she has made a diagnosis of the local situation. Educational procedures will gain in effectiveness as they are geared more

directly to the needs of the individual or of the specific community, and as they conform more closely to democratic techniques. In efforts to change food habits, consideration must be given possible unknown factors in the existing diet and the effect of change on the intake of other foods. Certain information is necessary and some kinds of data, such as that about available food in the community and local food habits, may be collected and studied. This data gives information which helps to establish emphasis points for nutrition instruction in the classroom, in the school lunch room, and at home.

There are several ways to collect data about food habits; but reliable measurements are not easily obtained and are even more difficult to interpret. However, two types of surveys were made for the purposes of this study: one on the available food in the community and the other on the food habits of the high school students. The results of these surveys showed that there was an adequate supply of food or means of obtaining it; also, that most of the students had poor food habits and inadequacies in their diets, such as: irregular meals, inadequate meals, the extensive use of soft drinks and candy, and between-meal eating.

A study of the reasons why people eat what they do revealed the fact that food acceptance is a complex reaction influenced by biochemical, physiological, psychological, social, and educational factors. Metabolic conditions, age, sex, and mental state are factors of importance, and people differ greatly in their sensory response to foods. The food likes and dislikes of the individual are governed by race, tradition, economic status and environmental conditions. From these facts it was concluded that changing food habits is a slow and difficult process.

One objective of the research was to determine effective ways of teaching good nutrition so that food habits would be improved. It was based on the assumption that the effectiveness of teaching nutrition will manifest itself not only in measurable changes in nutritional status, but also in measurable changes in behavior.

It was found that food habits can be changed, and that there are two ways of doing this; through action and through education.

The action came first through providing food for the students in a school lunchroom. Evidence has been presented that when the food intake of children is improved in quality and quantity, measurable improvement in nutritional status has been shown. The writer believes that the school lunch program was an important contributing factor in bringing about improvement in the nutritional status of the Ripley students; and that there are certain objectives which must be attained if any school lunch program is to contribute to the nutritional well-being of the child. These goals are expressed concisely and are presented here for consideration and study:

(1) School administrators and educators must understand the importance of good nutrition for school children, and understand the value of the school lunch in nutrition education. (2) The school lunch must be a part of the total school program. Teachers need to have training which will provide sufficient background in nutrition to be able to give the children adequate guidance in food selection and the development of desirable food habits. (3) The school lunch program must be managed by trained lunch managers, assisted by employees who have been given adequate training for their specific jobs. (4) The school lunch must be eaten by "trained" children—

that is, children who are learning about foods in relation to nutrition and health and who recognize the school lunchroom as a laboratory for educational experiences. (5) The school lunch program must be run on a non-profit basis, financed in the same way that other school services are financed. The sale of non-essential foods and beverages at lunch time or at any other period of the school day should not be permitted. (6) There must be further research and study of the nutritional needs of children, of ways of developing new food habits, and of how to teach nutrition to boys and girls so that they will put into practice what they are taught. (7) Nutritionists, dietitians, public health workers, and health educators must be alert to the significance of the school lunch as a contribution to the nutritional well-being of children and must direct their efforts to the fulfillment of such a program as has been described.

The study indicates that the lunch at school is not enough; supplying of food alone does not bring permanent benefits to the child. Education must go hand in hand with the food. Although the school lunch should be an integral part of the educational program, it means more than merely feeding the child. This was shown in the Florida studies by Abbott[1] when the hemoglobin values of school children were found to decrease during vacation. Also, the children had lost weight during the summer months. Therefore, education must accompany the feeding program so that the food practices of the children will continue to be sound when they are away from school.

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[1] Abbott, op. cit.

It was also pointed out that one of the most important parts of the job of making people strong and healthy will take place in the homes of the nation, and that improvement in nutrition is a home-community-school enterprise. Schools are in a strategic position to assist family members of all ages in reaching this important goal, but teachers need to work cooperatively with the homes in order to make the most improvement. Also, in this way, parents are helped to make improvements in their own habits and in their meals at home.

There is no one way to teach nutrition, but teachers should discover ways of presenting nutrition information and experiences which yield desirable outcomes. The writer found that several methods or techniques may be used, but whatever ones are used will be effective in so far as they emphasize pupil-teacher planning, participation, and evaluation. If students themselves participate in the planning, they will be much more likely to carry on the planned activities and reach the desired outcomes.

This study and those of others, seem to indicate that nutrition and health education should begin early. In fact, good habit formation should begin at birth, and if food habits are formed early, then it is imperative that the child receive instruction as soon as he enters school. Education should continue on through adult life, because conditions and situations are constantly changing, and scientific facts are being discovered every day.

The problems of teachers at all levels of training are not the same. Some recommendations to teachers might well be given here. Teachers of primary grade pupils can and should plan experiences which help children form good habits and attitudes about food. They know that habits and

attitudes are formed rather quickly by pupils in these grades, and should make special efforts to guide children in forming desirable ones. In the first, second, and third grades, teachers can introduce many new foods and encourage children to like them. Teachers must take care, however, to introduce those foods which are excellent sources of body building and protective nutrients as opposed to those foods which give energy only.

Teachers of the upper elementary grades know that their pupils have some rather deep-rooted habits and attitudes about food; yet they may be guided to improve those habits once they gain an understanding of the "how" and "why" of nutrition. Teachers who have tried it, say that an animal-feeding experiment is an excellent activity for helping students of this age to gain that understanding—especially if the pupils help with the planning as well as conducting and evaluating the experiment.

High school teachers have different problems; but all teachers need to understand that improving the nutrition of children is not the exclusive concern of the school, but of the community, state, and nation as well.

After talking with teachers, it seems to the writer that most of them want and need more nutrition information as a part of their foundation work in college. It seems that nutrition workshops for teachers during the summer months might help solve the problem. This does not mean that such instruction be given homemaking teachers only; it means that all teachers, grade and high school, should have an opportunity to acquire the knowledge needed to teach simple nutrition to boys and girls. Also, no teacher should attempt to teach nutrition unless she is convinced of its importance for her own health and that of others, and shows evidence of

this conviction through her own food habits.

The study revealed that the high school boys' food habits were superior to those of the girls. According to this finding, girls need instruction more than the boys do. However, the findings also show a need for changed habits among the boys. High school girls receive more guidance than boys with respect to nutrition problems, due probably to the fact that nutrition education is largely allocated to home economics curricula. Some instruction in those curricula might well be offered to boys as well as girls. Indeed, there are many phases of nutrition which may be correlated with almost any course within the usual high school curricula.

When working with adults in connection with the nutrition program, it is well to remember that the purpose of adult education is two-fold. First, it seeks the support of the adults interested in school children by keeping them informed of the nutrition education program in the schools. Secondly, it tries to extend nutrition education service to adults who have not been reached by other agencies. It is obvious, therefore, that nutrition education for children is only a part of a total community program; but a vitally important part, for the nutritional practices which children develop during childhood will have profound influence on the food habits and the health of future generations.

The need for nourishment is not merely a physical need, but also an emotional necessity. Needless to say, a child's ability to "take it" will be influenced profoundly by physical factors, including his state of health, the extent to which he can obtain proper rest, and the degree to which he obtains an adequate diet. It must be remembered that many factors enter into the building of sound bodies and minds, but food is an important element.

According to Fishbein,[2] the United States today leads the world in scientific medicine. It leads the world in the health and physical fitness of its people. Much of this physical fitness depends on the quality of nutrition that prevails, but if people use all the knowledge and resources available, the advantages of adequate nutrition can be extended to develop a still healthier people with greater resistance, endurance, and strength; a much happier people who will be able to help other countries with their nutrition problems.

Finally, a nutrition program provides an opportunity for teaching good citizenship and democratic participation - an opportunity to apply through actual experiences and practical activities the principles of sound, progressive education. Such a program can serve as a means for greater participation by the community in school projects. If growth comes as a result of working and sharing with others, then students will have an opportunity to reach optimum development and thereby become better citizens of a democratic nation.

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[2] Morris Fishbein, The National Nutrition, p. 290.

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Exhibit 1

"Basic Seven" Food Groups

Group One: Green and yellow vegetables

Group Two: Oranges, tomatoes, grapefruit

Group Three: Potatoes and other vegetables and fruits

Group Four: Milk and milk products

Group Five: Meat, poultry, fish, or eggs

Group Six: Bread, flour, and cereals
(natural whole grain or enriched)

Group Seven: Butter and fortified margarine

From the U. S. Government Chart, U. S. Department of Agriculture

Exhibit 2

For an "A" Type Meal

TYPE "A" LUNCH SHOULD INCLUDE:

I. MEAT OR MEAT SUBSTITUTE which may be one of the following:

1. fresh lean meat, processed meat, cheese, fish, poultry meat
   (2 ounces-uncooked measure-per serving)

2. eggs
   (1 per serving)

3. dried peas, beans or soy beans
   (¼ cup-cooked measure-per serving)

4. peanut butter
   (4 tablespoons per serving)

II. VEGETABLES and/or FRUIT which may be

1. raw, cooked or canned vegetables (¾ cup per serving) — (3/8 cup vegetables plus 1 serving raw fruit, or
2. raw, cooked or canned fruit (¾ cup per serving) — or (3/8 cup vegetables plus ½ cup fruit juice)

III. BREAD which may be

1. whole wheat or enriched white bread
   (1 or more slices per serving)

2. muffins or other hot bread made of whole grain cereal or enriched flour

IV. BUTTER or FORTIFIED MARGARINE
(2 teaspoons per serving)

V. MILK - whole milk
(½ pint per serving as a beverage)

OANC
Lunchroom Workshop
August 12 - 16, 1946

Exhibit 3

A Week's Menu
Meeting Requirements For
Type "A" Lunch

Date _____

Type A Lunch Shall Include:	Monday	Tuesday	Wednesday	Thursday	Friday
At least ½ pint of fresh milk	Milk	Milk	Milk	Milk	Milk
2 oz. of Meat or Fish or 1 Egg, or 2 oz. of Cheese, or ½ cup (cooked measure) dry peas, beans, or 4 tablespoons Peanut Butter	Meat Loaf	Salmon Salad	Steak	Cheese	Navy Beans
1 Cup of Vegetables or Fruit or ½ Cup of Each	Mashed Potatoes Cole Slaw	Buttered Peas Lettuce	Potatoes Gravy Cabbage-Carrot Salad	Green Beans Lettuce-Tomato Salad	Cooked Cabbage Carrot Sticks
1 or more slices of Bread or Muffins or other Hot Bread made of whole grain or enriched flour or cereal	Bread	Bread	Hot Rolls	Bread	Hot Rolls
2 teaspoons Butter or Fortified Margarine	Butter	Butter	Butter	Butter	Butter
Dessert	Peaches			Blue Plum Cobbler	Baked Apples

OAAC Lunchroom Workshop 1946

Exhibit 4

DO YOU WANT TO GIVE YOUR CHILD A PRICELESS GIFT?

Dear Parent:

Buoyant health is one of the greatest gifts that can be bestowed on a child. His opportunity for success and happiness in school, and indeed in life, depends in large measure on his health. The goal of good health is not an easy one to reach, but it is a goal for the home, the school, and the community.

We are trying to help your child develop good health habits, but upon you rests the real job. Teaching good eating habits in school, for example, will not be effective unless the child follows through at home what he learns in school.

Together we must:

1. Make sure that each child goes to bed on time.
2. Make sure that he gets fresh air, exercise, and sunshine.
3. Make sure that he eats adequate amounts of a good selection of foods at regular times.
4. See that he has regular dental check-ups and proper medical care.

We are sending you this letter to keep you informed of what we are teaching your child and also to ask your help in this health and nutrition program.

Sincerely,

Exhibit 5

HOW PARENTS CAN HELP WITH NUTRITION EDUCATION

The school makes a strong plea to you to let your children help with the daily preparation of food. Their share in getting the meals ready is a normal part of a child's education.

Encourage your children to set the table, dry the dishes, prepare the vegetables, and help in the simpler parts of cooking.

Teach your children to eat a variety of foods, beginning with very small portions of unfamiliar foods.

From time to time your children will bring home simple recipes from school. If it can be arranged, let them prepare dishes from these recipes with only such assistance from you as is necessary. This practice will stimulate their interest in homemaking.

Occasionally let your children try their hand at planning family menus. They will enjoy eating meals they have planned or helped to plan.

Show appreciation of these efforts on their part and they will do still better.

If possible, arrange for your boys and girls to have small gardens of their own, to care for them, and to have responsibility for them. This will give them firsthand knowledge of several important and basic groups of foods.

For our part, we are planning to provide experiences in handling food at school also. We realize that the school has many opportunities to help in establishing good health habits.

Exhibit 6

SURVEY OF FOOD PRODUCTION IN RIPLEY COMMUNITY

Name of Family_____ Occupation_____
Home in town_____, Country_____, Owned_____, Rented_____
Size of farm_____

Family members	Age	Family members	Age
1		4	
2		5	
3		6	

Spring gardens _____ Area_____ Fall gardens _____ Area_____

Place a check mark after foods raised in your garden and give the amount raised.

Food	Check	Amt.	Food	Check	Amt.
1. Peas			14. Cucumbers		
2. Beans			15. Squash		
3. Irish potatoes			16. Cabbage		
4. Sweet potatoes			17. Rhubarb		
5. Beets			18. Asparagus		
6. Corn			19. Cantaloupe		
7. Okra			20. Watermelons		
8. Carrots			21. Turnips		
9. Tomatoes			22. Lima beans		
10. Lettuce			23. Crowder peas		
11. Onions			24. Black-eyed peas		
12. Radishes			25. Soy beans		
13. Peppers			26. Pumpkins		

Please check fruit produced.

Fruit	Amount	Fruit	Amount	Fruit	Amount
1. Apples		5. Apricots		9. Strawberries	
2. Pears		6. Cherries		10. Blackberries	
3. Plums		7. Peaches		11. Gooseberries	
4. Grapes		8. Currants		12. Boysenberries	

Meat	Amount	Poultry	Number	Nuts	Amount
1. Beef		1. Chickens		1. Pecans	
2. Pork		2. Turkeys		2. Black Walnuts	
3. Mutton		3. Geese		3. Peanuts	
4. Lamb		4. Ducks			
5. Fish		5. Guineas			

Milk cows - number _____ Milk sold weekly _____
Milk produced weekly_____ Cream sold weekly_____
Butter churned - Amount _____ Butter bought weekly_____
Eggs produced daily _____ How many used weekly_____ Sold_____

Crops planted for cash or feed: 1. 2. 3. 4. 5. 6.
Conservation of foods: vegetables, fruits, and meats.

Item	Quarts canned	Amt. stored	Amt. dried	Amt. frozen	Amt. sold

Exhibit 7

FOOD CHECK SHEET

Girl _____ Boy _____ Grade _____ Age _____

1. Do you eat breakfast - always_____ Sometimes_____ Never_____
2. What did you eat for breakfast this morning?
   a. d.
   b. e.
   c. f.
3. Do you eat lunch in the lunch room? Yes____ No____
4. If you eat lunch at town, what do you usually eat?
   a. c.
   b. d.
5. What did you have for supper last night?
   a. e.
   b. f.
   c. g.
   d. h.
6. What do you usually eat between meals?
   a. Before supper_____.
   b. Before bedtime_____.
   c. Other times_____.
7. Kind of flour used by your family
   a. White_____ b. Whole wheat_____ c. Both _____
8. Name five favorite foods on the lunchroom menus.
   a. b. c.
   d. e. f.
9. Name five foods you do not like.
   a. b. c.
   d. e. f.
10. Name five foods you would like to have served in the lunchroom
   a. b. c.
   d. e. f.
11. Do you get a quart of milk a day in some form? Yes____ No____
12. Do you drink a glass of milk each day in the lunchroom? Yes_____ No _____
13. Do you eat a citrus fruit (orange, lemon, or grapefruit) or tomatoes (or drink juice) each day? Yes_____ No_____
14. Do you eat a fresh fruit or fresh vegetable daily? Yes____ No____
15. If so, which ones?_____.
16. What are your favorite foods at home?
   a. d.
   b. e.
   c. f.
17. What foods served at home do you not eat?
   a. d.
   b. e.
   c. f.

Exhibit S

These are the Foods I Ate and Drank on _____

At BREAKFAST (Name foods and give amounts, such as one egg):

1. _____ ____ 5. _____ ____
2. _____ ____ 6. _____ ____
3. _____ ____ 7. _____ ____
4. _____ ____ 8. _____ ____

Between breakfast and noon (name foods and give amounts, such as grapefruit juice, one-half cup):

1. _____ ____ 3. _____ ____
2. _____ ____ 4. _____ ____

At NOON (name foods and give amounts, such as green peas, one-half cup):

1. _____ ____ 5. _____ ____
2. _____ ____ 6. _____ ____
3. _____ ____ 7. _____ ____
4. _____ ____ 8. _____ ____

Between noon and the evening meal (name foods and give amounts, such as ice cream, one dip):

1. _____ ____ 3. _____ ____
2. _____ ____ 4. _____ ____

At the EVENING MEAL (name goods and give amounts, such as fruit salad of oranges, apples, raisins, three-fourths cup):

1. _____ ____ 5. _____ ____
2. _____ ____ 6. _____ ____
3. _____ ____ 7. _____ ____
4. _____ ____ 8. _____ ____

Between the evening meal and going to bed (name foods and give amounts):

1. _____ ____ 2. _____ ____

Exhibit 9

STUDY OF FOODS REJECTED ON LUNCHROOM TRAYS

Name	Foods on the Menu						
	Meat Loaf	Potatoes	Cole Slaw	Bread	Butter	Milk	Peaches

Exhibit 10

HOW SHALL WE SCORE OUR MEALS?

NAME GRADE

	Credits	Score
Milk: 4 cups whole milk or 4 cups skimmed milk plus 1½ tablespoons butter (1 cup of either—4 credits). Count also milk in cooked food	15	
Vegetables: At least twice, other than potato 1 green or yellow 1 raw	5 5 5	
Fruits: Twice or more (once—5 credits) Include orange, grapefruit, or tomato (fresh or canned).	10 5	
Meat, fish, poultry, cheese, or dried peas or beans: Once	10	
Eggs: One	5	
Whole grain or enriched bread or cereal: Twice (once—5 credits)	10	
Butter or enriched butter substitute (in addition to above): 2 tablespoons	10	
No food between meals except fruit or milk	10	
TOTAL	100	
Deduct: 10 credits if you ate no breakfast 10 credits if you drank more than 1 cup of tea or coffee, or more than 1 "cola" drink		
CORRECTED SCORE		

Rating of day's meals: Good_____. Fair_____ Unsatisfactory_____

TYPED BY: FLORRINE E. ADAMS